

YASKAWA

Sigma-SD Spindle Motor Drives

Power and Precision for More Productivity



Sigma-SD

A Significant Difference When it Matters Most

ENERGY SAVING

Look beneath the sheet metal of the machine tool industry's most advanced equipment and you'll find Yaskawa Sigma SD spindle drives. SD is there because it offers an extra edge of performance that today's manufacturing leaders can't do without.

- Extra productivity from trustworthy motion performance at exceptionally high speeds, yielding more parts per minute
- Added precision for critical, high-volume operations like tapping, which calls for exactly regulated movement at extra high torque levels
- Superior quality for a smoothly finished, completely consistent machined part, plus the reliability to produce the same exceptionally fine finish across millions of parts for years to come



Power Regeneration Converter

Power Supply regeneration helps save energy and reduce cabinet size and heat

SERVOPACK for AC Spindle Motor Drive

Servo drive control technology has been applied to spindle drives to increase amplifier response characteristics. High precision speed control is achieved.



Ask your Yaskawa representative for information about the KC mark

Performance Features

High Speed Motor & Matching High Frequency Drive

A matched set motor-drive system that shortens cutting times, boosts throughput and maximizes productivity

High Bandwidth Drive

Advanced control technology increases amplifier response for higher precision speed control

Analog or EtherCAT Interface

Easy integration with the control networks common on existing machining systems

Optimized Spindle Motor

Improved winding design and cooling structure produce high efficiency, reduced weight and 200% maximum output power

Fully Regenerative Power Converter

Conserves power to cut energy bills, reduce cabinet size and heat

Gain Switching

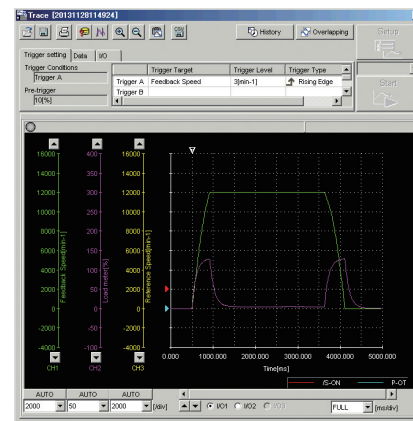
Creates easier transitions between gain levels, improving spindle orient function and enhancing rigid tapping performance

Low Inertia Design

Maintains precise speed control despite rapid changes in cutting torque

SigmaWin+ Interface

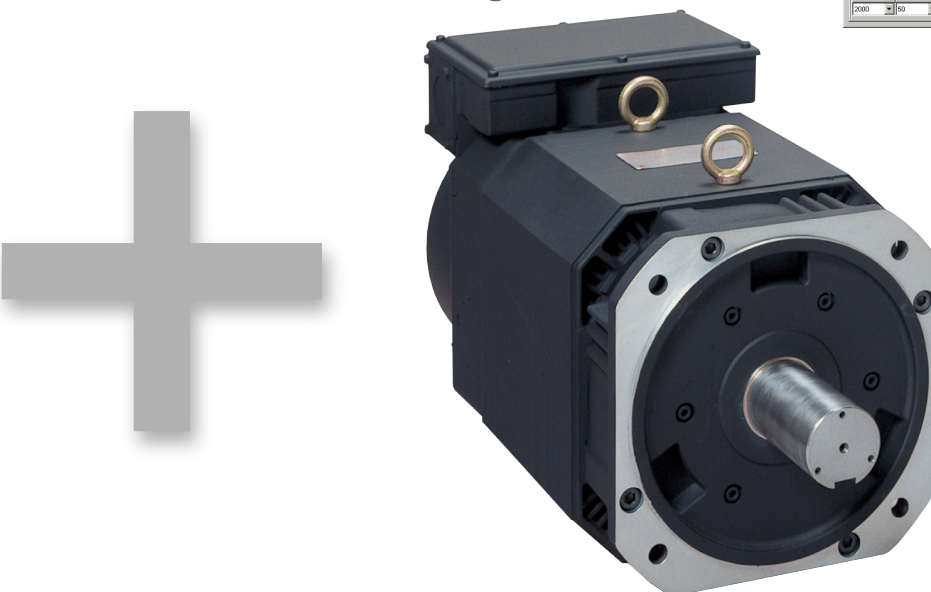
Yaskawa's proven engineering tool easily creates motor parameter settings and traces data, checks I/O signals and edits parameters.



