

Gleason No. 130 specifications

capacity

	English	Metric
Maximum full depth375"	12 mm
Maximum diameter (for clearance)*	60"	1524 mm
Maximum diameter coupling*	50"	1270 mm
Index range	20 to 360 teeth	
Sliding base withdraw	10"	254 mm

work spindle

Diameter of hole through spindle.	20½"	521 mm
Distance from centerline of machine to nose of spindle	3¾" to 18"	86 mm to 457 mm

wheel spindle

9" to 13¼" (228 mm to 336 mm) point diameter wheels can be mounted on spindle†

feed

Feed, for once around the clutch, per tooth roughing and finishing, both rheostat controlled.

electrical equipment

Main drive motor (drives wheel feed cam)	½ H.P., 1800 RPM
Wheel drive motor (drives grinding wheel spindle)	15 H.P., 1800 RPM
Hydraulic motor (drives dresser arms, sliding base retractor slave piston and lubrication pump)	3 H.P., 1800 RPM
Index drive motor (drives geared index mechanism)	½ H.P., 1800 RPM
Work spindle motor (rotates work spindle)	¼ H.P., 1200 RPM
Coolant motor (drives coolant pump)	1½ H.P., 3600 RPM
Workhead motor (torque) (rotates work spindle from work position to load position)	120-130 in. lbs., 600 RPM
Automatic cycle motor (torque) (drives camshaft—cams control all cycling)	40 in.-lbs., 1200 RPM
Centrifugal filter motor	3 H.P., 1200 RPM
Scavenger tank motor	1½ H.P., 3600 RPM

miscellaneous

	English	Metric
Floor space (machine only)	138" x 94¾"	3505 mm x 2405 mm
Floor space overall (including centrifugal coolant tank unit)	172" x 150"	4368 mm x 3810 mm
Height	101¼"	2571 mm
Net weight (approx.)	30,000 lbs.	13,608 Kg.
Shipping weight (boxed for export)	31,500 lbs.	14,289 Kg.

*For larger diameter, submit prints to Gleason Works.

†Larger and smaller diameter wheels can be used when machine is properly equipped.

