Abrasive Machine Tool Co.
East Providence, R. I., U. S. A.

No. 3 Surface Grinding Machine
(Illustrating Motor Drive)

22 in. x 8 in. x 12 in.
Foreword

The Grinding Machines and accessories made by this company are intended to be of the highest possible excellence. The material and workmanship entering into our products are of the best grade obtainable. Accuracy, durability, safety and convenience are the outstanding features of "ABRASIVE" Grinders.

The unit system of construction has been followed throughout, thus permitting access to any part without disturbing other units.

Safety features have had unusual consideration, with the result that there is not a dangerous moving part exposed whereby the operator could possibly be injured. Even the belting is enclosed to the top of each machine.

Every precaution has been taken to exclude emery dust and water from the operative parts.

All controlling levers and hand wheels have been located in positions which are most natural for the operator.

All high speed shafts rotate on highest grade ball bearings.

The UNIT-CAST Frame is quite a departure in a machine of this type. There are no screws, bolts, nor joints to become loose. It is just one solid mass of metal. This construction, combined with its unusual weight, offers the greatest resistance to distortion in use or transportation, thus maintaining its original accuracy, and becoming a practically vibrationless grinder.

Magnetic Chucks

Magnetic Chucks are essential to the practical and economical operation of Surface Grinders. We can supply any type or size within capacity of machine. When ordering, specify voltage of direct current.

The Demagnetizer

For removing any residual magnetism left in work after being ground on Magnetic Chucks.

Operates direct from lighting circuit. When ordering, specify current, and voltage. If alternating, the cycles.
Specifications

CAPACITY:— Longitudinal Table Travel, automatic 22” (560 m/m)  
Transverse Table Travel, automatic 8” (200 m/m)  
Vertical Hand Adjustment of Wheel Head, 12” (300 m/m)  
Table Dimensions:— Work surface 7 ½” x 22” (190 x 560 m/m)  
Over-all 10 ½” x 56” (270 x 1420 m/m)  
Three 9/16” T-Slots (14.28 m/m)  
Grinding Wheels:— Up to 8” Diameter x ¾” Thick (200 x 19 m/m)  
(Upon special order 10” or 12” Wheel Equipment can be supplied.)

WHEEL HEAD:— The Head is very massive and supported on ball thrust bearing. It is carried in square ways provided with adjustable taper gib for taking up wear. It is actuated by means of screw operated through worm and gear. Hand wheel for fine adjustment, on left side of Wheel Head, is provided with dial graduated to .00025” or 1-100 m/m. Hand Wheel for rapid adjustment, on right side, having 3 to 1 acceleration.

The Wheel Spindle is hardened tool steel running in liberally proportioned phosphor bronze boxes adjustable for wear. End of spindle is tapered to receive wheel sleeves.

GEAR CASE:— The table feed and reversing gear mechanism are carried in a separate case and operate in a bath of oil maintained at a constant level, thus being self-lubricating. Spur gears only are employed.

LONGITUDINAL TRAVEL OF TABLE:— Automatic in either direction, provided with adjustable dogs for reversing at any desired point. Plunger in reversing lever can be withdrawn when it is desirable to move table by hand beyond the reversing points, without changing position of dogs. A separate lever is provided for reversing table by hand. Surface speed of table very rapid. Reversing shock practically eliminated.

TRANSVERSE TRAVEL OF TABLE:— Automatic in either direction. Can be arranged to feed at each or alternate reversal of table, as desired. Adjustable dogs provided for disengaging automatic transverse feed at any desired point. Safety dogs also provided to prevent injury to feeding mechanism.

SADDLE:— Is supported on “V” ways. The saddle can be removed from machine simply by releasing one screw in cross feed nut bracket. Cross feed provided with micrometer adjustment and ball bearing thrust.

COUNTERSHAFT:— Equipped with steel hangers; ring oiling boxes; tight and loose pulleys, 6” diameter for 3” belt, (152 m/m-76 m/m) and should run 450 R. P. M. Loose pulley equipped with roller bearings. Driving pulley to machine, 14 ½” diameter for 2” belt (368 m/m-50 m/m).

MOTOR DRIVE:— Each machine is arranged so it can be driven by direct connected constant speed motor, when so desired, the motor being located inside the frame, where protected from dust or injury. The switch or controlling apparatus, together with the wiring, is fully enclosed. All necessary belting is furnished and everything in readiness for attaching feed wires. A 2 H. P. Motor is required, 1800 R.P.M.

WEIGHT:— Net Weight, countershaft-driven machine, about 1900 lbs. (860 Kg.)  
Domestic shipping weight, about 2200 lbs.  
Export shipping weight, about 2330 lbs. (1056 Kg.)  
Export dimensions, 42” x 50” x 74”. (1070 x 1270 x 1880 m/m.)  
Space occupied about, 90 cubic feet. (2.55 cubic meters.)

FLOOR SPACE:— Transversely, 47” (1190 m/m). Longitudinally, 78” (1982 m/m).

EQUIPMENT:— One Grinding Wheel, 8” diameter, ½” thick, 1½” hole (200 x 13 x 38 m/m); Diamond Holder; Countershaft and necessary Wrenches.
Wet Grinding Attachment

It is frequently necessary that work should be ground under water. The attachment illustrated is most efficient for this purpose.

This illustration also shows the 10” Wheel Equipment.

Dial Test Indicator

For gauging thickness of work while being ground. A very desirable accessory for the Surface Grinding Machine.

Eight-inch Index Centers

Swing, 8” dia.; Combined length 11”; Nose of spindle threaded 2½” dia.; 4½” pitch. No. 10 B. & S. taper hole. Index plate provides for nearly all divisions to 50, and a great many beyond. When worm is disengaged, direct indexing can be done by hand, the fixed dividing plate having 24 divisions. Net weight, 37 lbs.

Exhauster Attachment

Where dry grinding predominates, it is very desirable to dispose of the wheel dust, thereby protecting the health of employees. This attachment disposes of 90% of this injurious dust. Illustration also shows DC Generator for operating Magnetic Chuck. Machine and attachments all being driven direct from motor mounted inside of the frame where completely protected from dust or injury.