



Fellows 4-3 CNC Steering Sector Gear Shaper is designed for efficient production of steering gear sectors with pitch radii up to 2" (51mm) and face widths up to 3" (76mm).

4-3 CNC Steering Sector Gear Shaper

Standard Features

- 10 HP, 1200 RPM, AC stroking motor, with a variable frequency drive
- 150-600 stroking range
- 4 RPM rotary speed
- 100 IPM infeed and cross feed rates
- Upright slide manually adjustable for cutting angle (0°-8°)
- One set of sine blocks for (1) specific cutting angle
- Machine mounted hydraulic/lubrication system
- Coolant pump in a removable coolant tank
- Removable chip basket
- Machine mounted electrical cabinet
- Machine mounted operators panel
- 9" monochrome CRT
- Fixture clamp controls
- Part location controls
- Menu programming
- Self diagnostics
- Programmable inch/metric
- Part program storage
- Cycle counter and timer
- Tool wear counter
- Manual pulse generator
- Thermal compensation
- Programmable:
 - Strokes per minute range
 - Rotary feed range
 - Linear feed range
 - Infeed range
 - Tool offsets
- Linear & infeed rapid traverse rates
- Center distance contouring

Description

The Fellows 4-3 CNC Steering Sector Gear Shaper will cut precision steering sector teeth up to 2" (51mm) pitch radius and 3" (76mm) face width with either constant or variable ratio. This highly rigid machine can produce gear sectors from solid or forgings with efficient cycle times. The machine base has two sets of hardened, replaceable steel rails—one set for the work slide and the other for the upright. The upright slide is manually adjustable to cut 0° to 8° tapered sectors. A preloaded roller bearing slide mounted on the upright carries the rack type cutter and holder. The rack type gear shaping cutter is rigidly supported and can be quickly removed for sharpening.

The cutter slide is directly driven through a crankshaft by a 10

HP stroking motor, controlled by a variable frequency drive.

The 4-3 CNC Steering Sector Gear Shaper is equipped with a General Electric Fanuc Series 15M CNC which is capable of controlling the four programmable axes: infeed; rotary feed; linear feed; and stroking rate.

Optional and Special Equipment

- Holders to fit the design of additional cutters
- Sine blocks for cutting angles in the 0° to 8° range
- Magnetic chip conveyor
- Work holding fixture with aligning mechanism
- G.E. Fanuc 15ME CNC for exported machines

4-3 CNC Shaper Specifications

Capacities

	Inch	Metric
Maximum Pitch Radius (External Only)	2"	51mm
Maximum Diametral Pitch	3	8.5 mod
Maximum Face Width	3"	76mm
Angle of Teeth to Shaft Axis (Customer to Advise)	0°-8°	0°-8°
Maximum Work Slide Travel	8 1/4"	210mm

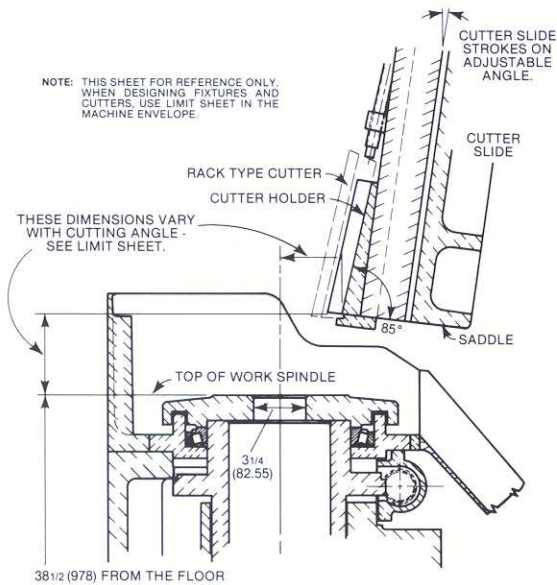
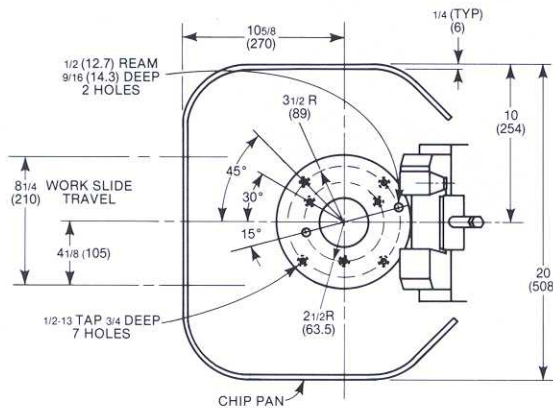
Dimensions

