

Subject: Metalforming Overview	Product: A1000 or G7 Drives	Doc#: AO.AFD.72
Title: Metalforming		

Metalforming

Application Overview

Metalforming is the process of shaping parts or structures out of metal, by bending, stamping, casting, or shearing.

Metaforming covers a wide range of work, from large ships, bridges and oil refineries, to delicate jewelry. It includes a wide range of skills and requires the use of many different types of tools.

Industrial metalforming machines are used in industries such as Aerospace, Automotive, Tool-making, Home Appliance and Agricultural Machinery. Industrial machines are typically installed as capital equipment.

Various types of metalforming machines:

Metal Forming

Forging Machines
Die Forming Machines
Bending Machines
Presses
Shearing Machines
Punch Presses

Application Challenges:

- Fast acceleration/deceleration
- Large speed range, high speed operation
- High speed and position accuracy
- Orientation or positioning
- Low maintenance, durability
- Complex I/O interface
- Continuous operation, repeated forward /reverse
- Constant high torque production
- Low vibration
- Fast stopping

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Yaskawa Products:

Product	Feature	Benefit
A1000 or G7 Drives	Current Limit	Drive motor can accelerate up in current limit thus providing the fastest acceleration rate possible.
	Built in Dynamic Braking Transistor for commonly used Drive sizes	Reduced costs when applying Dynamic Braking in order to achieve fast deceleration
	Overtorque Detection	The drive can warn the user of a damaging load related fault situation before it occurs by using Overtorque and/or Undertorque Detection. This is useful to detect any wear or damage along the cutting blades.
	BCD/Binary Digital Input (DI-08,16 options)	<ul style="list-style-type: none"> ● I/O Interface with numerical controls (NC) ● Multi-function Inputs and Outputs ● Speed Agree Output
	Energy Saving Mode (reduces the amount of excitation current that arises with lighter loads)	Suppress any vibration or instability that might occur at light load
	Zero-Servo and Orientation Function	Stop at a fixed location
	Maximum Frequency	Variable speed levels can be set by the user with a maximum of 400Hz

Application Details:

Refer to individual documents for application details on grinders, lathes, and machining centers.