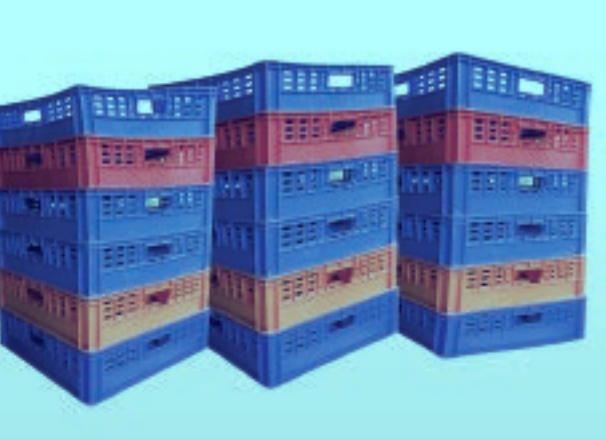
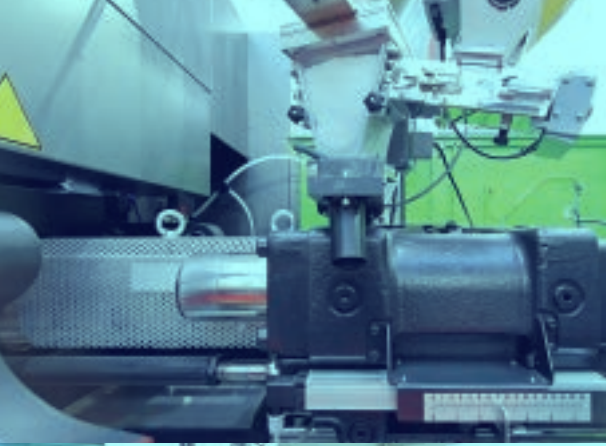


YASKAWA



YASKAWA AC DRIVES
Application Solution

Injection Molding Machine



YASKAWA AC Drive
GA700



YASKAWA Matrix Converter
U1000

YASKAWA provides the answers to your injection molding machine needs.

YASKAWA ELECTRIC always stands in the shoes of our customers and delivers the AC drive with the most uncompromising quality and performance ahead of others in the industry. Decades of certain application experiences allow us to provide AC drive features that is prompt and flexible solutions to your desire. Our loyal commitment to quality and ease of use make Yaskawa AC drive the best choice for all of your drive applications.



Application Benefit

- Realizing accurate and stable molding for various molded products
- Applicable in all environments
- Utilizing the regenerative energy during deceleration and suppressing the harmonics with an all-in-one standalone AC drive
- Shorter setup time and downtime with improved software tools
- Further quality improvement for molding by applying application specific tools

Product Lineup



YASKAWA AC Drive High Performance Type **GA700**

We have allowed for control of high efficiency motors, while keeping costs down to provide added value for all of your industrial applications.

[Applicable Motor Capacities]

