

**YASKAWA**

# SIGMA-7 SERVO SYSTEMS

THE NEXT REVOLUTION  
IN MOTION AUTOMATION

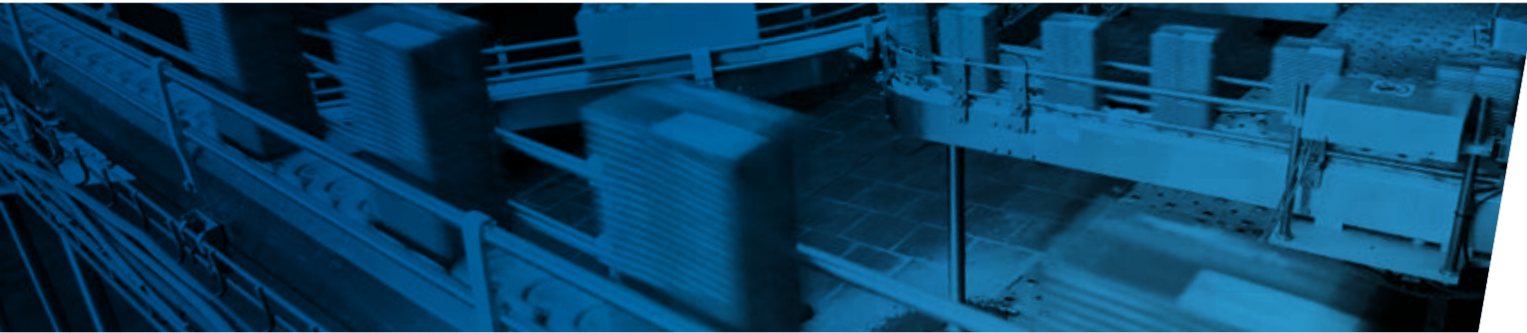


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**NEW SERVO TECHNOLOGY**  
LIFTS SPEED,  
PRECISION AND  
PRODUCTIVITY TO  
THE NEXT LEVEL



# 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 in existing designs
- **Complete Sigma-5 compatibility.** Servo motors and SERVOPACKs have 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*



## 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.

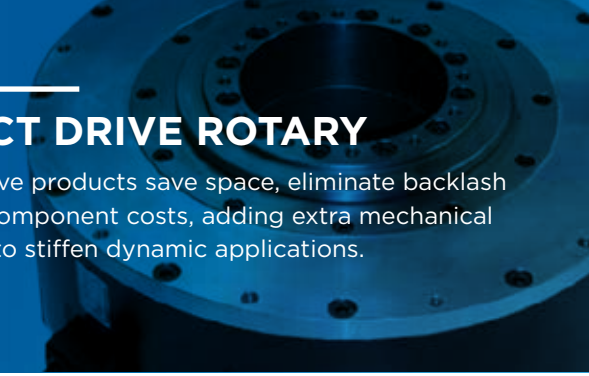
## STANDARD ROTARY

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 MPiec controller to create a complete motion automation system.



## DIRECT DRIVE ROTARY

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



## DIRECT DRIVE LINEAR

Maximum speed and acceleration for linear motion. Choose from four designs to reduce compliance, replace mechanical linkages and create a better fit for your application.



### 100/200V

#### LOW INERTIA ▼

#### MEDIUM INERTIA ▼



**SGMMV** 3W-30W



**SGM7P** 100W-1.5kW



**SGM7A** 50W-7kW



**SGM7J** 50W-750W



**SGM7G** 300W-15kW

### 400V

#### LOW INERTIA ▼

#### MEDIUM INERTIA ▼



**SGM7A** 200W-1kW



**SGM7J** 200W-1.5kW



**SGMSV** 1kW-7kW



**SGMGV** 300W-15kW



**SGMVV** 22kW-55kW

### 200V

#### SGM7F

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

#### SGMCS

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

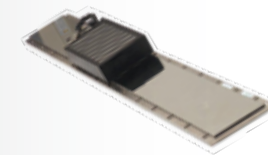
### 200V

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 ▼

#### 2 AXES ▼



**SGD7S** 50W-15kW



**SGD7W** 200W-1kW/axis

### SERVOPACKS

#### 1 AXIS ▼



**SGDV** 500W-55kW

### SERVOPACKS

#### 1 AXIS ▼



**SGD7S** 50W-15kW

#### 2 AXES ▼



**SGD7W** 200W-1kW/axis

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

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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.

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