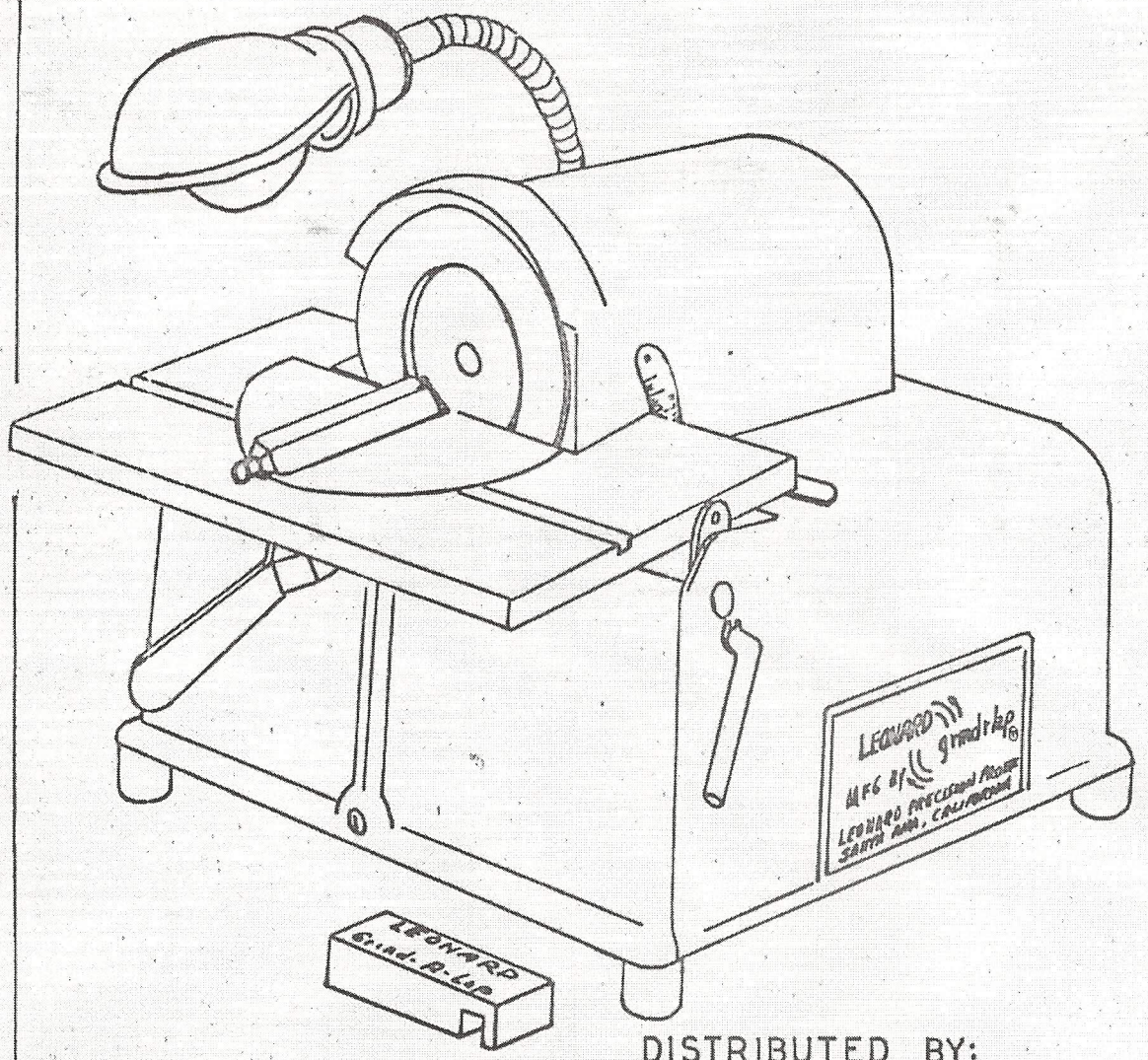
S/N 2199

Instruction Manual

MODEL M350



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INDUSTRIAL MACHINE DIVISION
LEONARD PRECISION PRODUCTS CO.
9200 BOLSA AVE., P.O. BOX 539
SANTA ANA, CALIFORNIA, 92702

LEONARD grindr-lap®

CARBIDE TOOL FINISHING MACHINE

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1. OSCILLATING MAGNETIC HEAD

Pendulum type oscillating rotation produces highly efficient grinding and lapping action from three directions. No movement of tool is necessary. Operator merely positions tool in light contact with the oscillating wheel to produce a fine edge in seconds. (Fig. 1)

2. PROTRACTOR TOOL HOLDER

Factory installed and calibrated. It is standard equipment on all Leonard Grind-R-Lap machines. Tools are positioned on wide base of protractor for greater ease of operation. (Fig. 1)

3. CONTROLS AND ADJUSTMENTS

a. Wheel rotation is controlled by three-way toggle switch. Position of toggle switch indicates direction of wheel rotation. (Fig. 1)

b. To oscillate wheel, pull lever forward, located on right side of machine at rear of tilt table. (Fig. 1)

c. To adjust distance between table and wheel, loosen locknut on inside of case and advance or retract screw as required. Tighten locknut after making adjustment.