200 V Class 0.4 to 110 kW
400 V Class 0.4 to 630 kW



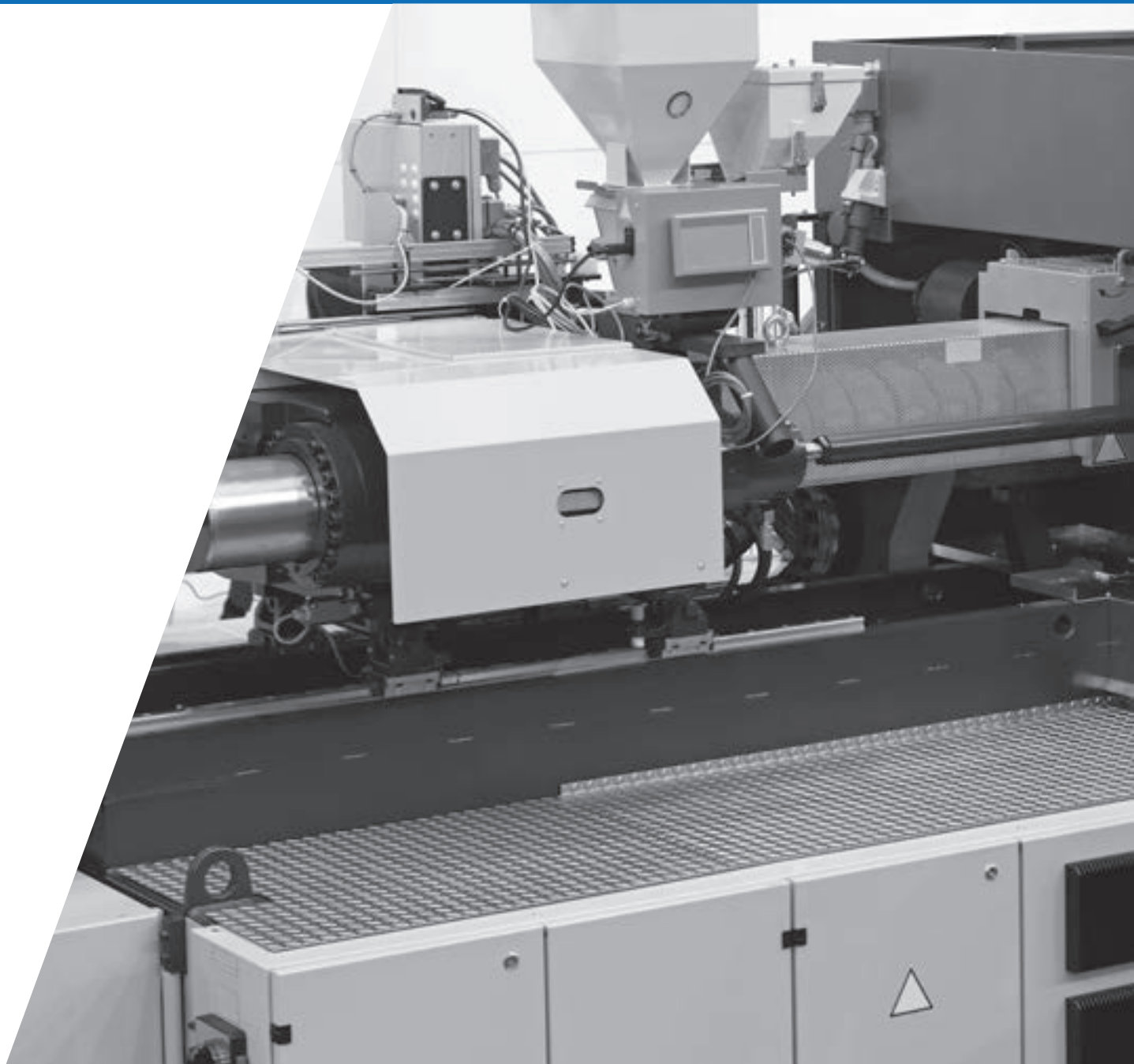
YASKAWA Matrix Converter **U1000**

The U1000 is a compact and total all-in-one solution with ultra-low harmonics and full regenerations. The ultimate choice for power quality and energy savings.

[Applicable Motor Capacities]

200 V Class 5.5 to 55 kW
400 V Class 2.2 to 500 kW

Note: The kW capacity range serves as a guide.



