

SIGMA-7 SERVO SYSTEMS

THE NEXT REVOLUTION
IN MOTION AUTOMATION



NEW SERVO TECHNOLOGY
LIFTS SPEED,
PRECISION AND
PRODUCTIVITY TO
THE NEXT LEVEL

MORE FROM YOUR MACHINE

SEVEN ADVANCES THAT GIVE SIGMA-7 GREATER AUTOMATION EFFECTIVENESS

Sigma-7 is engineered to bring new responsiveness, reliability and effectiveness to the automation that powers your productivity. The Sigma-7 family of rotary, direct drive and linear servo products continue the legacy of the Sigma series, which has set the standard in innovation and reliability for a quarter century.

IMPROVED PERFORMANCE

Nearly double the servo bandwidth of the Sigma-5 series, with increased feedback resolution and improved vibration suppression functions that maximize your machine's speed and accuracy.

EASIER APPLICATION

Automatic servo tuning right out of the box, plus software that makes automation commissioning faster and easier.

MORE CHOICES

A full range of standard, direct drive and linear servos from 50W to 15kW, ready to interface with the most in-demand motion networks.



ENVIRONMENTALLY FRIENDLY

Able to withstand more rigorous environmental conditions, with features that conserve energy without compromising performance.

SMALLER SIZE

Dual-axis SERVOPACKs and smaller motor sizes to meet end-user demands for a more compact machine footprint.

SAFETY AND SECURITY

New designs which improve machine safety, temperature performance and servo motor life, simplifying machine design and maintenance.

EASY COMPATIBILITY

Sigma-7 directly replaces Sigma-5, offering a performance boost without the need to change any element of your system design.

SIGMA-7 PERFORMANCE FACTS



- **3.1kHz Frequency Response**, nearly double the servo bandwidth of the Sigma-5 systems that set the industry standard in performance
- **New Tuning Functions**: vibration suppression, anti-resonance compensation, friction model compensation and ripple compensation improve machine speed, accuracy and smoothness
- **Improved Tuning-less Mode** delivers reliable stability with inertia ratios up to 30:1. Tuning gains adjust automatically and continually to provide consistent motion despite load changes
- **24-bit absolute encoder feedback** for 16x better resolution*

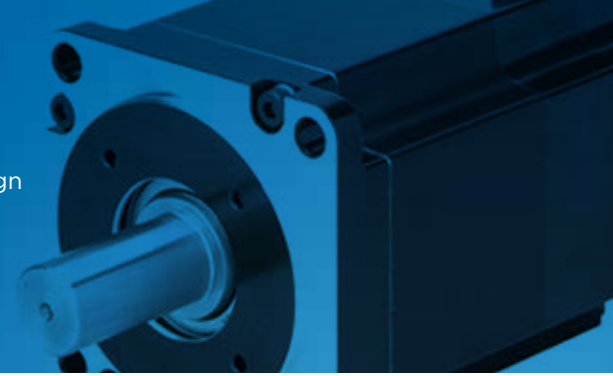
- **New Dual-axis SERVOPACKs** save space, reduce enclosure size
- **20% Reduction** in motor size and motor heating*, for better efficiency and easier implementation
- **Companion gearmotors** in five different sizes and six gear ratios, all factory tested for guaranteed performance.
- **Complete Sigma-5 compatibility**. Interchangeable mounting dimensions, parameters convert to Sigma-7 with SigmaWin+ software (included at no charge)
- **Network compatibility** with built-in MECHATROLINK-III, EtherCAT and analog interfaces
- **Built-in safety** features with IEC 61508, SIL 3 Safe Torque Off in Sigma-7 SERVOPACKs
- **New thermal sensors** on servo motors and SERVOPACKs directly monitor machine temperatures
- **Better ratings** in higher temperature environments (60°C ambient), at higher altitudes (>2,000 meters) or in harsh motor environments (IP67 rated)
- **Regenerative Power Sharing** with Dual-axis SERVOPACKs or DC-Bus connections with single-axis SERVOPACKs
- **Service Life Monitoring** offers preventive maintenance data on key SERVOPACK components



*In comparison to Sigma-5

STANDARD ROTARY

The world's largest manufacturer of servo motors brings 25 years of design innovation into each Sigma-7 rotary servo. Choose from a wide range of sizes, speeds and torque ratings, then add an amplifier and an MPic controller to create a complete motion automation system.



