MOTORS AND DRIVES FOR TURBO APPLICATIONS

up to 15,000 rpm



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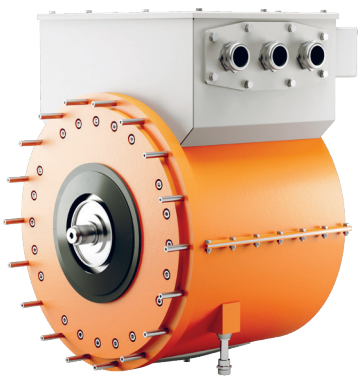

THE SWITCH
A YASKAWA COMPANY

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PASSION FOR SPEED

The need for direct-drive variable speed systems is growing. That's because they do not require reduction or multiplier gears, which are indispensable in conventional electric motor drive systems.

Direct-drive variable speed systems allow you to go gearless, giving you significant savings in maintenance and space. Plus, their full speed control over the entire operating range helps you reach unmatched levels of energy efficiency.

Enjoy the freedom to run gearlessly and efficiently higher than 3,000 or 3,600 rpm

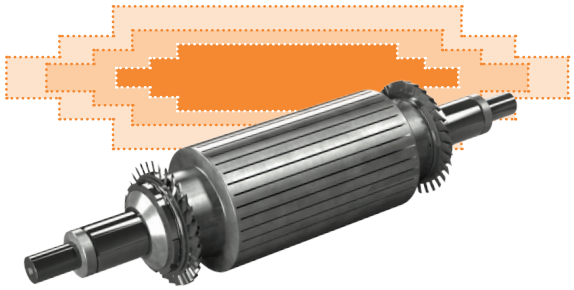
The best choice is solid rotor technology

It's simple. Eliminate the gearbox and gain adjustable full speed control for all turbo applications.

A solid rotor induction motor is a unique type of induction machine with a non-laminated rotor construction. The advantage of the stiff construction is unmatched stability and balance, which offers exceptional rotating system reliability for all types of turbo applications.

In its simplest form, a solid rotor is purely a machined ferromagnetic steel bar. To increase performance, enhancements may be applied, such as slitting, adding a high conductive end ring or even including a rotor cage.

Even better, this solution offers higher energy efficiency and savings.



Solid rotor induction machines

The Switch turbo electrical induction motors eliminate the mechanical gearbox to give you full speed control for your system. By integrating an electrical motor with the load machinery, you get unrivaled space and weight savings.

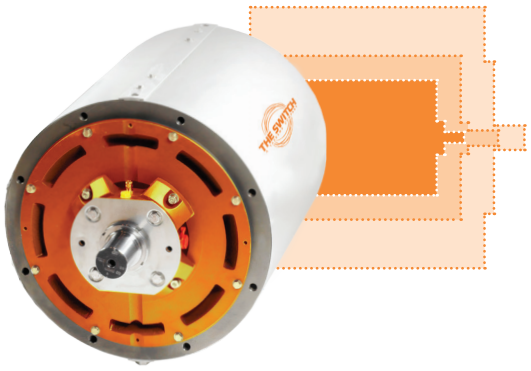
High efficiency

Full speed control ensures operational efficiency and energy savings. High motor efficiency even under partial loads.

CUSTOM-BUILT FOR THE CHALLENGE

Every high-speed solid rotor induction motor is engineered or customized for a specific end use. The results speak for themselves in:

- Turbo blowers
- Pumps
- Vacuum compressors
- Fans
- Turbo generators
- Marine



Compact and lightweight design

Up to 50% smaller in size by integrating electric motor and load machinery. Simple construction creates a cost-effective system. Easily scalable at high power and speed ranges.