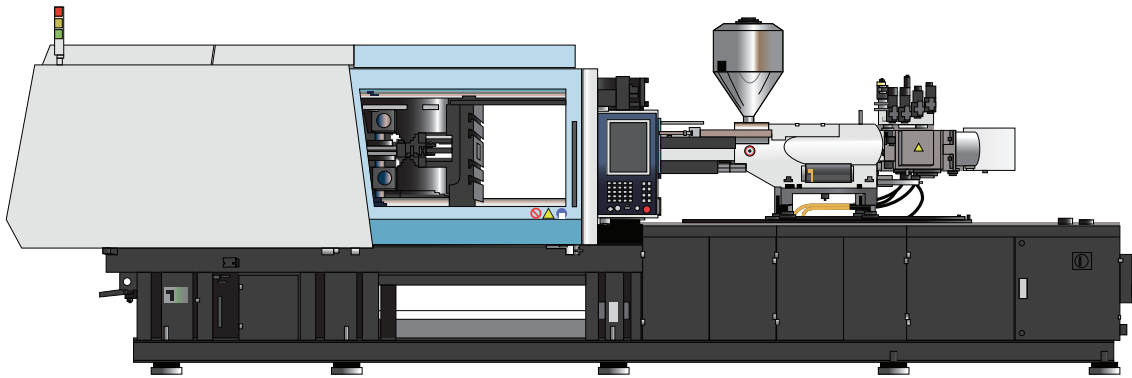
Recommended AC drives

■ Fully Hydraulic

GA700

U1000

Fully Hydraulic Injection Molding Machines



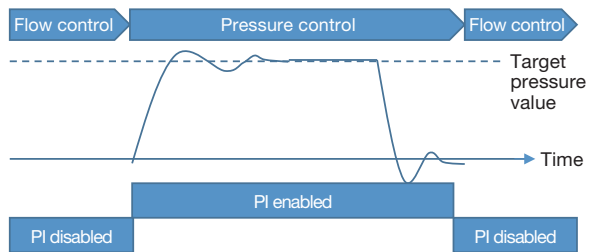
Answer 1

Realizing accurate and stable molding for various molded products

Recommended Product
GA700
U1000

With the improved response capability, high-speed pressure PID control and more accurate torque limiting function than ever before, a fast, accurate and stable molding process is achievable. The motor accelerates quickly and smoothly at start while maintaining a stable pressure by the PID control. Also, it's possible to perform automatic PID control with the improved DriveWorksEZ software that includes flow rate/pressure control internally.

Hydraulic control concept diagram and pressure response chart



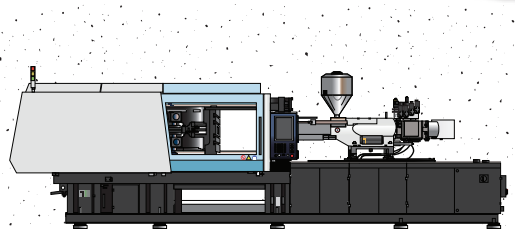
Answer 2

Applicable in all environments

Recommended Product
GA700
U1000

All the internal PCBs in GA700 have varnish coating as standard. In addition, GA700 and U1000 support resolvers with higher environment duration capability than encoders. This way we ensure high stability in harsh environments such as high humidity, dusty and vibration work places. Also, it leads to cost reduction for maintenance and brings more reliability to your system.

Peace of mind even in tough environments!

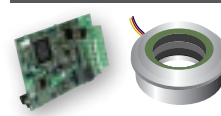


Varnish Coated Boards as Standard



Note: GA700 only

Resolver Support



GA700 resolver interface PG-RT3

Answer 3

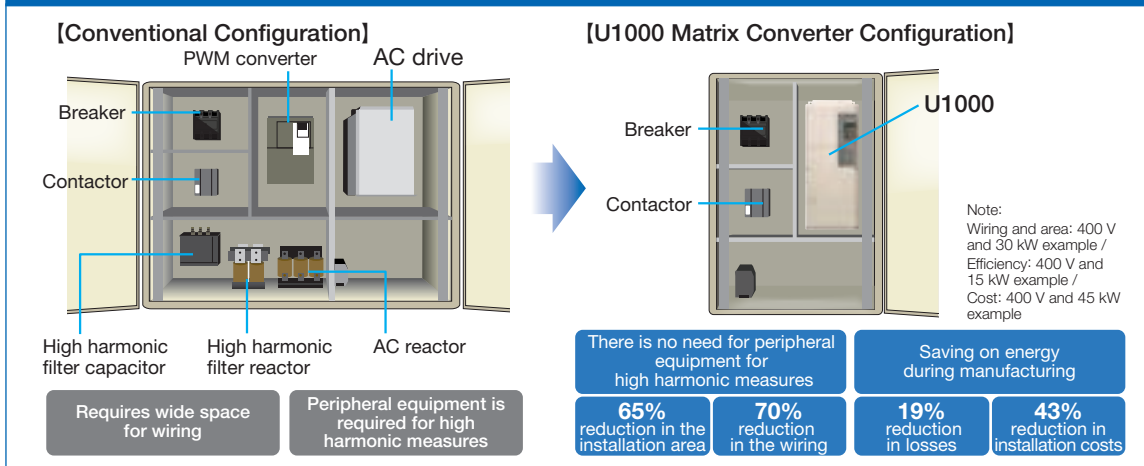
Utilizing the regenerative energy during deceleration and suppressing the harmonics with an all-in-one standalone AC drive