100/200V

LOW INERTIA ▼



SGMMV 3W-30W

MEDIUM INERTIA ▼



SGM7P 100W-1.5kW

400V

LOW INERTIA ▼



SGM7A 200W-1kW

MEDIUM INERTIA ▼



SGM7J 200W-1.5kW



SGM7A 50W-7kW



SGM7J 50W-750W



SGMSV 1kW-7kW



SGMGV 300W-15kW



SGM7G 300W-15kW



SGMVV 22kW-55kW

GEAR MOTORS

Available custom-fit for any rotary servo motor

SERVOPACKS

1 AXIS ▼



SGD7S 50W-15kW

2 AXES ▼



SGD7W 200W-1kW/axis

SERVOPACKS

1 AXIS ▼



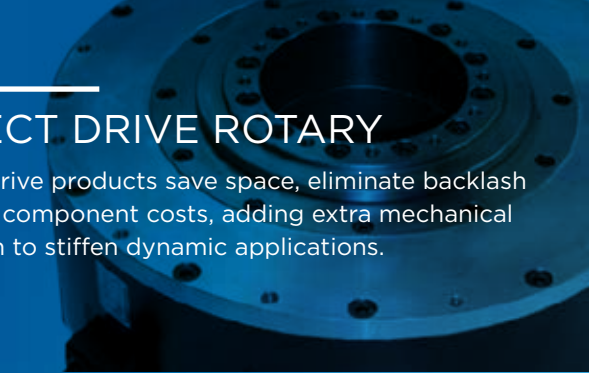
SGDV 500W-55kW

Control Interface Options: EtherCAT, MECHATROLINK, Analog
100V SERVOPACKs available from 50-400W

Control Interface Options: EtherCAT, MECHATROLINK, Analog

DIRECT DRIVE ROTARY

Direct drive products save space, eliminate backlash and cut component costs, adding extra mechanical strength to stiffen dynamic applications.



200V



SGM7F
(Iron Core)
4.0-25Nm
rated torque,
600rpm
max speed



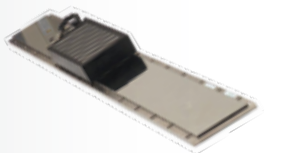
SGMCS
(Coreless)
2.0-200Nm
rated torque,
500rpm
max speed

200V

400V OPTIONS ALSO AVAILABLE



SGLG
(Coreless)
40-3,000 N
peak force,
5m/s
max speed



SGLF
(Iron Core)
86-2,400 N
peak force,
5m/s
max speed



SGLT
(DoubleTrac)
380-7,500 N
peak force,
5m/s
max speed



Sigma Trac
Assembly
220-1200 N
peak force,
5m/s
max speed

SERVOPACKS

1 AXIS ▼



SGD7S 50W-15kW

2 AXES ▼



SGD7W 200W-1kW/axis

Control Interface Options: EtherCAT, MECHATROLINK, Analog

TO LEARN MORE ABOUT YASKAWA'S LEGENDARY
RELIABILITY, UNBEATABLE PERFORMANCE AND
EXCEPTIONAL VALUE, CONTACT YOUR YASKAWA
SALES REPRESENTATIVE OR VISIT YASKAWA.COM.



Yaskawa is the leading global manufacturer of inverter drives, servo drives, machine controllers, medium voltage inverters and industrial robots. Our standard products, as well as tailor-made solutions, are well known and have a high reputation for outstanding quality and reliability.

YASKAWA