

YASKAWA

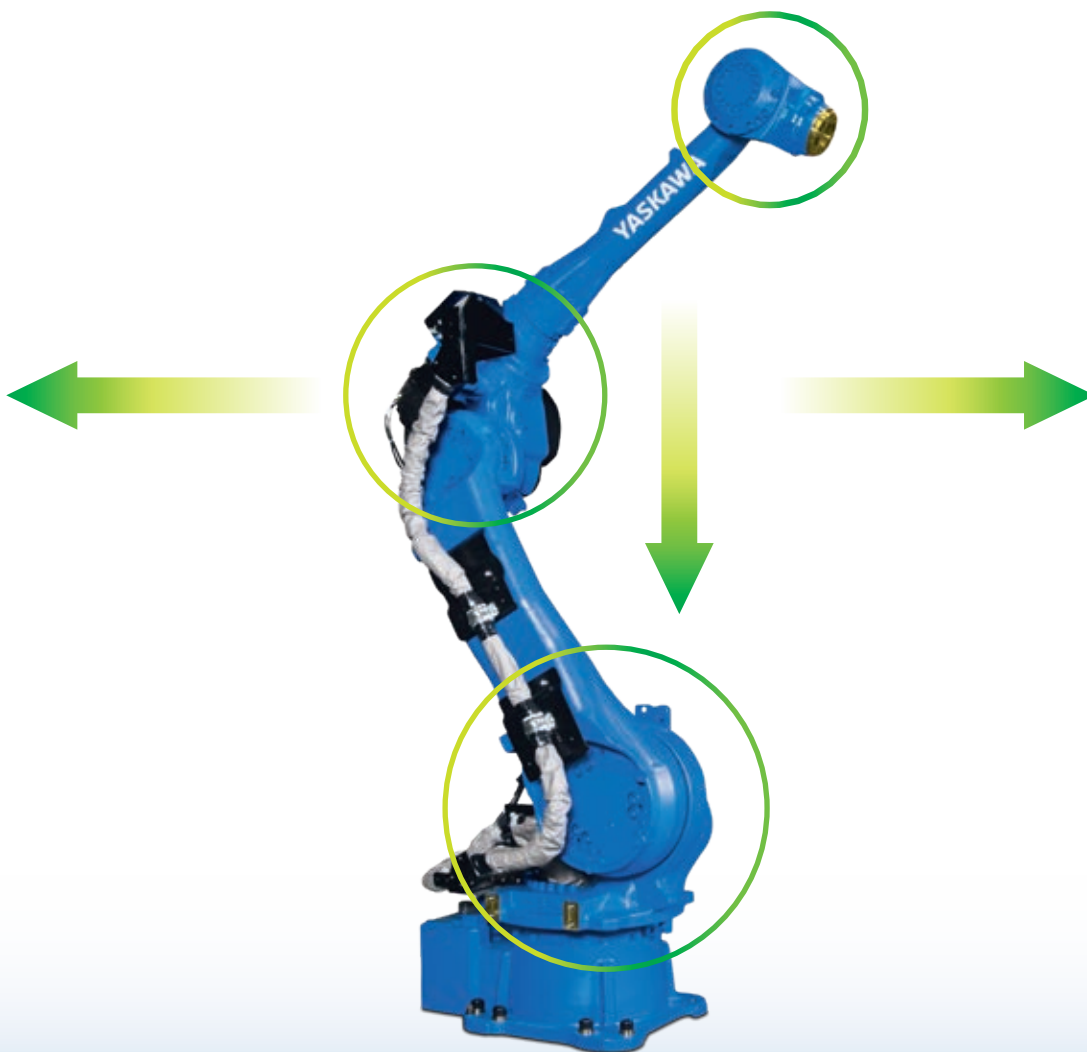
Energy recovery

for greater energy efficiency in your production



Optimize your energy consumption by recovering braking energy

Yaskawa offers a technical solution for feeding robot braking energy back into the in-house power supply system – as standard and without additional hardware. All larger MOTOMAN robots with payloads of 35 kg or more and the current YRC1000 robot controller are able to convert kinetic energy from downward and sideways motions directly into the power supply system. Depending on the motion profile, this considerably reduces the energy requirements of the robot.



Only solution on the market

This unrivaled technical solution is the result of Yaskawa's decades of experience as a manufacturer of drive technology – all servo drives and control packages are optimally adapted for use in our industrial robots.