Recommended Product
U1000

In conventional system configuration, in order to handle the regenerative energy during injection and deceleration in mold open/close action, a PWM (active front end) converter, AC reactors and harmonics filters are necessary in addition to the AC drive itself. Adopting the standalone matrix converter U1000 will not only contribute to less installation space and wiring but also it will utilize the regenerative energy effectively for further energy saving.

Realization of an All-in-one High Harmonic Measure System

Control Panel Configuration Example

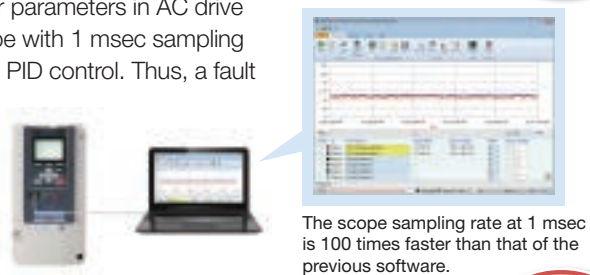


Answer 4

Shorter setup time and downtime with improved software tools

Recommended Product
U1000 GA700

With Yaskawa drive support software DriveWizard installed and connected to AC drive, it is possible to edit, copy and transfer parameters in AC drive from a computer. Also, the high-speed oscilloscope with 1 msec sampling time is available to adjust the high-speed pressure PID control. Thus, a fault analysis can be performed easily during tuning process and faulting conditions. As the result, it contributes to shorter machine tuning time and less downtime of production lines.

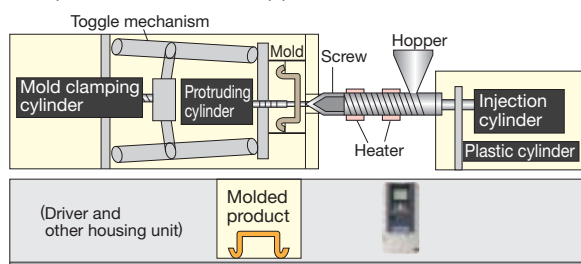
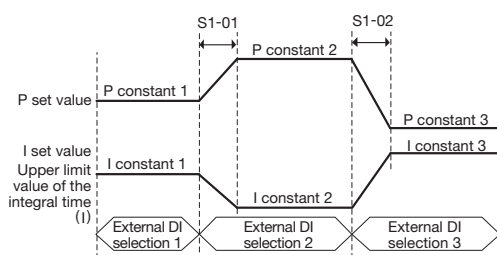


Answer 5

Further quality improvement for molding by applying application specific tools

Recommended Product
GA700

With Yaskawa programming tool DriveWorksEZ, an optimal PID parameter set can be assigned to each application to improve the product quality. Switching the PID control parameter set according to the operating axis helps to minimize the operation time and suppress vibration.



Injection Molding Machine

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YASKAWA

YASKAWA ELECTRIC CORPORATION

In the event that the end user of this product is to be the military and said product is to be employed in any weapons systems or the manufacture thereof, the export will fall under the relevant regulations as stipulated in the Foreign Exchange and Foreign Trade Regulations. Therefore, be sure to follow all procedures and submit all relevant documentation according to any and all rules, regulations and laws that may apply. Specifications are subject to change without notice for ongoing product modifications and improvements.

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