Maximum Output Power:

200%

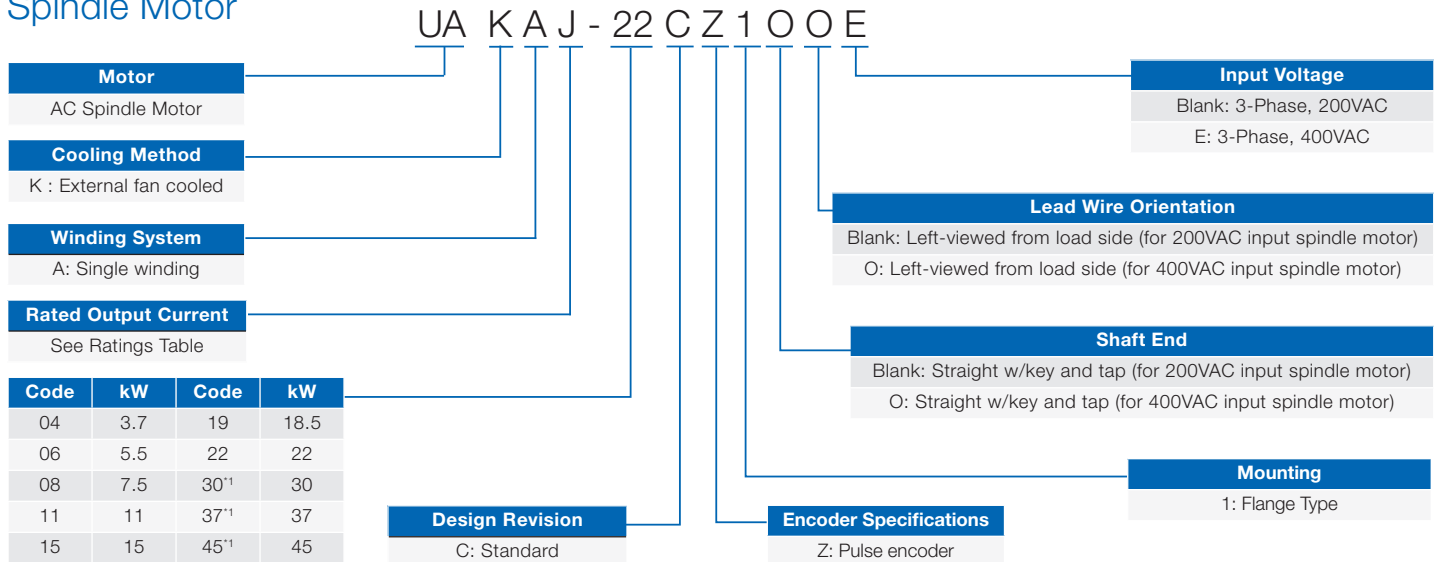
of continuous rating



POWERFUL

Model Designations

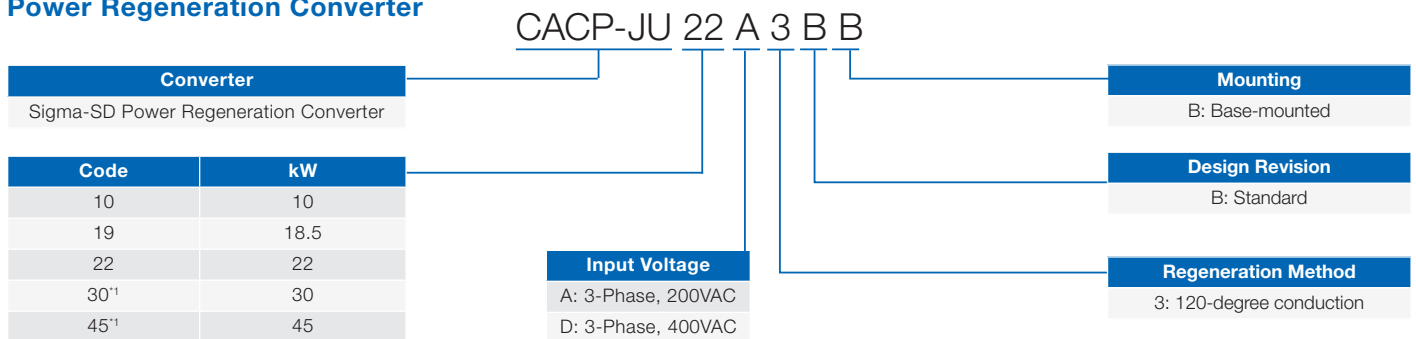
Spindle Motor



*1: Available only for three-phase 200 VAC models

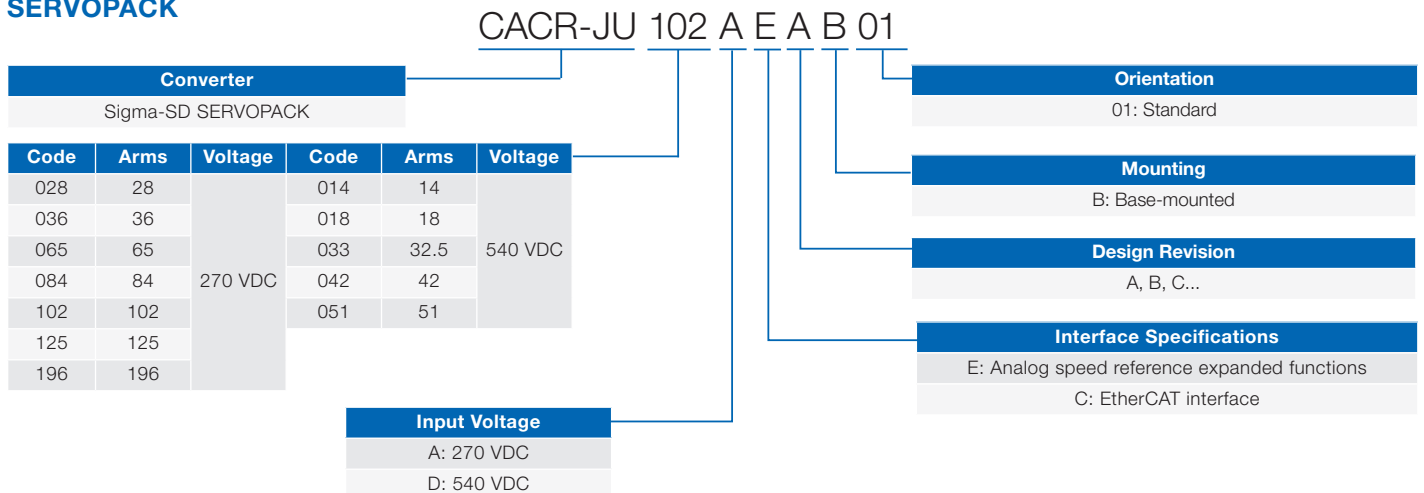
Sigma-SD Driver

Power Regeneration Converter



*1: Available only for three-phase 200 VAC models

SERVOPACK



Available Combinations

200 VAC Input

	200 VAC Input Spindle Motor	Power Regeneration Converter Model	SERVOPACK Model	AC Reactor	Stock Status
Single Winding	UAKAJ-04C□□□□	CACP-JU15A3□	CACR-JU028A□□□	X008017	Non-Stock
	UAKAJ-06C□□□□		CACR-JU036A□□□		Non-Stock