standard equipment

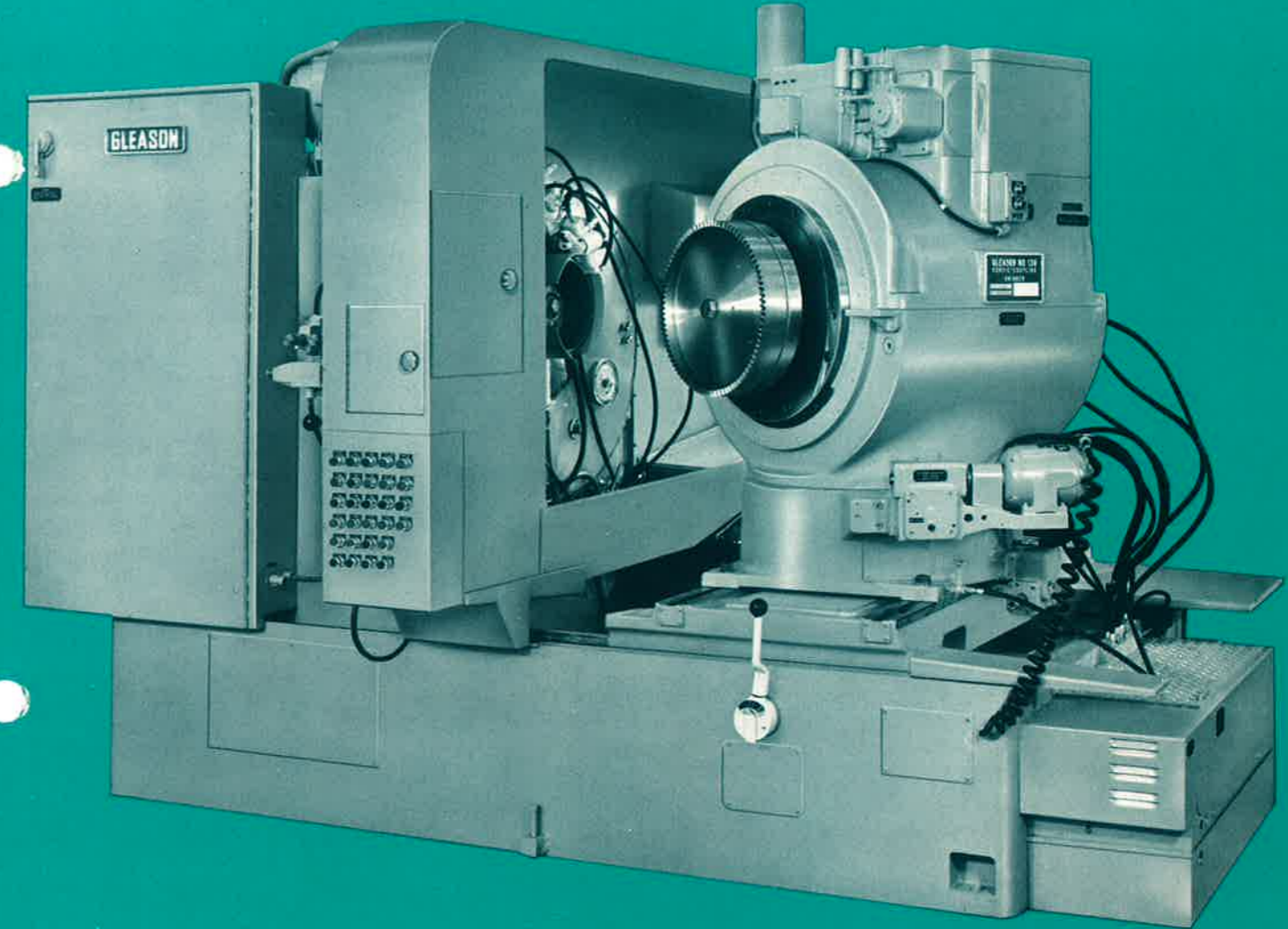
- Radius dresser and side dresser for 6" to 14" diameter wheels.
- Feed and index gears, wheel feed cam and grinding wheel pulleys for one coupling face
- Diamond dresser, including end dresser cam (less diamonds)
- Centrifugal filter
- Work spindle bore 20½" diameter
- Complete electrical equipment including installation for 3 phase, 50 or 60 cycle, alternating current, including 15 H.P. motor and controls.
- One Variable Stop Drum made to Summary

extra equipment

- Dresser diamond setting fixture
- Wheel end fixture (for up to 14" diameter wheels)
- Wheel end fixture (for 15" to 21" diameter wheels)
- Dresser arm test fixture
- Diamond nib removing and setting fixture
- Exhaust type mist collector
- Additional index change gears to make a complete set with cabinet
- Additional wheel and motor pulleys to make a complete set
- Electronic tooth checking unit with drive bracket
- Wheel adapters
- Segmental wheel guards
- Additional wheel feed cams
- Duplicate set of dresser arms (3)—one inside, one outside, one end
- Additional variable stop drums
- Hydraulic chucking attachment and reducing sleeve from 20½" work spindle size to 3²⁹/₃₂" x 3³⁹/₆₄" taper
- Arrange machine for 15" to 21" diameter wheels in addition to standard, including special side and radius dressers, special guards and parts, but not including wheel adapters, wheel guards, cams or other tooling.
- Refrigeration unit for both hydraulic and coolant systems
- Arrange machine to increase maximum distance from spindle nose to center line from 18" to 21"
- Work spindle hydraulic assist unit (required for parts weighing more than 3000 lbs.)