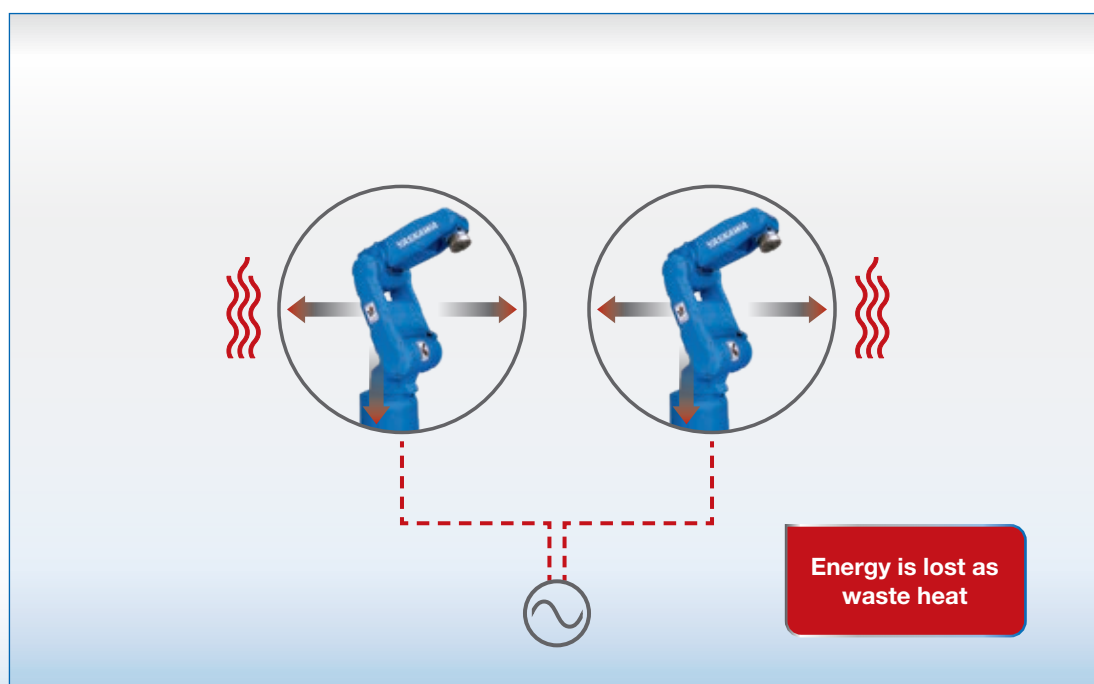
The MOTOMAN robots tap further efficiency potential with their streamlined and compact

design with low moved masses, and the rapid application of brakes during pauses in motion in order to switch off the active position control when not in use. Intelligent operation concepts of the user, including, for example, the automatic shutdown of the robots during planned breaks, also contribute to energy savings. Our experts will be happy to assist you with the planning.

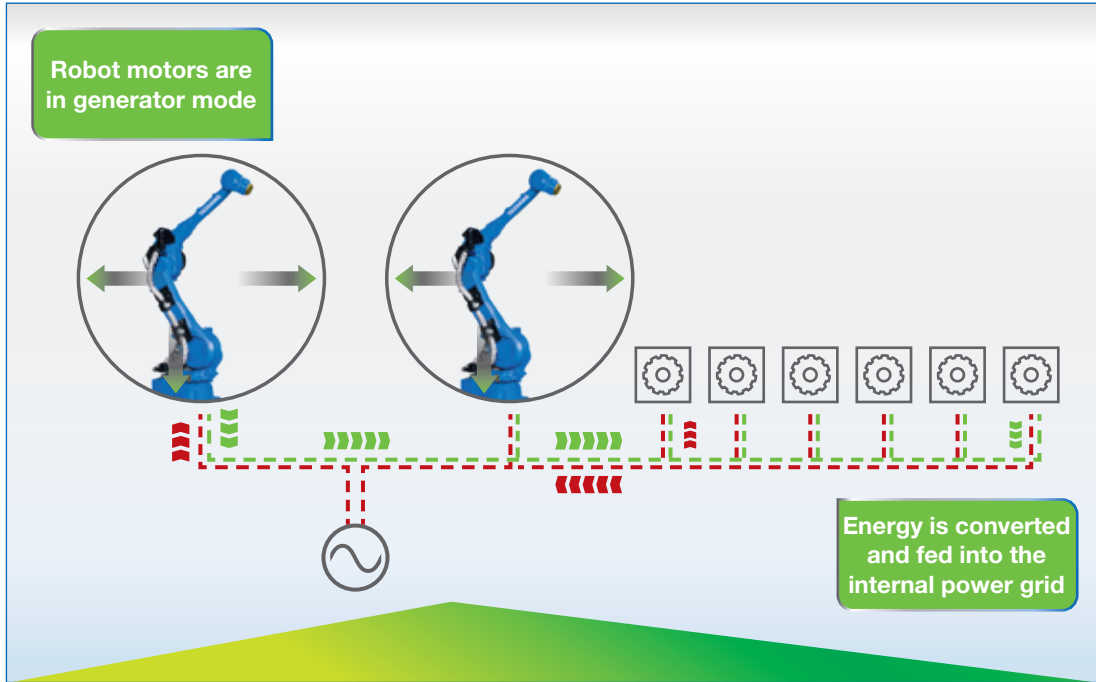


How does energy recovery work in practice?