Maximum Overall Width (Approx)	88"	2.3m
Maximum Overall Height (Approx)	117"	3.0m
Maximum Overall Depth (Approx)	122"	3.1m

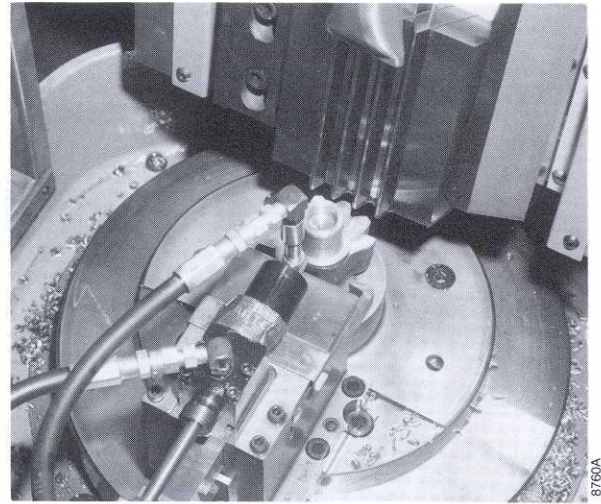
Weights

Net Weight with Motors and CNC (Approx)	15,000 lbs	6804 kg
Machine and Accessories Boxed, Export (Approx)	16,000 lbs	7257 kg

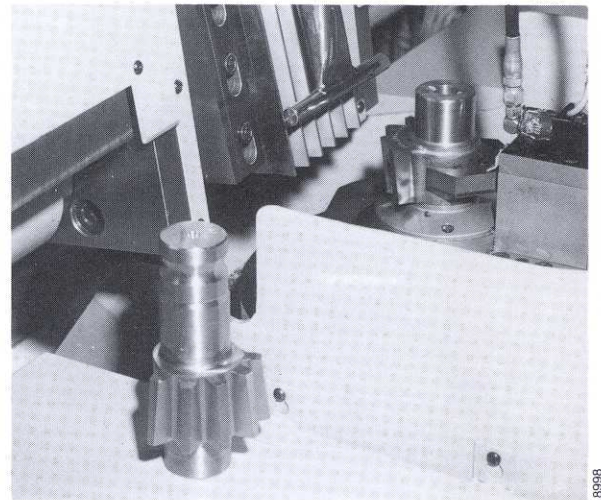
Working Limits



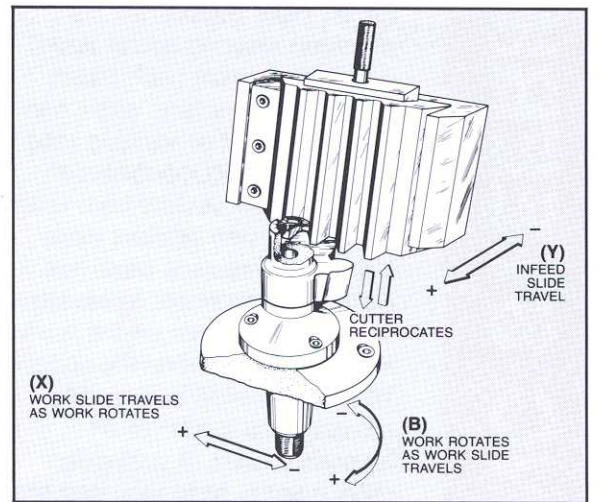
NOTE: FIGURES ARE IN INCHES
BRACKETS INDICATE MILLIMETERS.



Automotive steering sectors, with .915" (23.3mm) pitch radii, have been finished from rough forged teeth in a 1.21 minute floor to floor cycle time.



Heavy duty truck steering sectors with 1.75" (44.5mm) pitch radii have been produced from the solid in a 6 minute cycle time.



Operation of the Fellows Steering Sector Gear Shaper.

NOTE: The information included herein was correct at the time of publication. However, it is our policy to continually improve our product to insure ever better performance. Consequently, current Fellows' machines and products may incorporate modifications not shown or described in these pages. Machine illustrations in this publication may be shown with available guarding removed to clarify features.

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