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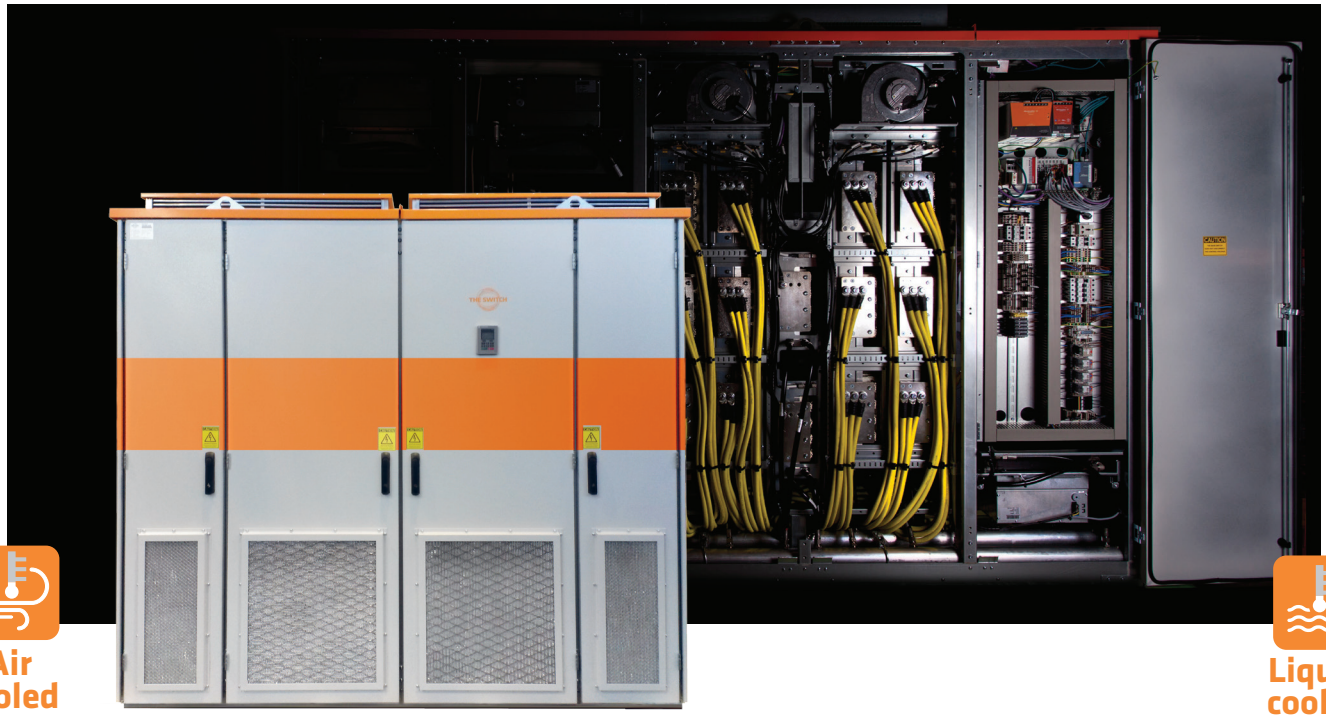
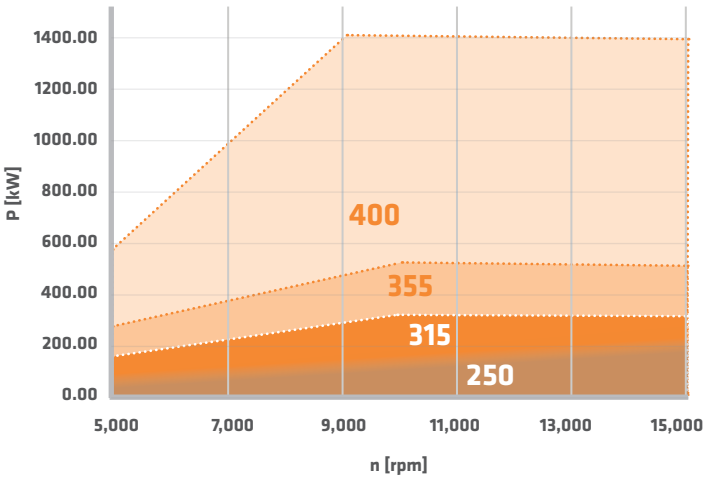


Air cooled

Liquid cooled

Advanced rotor and stator technology
Sophisticated solid rotor construction gives superior mechanical strength to avoid unbalanced vibrations. Tolerates high centrifugal forces and aggressive chemicals.