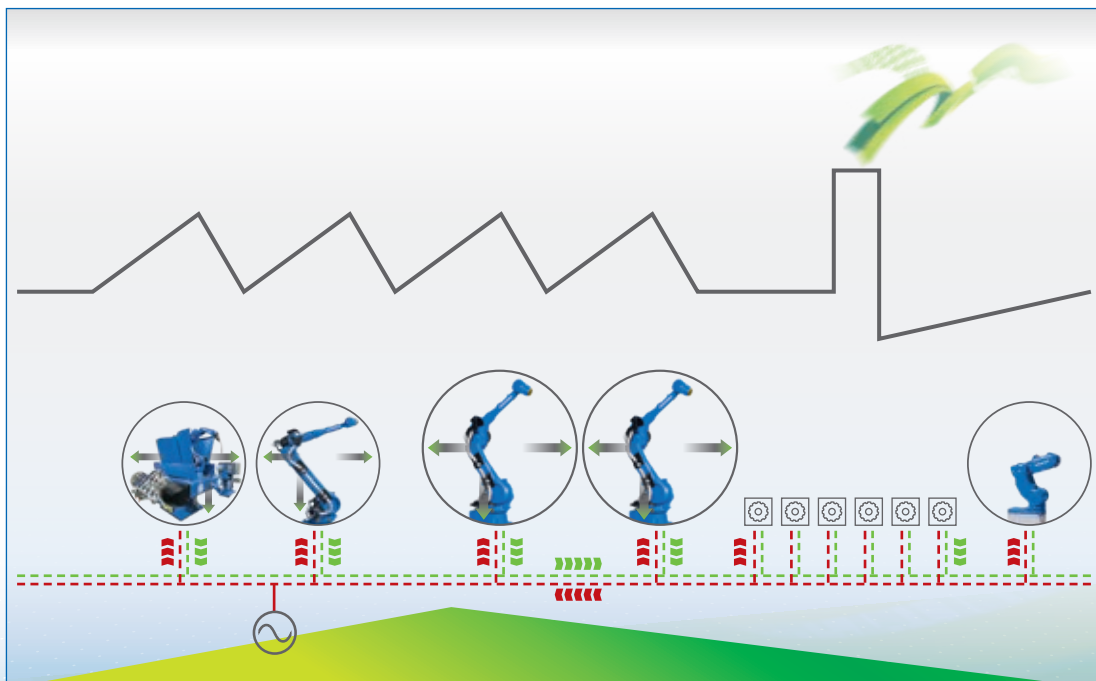
In their varied tasks – such as handling, palletizing or machine tending – industrial robots perform many downwards or sideways motions during which the servomotors dissipate energy and can possibly generate current. Until now, in older robots or other robot models on the market, the energy has been transformed into waste heat by electrical resistors and dissipated unused into the environment.



The solution from Yaskawa feeds the electrical energy back into the in-house power supply system of the user and reuses it without the need for additional hardware. All MOTOMAN robots with a payload capacity of approx. 35 kg or higher and the current YRC1000 robot controller are able to convert kinetic energy from downward and sideways motions directly into 400 VAC with 50 Hz and feed it back into the in-house power supply system. This is also possible with external axes of the robot. Depending on the motion profile, the energy requirements of the robot are thus considerably reduced.



The specific savings depend on the task and the individual motion profile of the robot. They can vary between 8% and 25%. The energy saved has a positive effect on the CO₂ balance.





Energy savings at a glance:

- Due to streamlined design
- Due to efficient motors
- Due to energy saving functions such as “Servo off” as soon as the robot is at a standstill
- Due to efficient programming
- Due to energy recovery

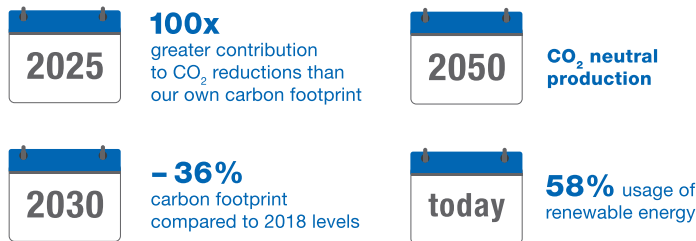
Shaping the future. Sustainably. Together.



Supporting the Sustainable Development Goals



Our Contribution to Climate Protection



Energy efficiency as a strategic corporate goal

Energy efficiency solutions such as this, together with fostering environmental management by means of processes and green products, are an integral part of Yaskawa's global corporate strategy. By 2025, for example, the company aims for its products to save 100 times as much in CO₂ emissions as the company produces.

In this respect, the Yaskawa Group is aligning its activities with the 17 Sustainable Development Goals of the UN and focusing on sustainable projects such as the digitalization of value chains, the use of automation to take over heavy and dirty tasks, and efficient food production in smart agriculture for a future that is sustainable, profitable, and worth living.

More about Yaskawa sustainable goals



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All drawing dimensions in mm.
Technical data may be subject to change without previous notice.
Please request detailed drawings at robotics@yaskawa.eu.

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