Gleason No. 130

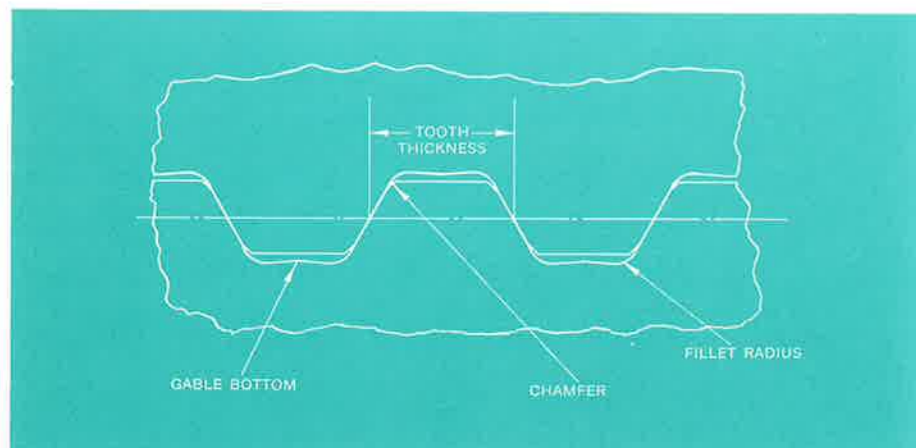
Curvic® Coupling Grinder



Gleason No. 130 Curvic® Coupling Grinder

The Gleason No. 130 Curvic® Coupling Grinder is an automatic high speed machine for grinding Curvic teeth in face couplings. The machine will accommodate blanks up to 60" in diameter and will grind teeth up to .375" deep.

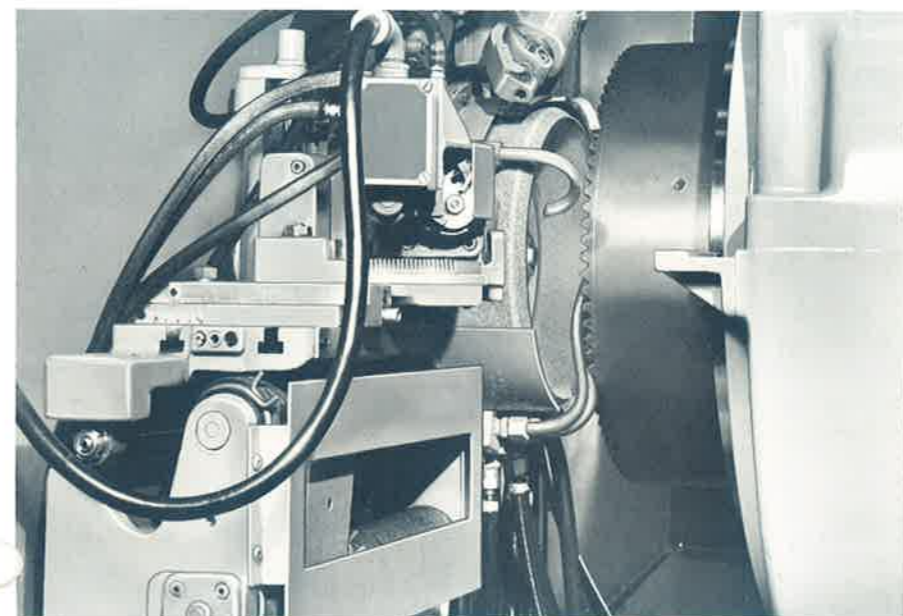
curvic couplings



Curvic couplings are precision face splines for joining members, such as sections of a shaft, to form a single operating unit. Their unique mating convex and concave teeth are ground into the faces of the parts to be connected. The resulting accuracy and uniformity are such that parts can be interchanged, replaced, assembled and disassembled without destroying alignment, balance or concentricity.

advantages

increased production



A new combination rough and finish grinding cycle, together with completely automatic control and rigid construction produce an extremely fast and efficient grinding operation. Provision is

also made for power rotation of the workhead between the work loading and grinding positions. Thus the total production time is further reduced.

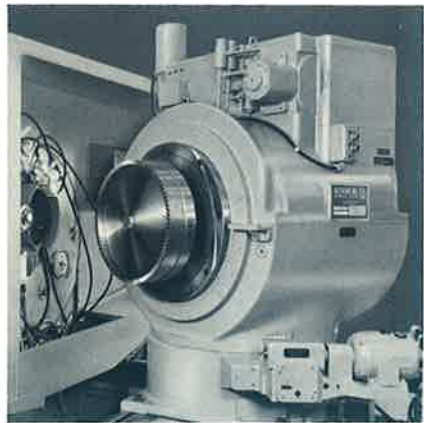
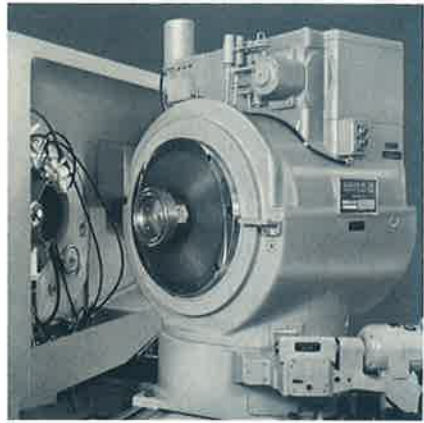
high quality