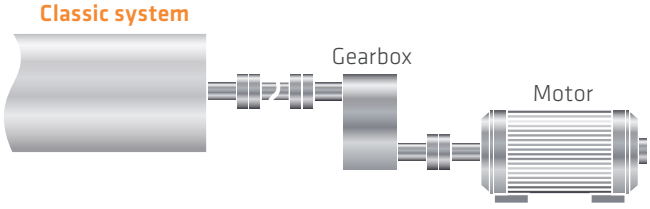
High availability and reduced maintenance need
Robust direct drive with fewer mechanical and electrical components.

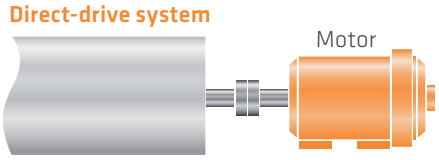


Complete package with variable speed drive
The Switch offers a complete package, including the variable speed drive and motor filters in panels, along with the electrical machine.

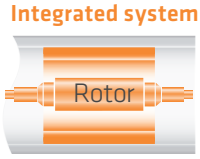
Exceptional reliability
High mechanical integrity, rigidity and durability. High thermal durability.

THE SWITCH COMPLETE TURBO DRIVE PACKAGE



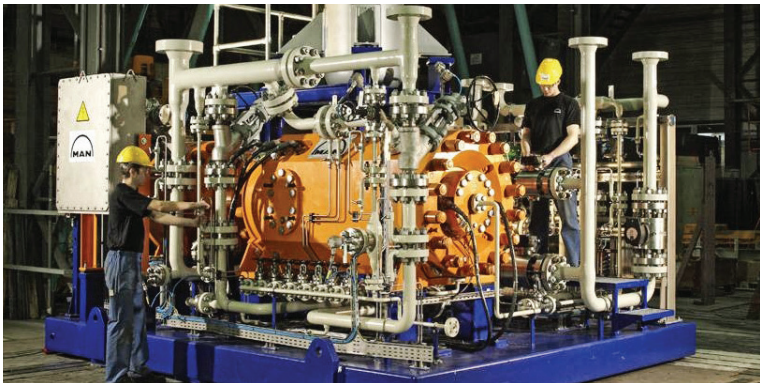


Direct-drive or integrated system is simpler and more cost efficient.

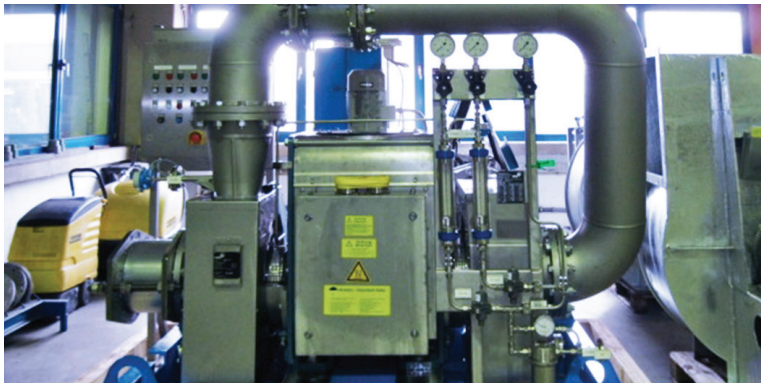


- Delivery scope: only active parts or full motor, variable speed drive and lubrication unit
- Up to 15,000 rpm with standard bearings; higher speeds on request
- Bearing selection: roller bearings, journal bearings, magnetic bearings
- Standard shaft heights: 315, 355 or 400; 250 on request
- Drives: 400/480 V and 600/690 V, liquid- or air-cooled
- Both motor and drive up to multiple megawatts

REFERENCES



Swiss **MAN TURBO** chose The Switch solid rotor technology for a high-power compressor of 8 MW, 10,000 – 12,000 rpm, for a gas application that survives subsea installation with aggressive gases.



German **FIMA Maschinenbau GmbH**, the first chemical industry reference for The Switch, ordered a series of 200 kW high-speed motors for turbo blowers with a speed of nearly 11,000 rpm.

Runtech of Finland has placed continuous volume orders for high-speed motors and drives to be used in its paper machine vacuum systems that run at over 10,000 rpm.

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We are advancing the world with electrical drive trains. Collaborating with The Switch enables you to deliver solutions that produce profitable power generation, optimized processes and efficient energy use.

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