	UAKAJ-08C□□□□		CACR-JU065A□□□		Limited Stock
	UAKAJ-11C□□□□				Limited Stock
	UAKAJ-15C□□□□			Limited Stock	
	UAKAJ-19C□□□□	CACP-JU19A3□	CACR-JU084A□□□	X008018	Limited Stock
	UAKAJ-22C□□□□	CACP-JU22A3□	CACR-JU102A□□□	X008019	Limited Stock
	UAKAJ-30C□□□□	CACP-JU30A3□	CACR-JU125A□□□	X008020	Limited Stock
	UAKAJ-37C□□□□	CACP-JU45A3□	CACR-JU196A□□□	X008022	Non-Stock
	UAKAJ-45C□□□□				Non-Stock

400 VAC Input

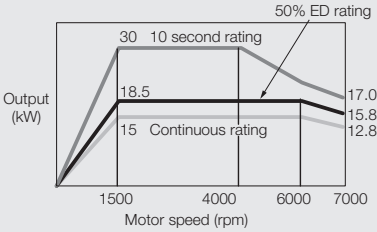
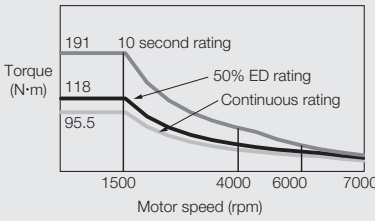
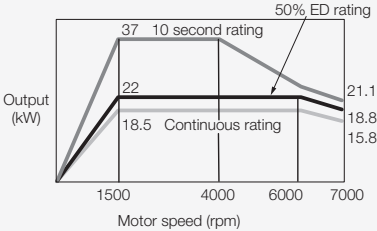
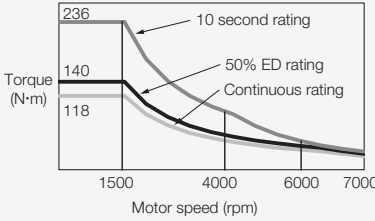
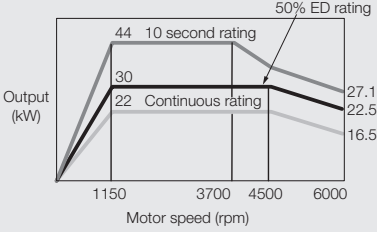
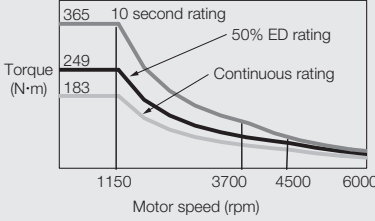