The No. 130 Curvic Coupling Grinder produces the highest accuracy of tooth spacing and concentricity as well as complete repetition of bearing pattern and size. The automatic features of this machine assure a uniform interchangeable product regardless of production quantity. A unique rough grinding cycle reduces the danger of overheating the workpiece.

ease of setup and operation

Adjustments and controls are readily accessible for machine setup and operation. The machine may be run manually during setup. Once setup and development has been completed the only operations required are changing the work and starting the machine. For many jobs an automatic chuck can be furnished to obtain uniform, torque-free chucking to further facilitate the work-changing operation. This arrangement is used in conjunction with a $3^{29}/32''$ x $39/64''$ taper reducing sleeve.

large bore work spindle



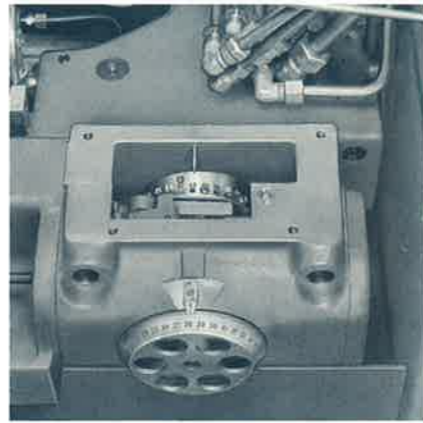
The No. 130 work spindle has a 20½" diameter hole through it, to accommodate blanks of extreme length and large hub diameter. The index range of the machine enables couplings of 20 to 360 teeth to be ground except for prime numbers over 100.

automatic work advance



Variable Stop Drum

The variable stop drum controls the automatic advance of the work to the grinding wheel. A series of steps of decreasing height governs the automatic in-

