

TFD



TFD Thrufeed Centerless Gaging Systems

Conveyor-based automatic gages:

- reduce operator intervention
- increase grinder productivity

Effective automation of size control on a thru-feed centerless grinder requires precise part measurement, responsive trend analysis, and an effective compensation technique for the grinder. Each of CGI's TFD-Series Gage Stations, in combination with a D500 Gage Controller, provides these capabilities at the peak of current technology.

Each model in the series has a gage fixture suited to particular types of parts. The fixture is integrated into a dual-belt conveyor specifically designed for durability and for part stability in the gaging zone. The parts exit the grinder onto the conveyor and are carried through the gage. As they enter the fixture, the parts are firmly located by a "top guide" suited to the part type. The gage head "floats" mechanically to align the measuring contacts with the part centerline. The location mechanisms are adjustable over a range of sizes appropriate to the application.

All TFD systems employ Control Gaging's robust, quick-setup WG2 gage head. This gage incorporates 35 years of experience in designing laboratory-accurate measuring devices for the harsh environment of production grinding. The gage has CGI's exclusive slip-clutch mechanism, which both protects its internal parts from damage and cuts gage finger setup time to less than 60 seconds.

With dozens of these units performing in the field, the TFD is simply the best product on the market for automatic size control of shafts within its size range.



TFD Specifications:

Diameter range: 9 - 50mm / .35 - 2.0"

Each system has a range of +/-35% from a nominal value based on conveyor belt spacing.

Length range: 12 - 140mm / .5 - 5.5"

TFD-24 Specifications:

Diameter range: 6 - 38mm / .24 - 1.5"

Each system has a range of +/-35% from a nominal value based on conveyor belt spacing.

Length range: 110 - 605mm / 4.3 - 23.8"

D500 Gage Controller

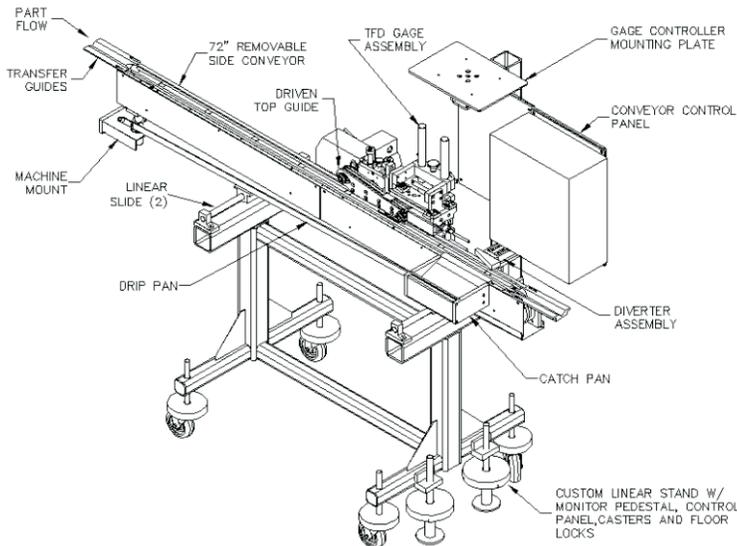


The D500 is an advanced, highly-configurable gage controller with the power for demanding applications. Field-proven software applies trend-analysis for effective machine compensation. The IPC option (Intelligent Process Control) outperforms all other techniques, and can control a centerless grinder to its best operating capability.

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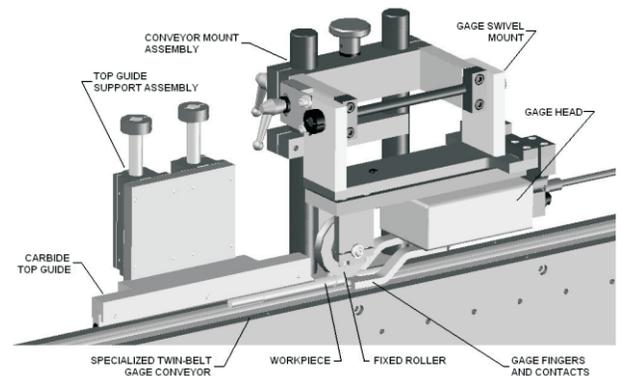


TFD-24 Shaft Gage

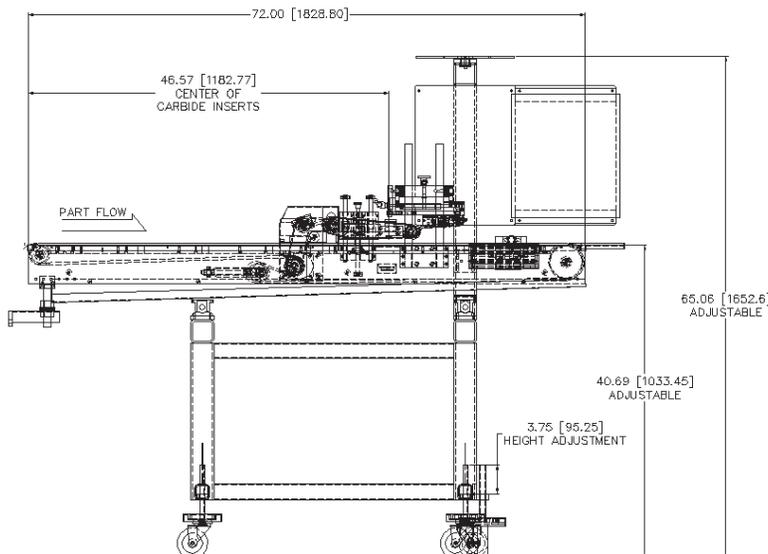
The **TFD-Series** offers several versions, depending on the style of top guide needed for the workpiece:

- **Model TFD** has a "driven top guide", a small secondary conveyor on top that presses down and locates small, hollow, or non-metallic parts during measurement (front page photo and drawings in this column).
- **Model TFD-24** uses a "rolling V" assembly for long parts such as strut rods -- it floats vertically and swivels laterally, aligning the gage head to the part as it passes below (figures in column at right).

Unusual part shapes such as the spherical diameter on a ball stud have also been successfully measured on TFD-style systems.



TFD-24 with auxiliary carbide top for a mix of long and short parts



Part types gaged by theTFD

- | | |
|-----------------------|----------------------|
| Ball studs | Shock absorber rods |
| Cylinders and liners | Spin tubes |
| Drill Rods | Steering racks |
| Electric motor shafts | Strut rods |
| Gas spring rods | Transmission shafts |
| Plungers (long) | Valve spools (large) |
| Power steering shafts | Wrist/piston pins |
| Rocker arm shafts | and many more |

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