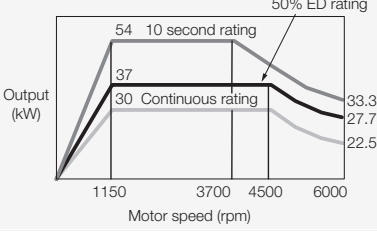
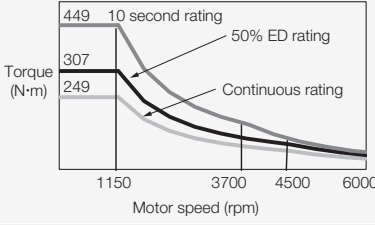
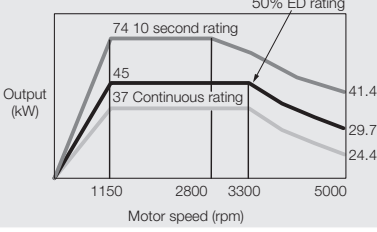
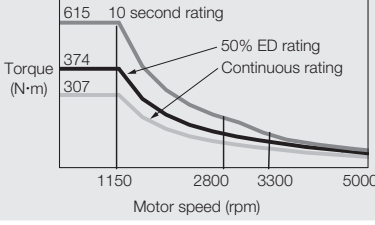
	400 VAC Input Spindle Motor	Power Regeneration Converter Model	SERVOPACK Model	AC Reactor	Stock Status
Single Winding	UAKAJ-04C□□□□	CACP-JU15D3□	CACR-JU014AD□□□	X008010	Non-Stock
	UAKAJ-06C□□□□		CACR-JU018D□□□		Non-Stock
	UAKAJ-08C□□□□		CACR-JU033D□□□		Limited Stock
	UAKAJ-11C□□□□				Limited Stock
	UAKAJ-15C□□□□			Limited Stock	
	UAKAJ-19C□□□□	CACP-JU19D3□	CACR-JU042D□□□	X008011	Limited Stock
	UAKAJ-22C□□□□	CACP-JU22D3□	CACR-JU051D□□□	X008012	Limited Stock