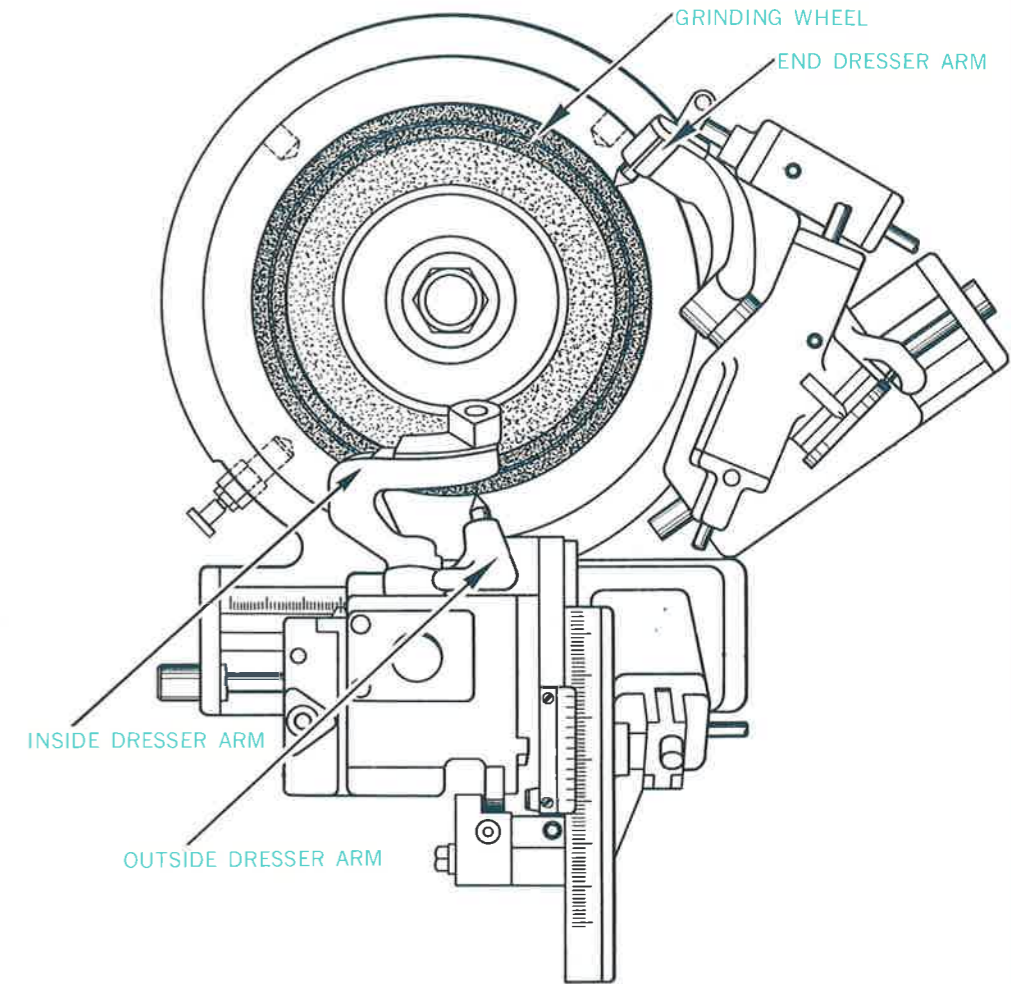


Variable Stop Drum Mounted in Control Unit

feed of the work between grinding passes. At the conclusion of the last pass, the variable stop drum acts to stop the machine cycle.

automatic wheel dressing

The dressing of the grinding wheel is of vital importance in obtaining an accurately ground Curvic coupling. The two sides and the end of the grinding wheel are dressed by three diamonds which are hydraulically operated and automatically controlled. The diamond dressers are adjustable for feed, radius, wheel shape, diameter, and point width. The wheel is dressed before the beginning of the grinding cycle of each coupling and one or more times during the cycle, depending on the number of passes and the amount of stock to be removed on each pass. Dressing positions are established during development and thereafter are repeated automatically during every action of a variable stop drum. At each of the selected dressing positions, buttons on the periphery of the variable stop drum trip a limit switch, which initiates a completely automatic dressing cycle.



independent control of roughing and finishing

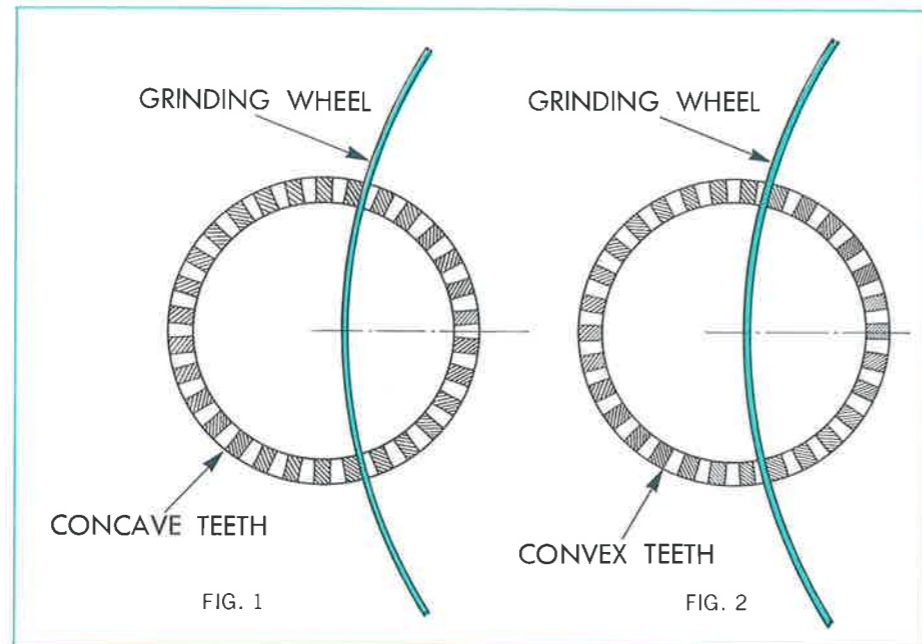


A variable speed main drive DC motor affords a complete range of roughing and finishing speeds, each being controlled independently, to meet the demands of various blank materials and designs.

