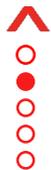


MOTORS

-  Motors meant for cranes
-  The right motor for the right job
-  Quality gives less downtime and better safety
-  We comply with all the international standards





MOTORS MEANT FOR CRANES

**A typical commercial motor is not optimal for crane duty.
We design our motors specifically for use in cranes.**

- A crane motor must make lots of starts and stops with anything from a full load to an empty hook
- It should be able to tolerate a high starting current without overheating
- The motor must be able to rotate in both directions
- Konecranes motors are designed to endure the various forces induced on the normal crane operating environment

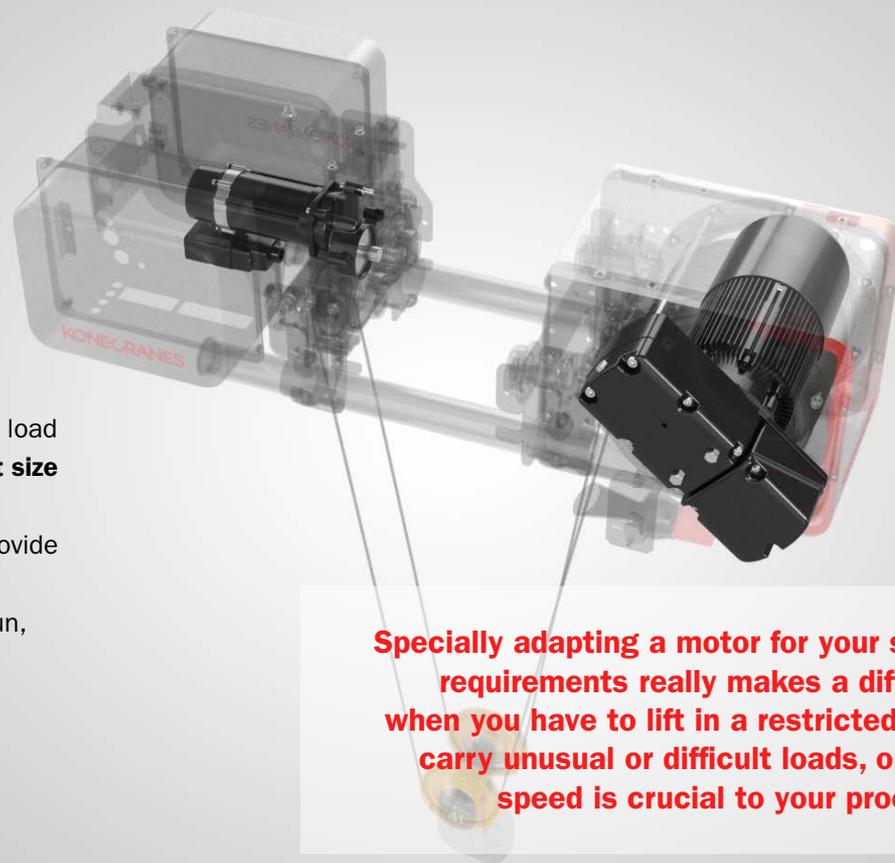


**MADE JUST FOR LIFTING IN CRANES, A KONECRANES MOTOR IS DESIGNED TO
KEEP YOU LIFTING RELIABLY AND YOUR LOADS STEADY FOR MANY YEARS TO COME.**

THE RIGHT MOTOR FOR THE RIGHT JOB

We also tailor our motors for your particular lifting tasks.

- A thinner rotor reduces the moment of inertia, so the motor requires **less torque, less current, and less energy** to lift the load
- A smaller inverter can also be used, which makes **a compact size and better approach dimensions possible**
- If the crane is to be used in a harsh environment, we also provide dust, water and heat protection
- **Lower energy requirements** save a lot on costs in the long run, and are more environmentally friendly
- The right protection keeps your Konecranes equipment functioning perfectly in any hazardous work environment



Specially adapting a motor for your specific requirements really makes a difference when you have to lift in a restricted space, carry unusual or difficult loads, or where speed is crucial to your processes.



QUALITY GIVES LESS DOWNTIME AND BETTER SAFETY

**A well-tested crane is
a safer crane.**

With careful quality monitoring across the whole product development process, Konecranes has a well-earned reputation for safe and reliable lifting equipment.

- We use state-of-the-art software, including FEM simulations, and we cooperate with universities for access to the latest research
- Our extensive testing is backed up by regular internal and external audits
- During development, rigorous testing in all kinds of lifting environments ensures a quality lifting product
- We maintain the same strict testing requirements when tailoring a crane for your specific lifting needs

WE COMPLY WITH ALL THE INTERNATIONAL STANDARDS

Our motor production covers the following standards:

- ISO 9001
- ISO 14001
- OHSAS 18001

Konecranes motors are in conformity with:

• Directives:

- the Machinery Directive 2006/42/EC
- the Low Voltage Directive 2014/35/EU,
- the EMC Directive 2014/30/EU
- ATEX directive 2014/34/EU for EX motors

• Standards:

- EN 60034-1
- EN 60034-5
- EN 60034-9
- EN 60034-14
- IEC 60079 series for EX motors

• Certifications:

- CSA certified (Canada and USA)
- CSA C22.2 NO. 100-04
- UL 1004-1
- ATEX and IECEx for EX motors

• Type of protection for EX motors

- Ex d for Zone 1
- Ex tb for Zone 21
- Ex nA for Zone 2
- Ex tD for Zone 22
- EX markings:
 - II 3 G Ex nA IIC T3 Gc
 - II 3 D Ex tc IIIC T135°C Dc IP66
 - II 2 G Ex de IIC T4 Gb or Ex IIC T4 Gb
 - II 2 D Ex tb IIIC T120°C or T135°C Dd