For details about custom-made spindle motors, converters, or SERVOPACKS, contact your Yaskawa representative.

Output and Torque Characteristics

Drive-Motor Combination Data

Model Number	Output Characteristics	Torque Characteristics
UAKAJ-04C□□□□	<p>Output (kW) vs Motor speed (rpm) for UAKAJ-04C. The graph shows three curves: 10 second rating (4.6 kW), 50% ED rating (3.7 kW), and Continuous rating (2.2 kW). The 10 second rating curve peaks at 4.6 kW at 1500 rpm and drops to 3.0 kW at 10000 rpm. The 50% ED rating curve peaks at 3.7 kW at 1500 rpm and drops to 1.8 kW at 10000 rpm. The continuous rating curve is constant at 2.2 kW up to 6400 rpm, then drops to 1.8 kW at 10000 rpm.</p>	<p>Torque (N·m) vs Motor speed (rpm) for UAKAJ-04C. The graph shows three curves: 10 second rating (29.3 N·m), 50% ED rating (23.6 N·m), and Continuous rating (14.0 N·m). The 10 second rating curve peaks at 29.3 N·m at 1500 rpm and drops to 3.0 N·m at 10000 rpm. The 50% ED rating curve peaks at 23.6 N·m at 1500 rpm and drops to 1.8 N·m at 10000 rpm. The continuous rating curve is constant at 14.0 N·m up to 6400 rpm, then drops to 1.8 N·m at 10000 rpm.</p>
UAKAJ-06C□□□□	<p>Output (kW) vs Motor speed (rpm) for UAKAJ-06C. The graph shows three curves: 10 second rating (7.4 kW), 50% ED rating (5.5 kW), and Continuous rating (3.7 kW). The 10 second rating curve peaks at 7.4 kW at 1500 rpm and drops to 3.3 kW at 10000 rpm. The 50% ED rating curve peaks at 5.5 kW at 1500 rpm and drops to 2.2 kW at 10000 rpm. The continuous rating curve peaks at 3.7 kW at 1500 rpm and drops to 2.2 kW at 10000 rpm.</p>	<p>Torque (N·m) vs Motor speed (rpm) for UAKAJ-06C. The graph shows three curves: 10 second rating (47.1 N·m), 50% ED rating (35.0 N·m), and Continuous rating (23.6 N·m). The 10 second rating curve peaks at 47.1 N·m at 1500 rpm and drops to 3.3 N·m at 10000 rpm. The 50% ED rating curve peaks at 35.0 N·m at 1500 rpm and drops to 2.2 N·m at 10000 rpm. The continuous rating curve peaks at 23.6 N·m at 1500 rpm and drops to 2.2 N·m at 10000 rpm.</p>