suction-type exhaust system

A suction-type exhaust system draws the grinding mist into the coolant tank to assure a safe clean method of grinding. The used coolant is then pumped into a centrifugal filter where it is cleaned for reuse. The filter requires a minimum of maintenance.

tooth bearing control



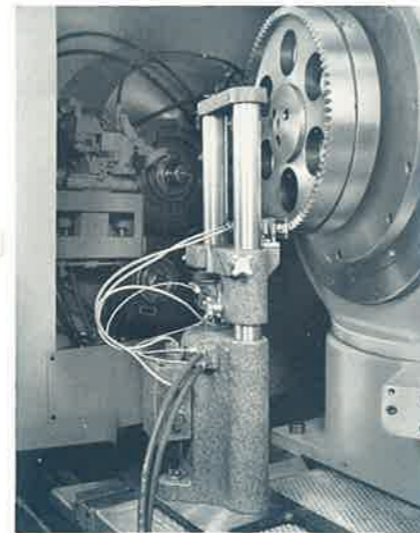
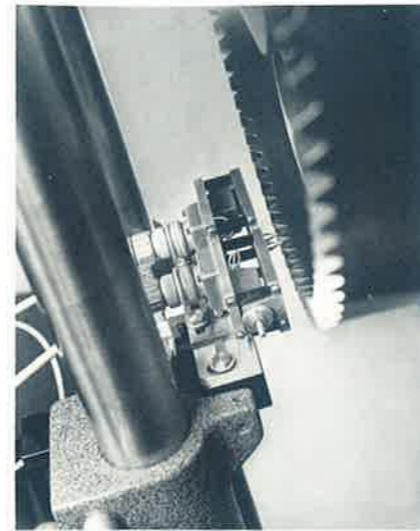
One Curvic Coupling member is ground with the outside surface of one wheel (Fig. 1) to produce concave teeth. The inside surface of the other wheel grinds the other member (Fig. 2) to produce mating convex teeth.

Localized tooth bearing on the coupling teeth is obtained by mismatching grinding wheel diameters to obtain slightly different lengthwise curvature on the teeth of each coupling member. The curvature can be varied to suit the mounting conditions of the

particular job. This feature avoids load concentrations at the ends of the teeth.

Where special design requirements have to be met, Curvic coupling teeth may be ground with a full length contact.

automatic tooth inspection



An optional electronic tooth checking device provides a convenient and precise means for checking Curvic teeth for spacing variations while the work remains mounted on the machine.

operation



Roughing cam, showing relief portions to permit coolant to enter grinding areas as roughing progresses.

Two separate, completely automatic roughing cycles are used on each piece. During the initial rough grinding, a plunge in-feed, efficiently grinds the coupling teeth to a predetermined size and depth. Machine feed and speed of the grinding wheel is adjustable to allow removal of the greatest amount of stock possible without overheating the material.

Throughout rough grinding, burning is prevented by action of the roughing cam. The cam is designed with relief portions to permit frequent separation of the wheel and work to allow coolant to enter the grinding area as roughing progresses.

A predetermined number of teeth are rough ground until sufficient wheel wear or dulling occurs to warrant a wheel dress. The wheel is automatically dressed and the machine continues to grind and redress until the first roughing pass is completed. After the first pass is completed, the variable stop drum automatically advances the work to the grinding wheel until final depth is obtained. Automatic dressing and grinding continue until the roughing operation of the coupling teeth is completed.

After roughing the last tooth, the machine automatically is set to the finish grind cycle. Several passes are taken around the blank at a feed much faster than previously used in roughing. Between each pass automatic dressing or a small feed takes place which removes enough stock from the grinding wheel to produce a smooth surface finish.

When the Curvic coupling is finished, the machine stops automatically, the workhead is withdrawn and rotated to unloading position. The work is removed and the machine is ready to precision grind the next coupling.