Subject: Grinder Overview	Product: A1000 and G7 Drives	Doc#: AO.AFD.64
Title: Grinder		

Grinder

Application Overview

Grinders are used for cutting or shaping metal parts and providing the properly finished surface. AC drives are used to maintain constant grinder wheel speed during all phases of the process. In addition, Yaskawa AC drives can automatically detect changes to the amount of torque required during shaping and finishing phases. The drive's built-in Torque Detection enables the drive to quickly detect changes as the grinding wheel dulls or clogs.

Application Challenges:

- Maintain constant grinding surface speed
- Grind at optimal efficiency while doing heavy or light grinding
- Adjust drive torque to optimal performance as grinding stone dulls or clogs

Yaskawa Products:

Product	Feature	Benefit
A1000 or G7 Drives	Max Frequency	Constant grinding surface speed can be maintained regardless of changes to the stone's diameter during the grinding process. The user can set variable speed levels up to 400 hz.
	Adjustable Speed Control	Arbitrary grinding speeds can be set based on the amount of material to be cut and the grinding wheel type.
	Frequency Detection and Speed Agree	Both Frequency Detection and Speed Agree signals can interlock with primary and auxiliary machinery as well as safety equipment while the grindstone is rotating.
	Energy Saving Control	Energy Saving Control reduces motor noise and stabilizes the load, perfecting the finishing process. Energy Saving Control allows the motor to run at optimal efficiency and precision when performing light grinding.
	Overtorque or Undertorque Detection	Both Overtorque and Undertorque detection settings enable the drive to quickly detect changes as the grinding stone dulls or clogs. The drive can be set to respond to selectable load changes by using Variable Overtorque Detection via the drives Analog input.

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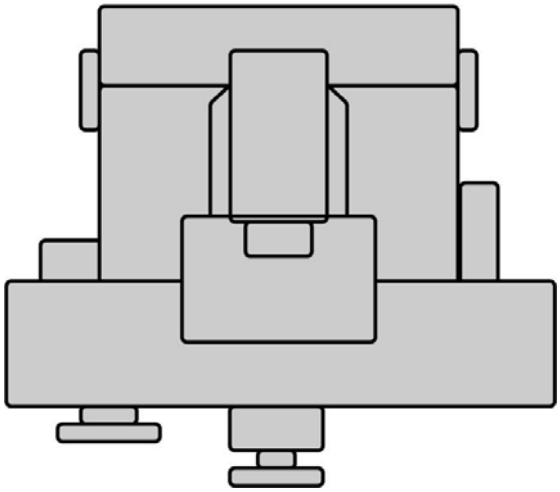
Application Details:

At slow speed, hogging (heavy cutting) is done. With a constant wheel pressure on the material to be shaped, the pounds/minute of material removed, or work done, varies with the wheel speed. This is the constant torque part of the profile. After the hogging is complete, a polishing (light cutting) operation is performed. A high speed, lighter wheel-to-material pressure is maintained; therefore, less material in pounds/minute is removed. This is the constant horsepower part of the load profile.



Yaskawa AC drives also have features that save energy, which allows the motor to run at optimal efficiency and precision when performing light grinding. Energy Saving Mode also reduces motor noise and stabilizes the load, perfecting the finishing process.

In addition to the energy saving features, Yaskawa AC drives can automatically detect changes to the amount of torque required during the shaping and finishing phases using Torque Detection. This feedback enables the drive to quickly detect changes as the grinding stone dulls or clogs. This can lead to significant cost savings by prolonging the life of grinding stones.