UAKAJ-08C□□□□	<p>Output (kW) vs Motor speed (rpm) for UAKAJ-08C. The graph shows three curves: 10 second rating (10 kW), 50% ED rating (7.5 kW), and Continuous rating (5.5 kW). The 10 second rating curve peaks at 10 kW at 1500 rpm and drops to 4.4 kW at 10000 rpm. The 50% ED rating curve peaks at 7.5 kW at 1500 rpm and drops to 4.4 kW at 10000 rpm. The continuous rating curve peaks at 5.5 kW at 1500 rpm and drops to 4.4 kW at 10000 rpm.</p>	<p>Torque (N·m) vs Motor speed (rpm) for UAKAJ-08C. The graph shows three curves: 10 second rating (63.7 N·m), 50% ED rating (47.8 N·m), and Continuous rating (35.0 N·m). The 10 second rating curve peaks at 63.7 N·m at 1500 rpm and drops to 4.4 N·m at 10000 rpm. The 50% ED rating curve peaks at 47.8 N·m at 1500 rpm and drops to 4.4 N·m at 10000 rpm. The continuous rating curve peaks at 35.0 N·m at 1500 rpm and drops to 4.4 N·m at 10000 rpm.</p>
UAKAJ-11C□□□□	<p>Output (kW) vs Motor speed (rpm) for UAKAJ-11C. The graph shows three curves: 10 second rating (15 kW), 50% ED rating (11 kW), and Continuous rating (7.5 kW). The 10 second rating curve peaks at 15 kW at 1500 rpm and drops to 4.5 kW at 10000 rpm. The 50% ED rating curve peaks at 11 kW at 1500 rpm and drops to 4.5 kW at 10000 rpm. The continuous rating curve peaks at 7.5 kW at 1500 rpm and drops to 4.5 kW at 10000 rpm.</p>	<p>Torque (N·m) vs Motor speed (rpm) for UAKAJ-11C. The graph shows three curves: 10 second rating (95.5 N·m), 50% ED rating (70.0 N·m), and Continuous rating (47.8 N·m). The 10 second rating curve peaks at 95.5 N·m at 1500 rpm and drops to 4.5 N·m at 10000 rpm. The 50% ED rating curve peaks at 70.0 N·m at 1500 rpm and drops to 4.5 N·m at 10000 rpm. The continuous rating curve peaks at 47.8 N·m at 1500 rpm and drops to 4.5 N·m at 10000 rpm.</p>
UAKAJ-15C□□□□	<p>Output (kW) vs Motor speed (rpm) for UAKAJ-15C. The graph shows three curves: 10 second rating (22 kW), 50% ED rating (15 kW), and Continuous rating (11 kW). The 10 second rating curve peaks at 22 kW at 1500 rpm and drops to 9.4 kW at 7000 rpm. The 50% ED rating curve peaks at 15 kW at 1500 rpm and drops to 9.4 kW at 7000 rpm. The continuous rating curve peaks at 11 kW at 1500 rpm and drops to 9.4 kW at 7000 rpm.</p>	<p>Torque (N·m) vs Motor speed (rpm) for UAKAJ-15C. The graph shows three curves: 10 second rating (140 N·m), 50% ED rating (95.5 N·m), and Continuous rating (70.0 N·m). The 10 second rating curve peaks at 140 N·m at 1500 rpm and drops to 9.4 N·m at 7000 rpm. The 50% ED rating curve peaks at 95.5 N·m at 1500 rpm and drops to 9.4 N·m at 7000 rpm. The continuous rating curve peaks at 70.0 N·m at 1500 rpm and drops to 9.4 N·m at 7000 rpm.</p>

