Subject: Blanking and Shearing Press	Product: A1000 and G7 Drives	Doc#: AO.AFD.55
Title: Blanking and Shearing Press		

Blanking and Shearing Press

Application Overview

Blanking machines cut, shear, or punch material is the process of fabricating a part. The material can be a flat sheet or a continuously fed strip of material. The main drive motor supplies power to a flywheel, which delivers the energy during the blanking/shearing stroke. AC drives are commonly used to provide power to the main drive motor.

Application Challenges:

- Quickly stop the motor without expensive braking resistors
- Quick acceleration even under high torque conditions
- Overvoltage protection during regeneration

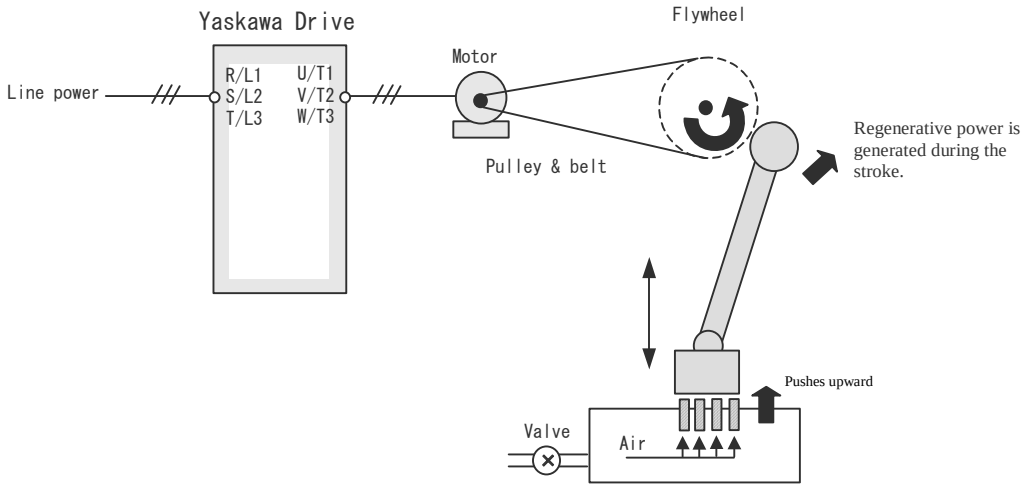
Yaskawa Products:

Product	Feature	Benefit
A1000 or G7 Drive	Adjustable Speed Control	Sets the appropriate speed for the material and sheet thickness.
	Energy Saving Control	Rotational speed can be lowered when required to conserve energy. Additional energy conservation can be achieved through use of the drives Energy Saving features.
	Reverse Prohibit	Reverse direction can be prohibited when required for roll feeding.
	• Stall Prevention During Decel • High Slip Braking • DC Injection Braking	The motor can be stopped without a braking resistor as quickly as possible by using Intelligent Stall Prevention During Decel, High Slip Braking or DC Braking.
	Kinetic Energy Braking	During power loss, the drive can decelerate to stop using KEB (kinetic energy braking).
	• Dwell Function • Stall Prevention • Feed Forward Function	For accelerating high inertia loads, the user can increase the Dwell Function setting and tune Stall Prevention. The Feed Forward function can also be used to assist in acceleration.
	• Fault Restart • Speed Estimation	The drive can automatically start after being shut off by using the Fault Restart function The AC drive can automatically restart a spinning motor with "speed estimation- speed search" following a momentary power loss or fault condition.
	Overvoltage Inhibit	The drive can prevent overvoltage caused by high inertia of the flywheel and the crankshaft.
	Overtorque or Undertorque Detection	It is possible to notify the user of an impending fault before it occurs based on the Overtorque or Undertorque Detection settings.

	Speed Search	The application can be restarted using the Speed Search Function while the motor is idling.
	Pulse Train Input	A pulse train input reference can be used to fine-tune the press stroke to the die.
	Jog Reference	Separate circuits producing the run signals for Forward Inching and Reverse Inching can be operated with a single switch.
	Zero Servo	The press can be held in place by using the Zero-Servo Function without the use of a mechanical brake (Available in Closed Loop Flux Vector Mode).

Application Details:

Yaskawa drives provide precise speed control for small positioning moves during start-up and product change over, to creep speed for part verification, to maximum speed for high speed production. This enables the user to save time and increase production by allowing faster setup and greater part production.



Drive adjustments provide a well-tuned motor and drive setup for flexibility, performance and extended machine, drive, and motor life. Acceleration and deceleration parameters enable the press to precisely control the operation to provide good electrical to mechanical power transfer. The Yaskawa drive allows for smooth accel and decel to reduce mechanical press wear.

Yaskawa drives posses built in application expertise to provide benefits only available with AC drive press control. Overtorque protection enables the drive to detect motor overloading due to excessive load and shut down the drive and bring the load to a controlled safe stop. The AC drive protects the system from electrical or mechanical

damage. Stall prevention adjusts the deceleration time in order to prevent overvoltage faults to provide additional motor protection. The Overvoltage Inhibit capability enables the drive to control the press during the regenerative (overhauling) portion of the press cycle and eliminate the need to install costly braking resistors.
Yaskawa AC drives provide an optimum power source enabling more throughput and energy savings, by reducing current draw during start-up.