Model Number	Output Characteristics	Torque Characteristics
UAKAJ-19C□□□□	 <p>Output (kW) vs Motor speed (rpm) for UAKAJ-19C. The graph shows three curves: 10 second rating (30 kW at 1500 rpm), 50% ED rating (18.5 kW at 1500 rpm), and Continuous rating (15 kW at 1500 rpm). At 7000 rpm, the values are 17.0 kW (10 second), 15.8 kW (50% ED), and 12.8 kW (Continuous).</p>	 <p>Torque (N·m) vs Motor speed (rpm) for UAKAJ-19C. The graph shows three curves: 10 second rating (191 N·m at 1500 rpm), 50% ED rating (118 N·m at 1500 rpm), and Continuous rating (95.5 N·m at 1500 rpm). At 7000 rpm, the values are 17.0 N·m (10 second), 15.8 N·m (50% ED), and 12.8 N·m (Continuous).</p>
UAKAJ-22C□□□□	 <p>Output (kW) vs Motor speed (rpm) for UAKAJ-22C. The graph shows three curves: 10 second rating (37 kW at 1500 rpm), 50% ED rating (22 kW at 1500 rpm), and Continuous rating (18.5 kW at 1500 rpm). At 7000 rpm, the values are 21.1 kW (10 second), 18.8 kW (50% ED), and 15.8 kW (Continuous).</p>	 <p>Torque (N·m) vs Motor speed (rpm) for UAKAJ-22C. The graph shows three curves: 10 second rating (236 N·m at 1500 rpm), 50% ED rating (140 N·m at 1500 rpm), and Continuous rating (118 N·m at 1500 rpm). At 7000 rpm, the values are 18.8 N·m (10 second), 15.8 N·m (50% ED), and 12.8 N·m (Continuous).</p>
UAKAJ-30C□□□□	 <p>Output (kW) vs Motor speed (rpm) for UAKAJ-30C. The graph shows three curves: 10 second rating (44 kW at 1150 rpm), 50% ED rating (30 kW at 1150 rpm), and Continuous rating (22 kW at 1150 rpm). At 6000 rpm, the values are 27.1 kW (10 second), 22.5 kW (50% ED), and 16.5 kW (Continuous).</p>	 <p>Torque (N·m) vs Motor speed (rpm) for UAKAJ-30C. The graph shows three curves: 10 second rating (365 N·m at 1150 rpm), 50% ED rating (249 N·m at 1150 rpm), and Continuous rating (183 N·m at 1150 rpm). At 6000 rpm, the values are 22.5 N·m (10 second), 16.5 N·m (50% ED), and 12.8 N·m (Continuous).</p>
UAKAJ-37C□□□□	 <p>Output (kW) vs Motor speed (rpm) for UAKAJ-37C. The graph shows three curves: 10 second rating (54 kW at 1150 rpm), 50% ED rating (37 kW at 1150 rpm), and Continuous rating (30 kW at 1150 rpm). At 6000 rpm, the values are 33.3 kW (10 second), 27.7 kW (50% ED), and 22.5 kW (Continuous).</p>	 <p>Torque (N·m) vs Motor speed (rpm) for UAKAJ-37C. The graph shows three curves: 10 second rating (449 N·m at 1150 rpm), 50% ED rating (307 N·m at 1150 rpm), and Continuous rating (249 N·m at 1150 rpm). At 6000 rpm, the values are 27.7 N·m (10 second), 22.5 N·m (50% ED), and 12.8 N·m (Continuous).</p>
UAKAJ-45C□□□□	 <p>Output (kW) vs Motor speed (rpm) for UAKAJ-45C. The graph shows three curves: 10 second rating (74 kW at 1150 rpm), 50% ED rating (45 kW at 1150 rpm), and Continuous rating (37 kW at 1150 rpm). At 5000 rpm, the values are 41.4 kW (10 second), 29.7 kW (50% ED), and 24.4 kW (Continuous).</p>	 <p>Torque (N·m) vs Motor speed (rpm) for UAKAJ-45C. The graph shows three curves: 10 second rating (615 N·m at 1150 rpm), 50% ED rating (374 N·m at 1150 rpm), and Continuous rating (307 N·m at 1150 rpm). At 5000 rpm, the values are 29.7 N·m (10 second), 24.4 N·m (50% ED), and 12.8 N·m (Continuous).</p>



Yaskawa is the leading global manufacturer of low and medium voltage variable frequency drives, servo systems, machine controllers 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.