4. NEW EASY TILTING TABLE

a. Provides one hand convenience with positive control. Protractor on right side of machine accurately registers degrees of setting automatically. (Fig. 1)

b. Table tension may be increased by adjusting nut located at end of control handle. (Fig. 1)

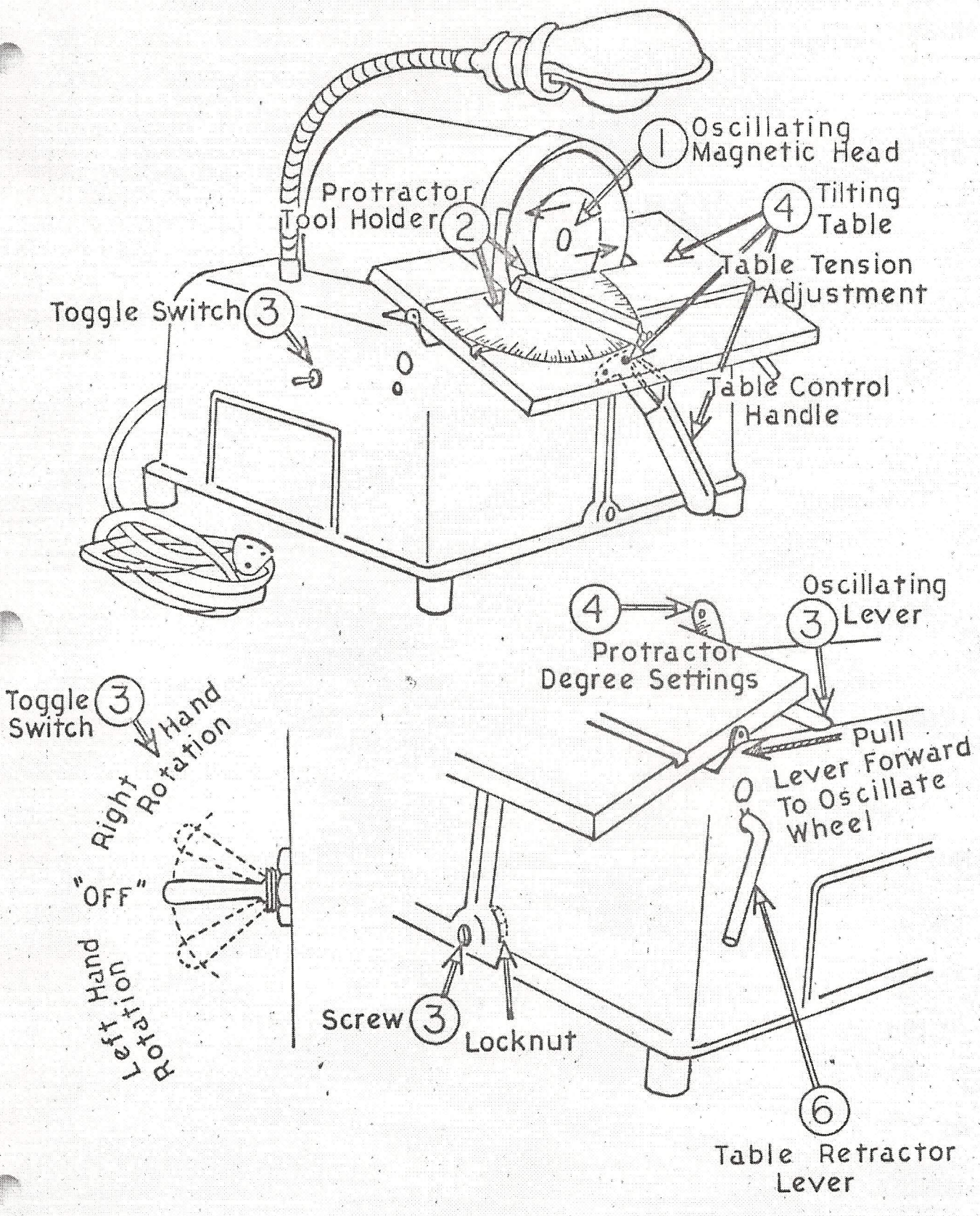

1 Oscillating Magnetic Head
Protractor Tool Holder
2
4 Tilting Table
Table Tension Adjustment
Toggle Switch 3
Table Control Handle
4
Oscillating 3 Lever
Protractor Degree Settings
Toggle Switch 3
Hand Rotation
Right
"OFF"
Left Hand Rotation
Pull Lever Forward To Oscillate Wheel
Screw 3
Locknut
6
Table Retractor Lever

FIGURE 1

5. GRINDING AND LAPPING

a. Lap rotation must be opposite to conventional grinding. Lapping particles should always enter from lower edge of tool and leave the surface at the cutting edge. Action is speeded up by setting the table approximately one degree (1°) less than the clearance relief or rake of angle being finished. (Fig. 2)

b. Keep lap well covered with Leonard Lapping Compound for faster lapping. Use Leonard Standard #320 Grit Lapping Abrasive for superior keen cutting edges. Finer grits available. See Price List.

6. SINGLE HEAD CONVENIENCE

a. Really two machines in one. The magnetic head permits wheel changing in seconds. Wheels are removed and replaced with fingers only. Wheel changing takes approximately eight (8) seconds. (Fig. 2)

b. Table should be retracted during wheel changing by operating control lever, located on right hand side of machine. (Fig. 1)

c. It is practical to grind a tool and if desired, change wheels and lap the tool on the same operation.

7. GRINDING ANGLE ON SPECIAL CARBIDE TIPPED TOOL

Using the Leonard Side Angle Guide (Fig. 2) position tool edge to oscillating wheel. Side angle bar simplifies angle grinding on the smaller tools.

8. GRINDING ONE ANGLE OF "ER" STYLE CARBIDE TIPPED THREADING TOOL

Use Leonard Protractor to ensure accuracy and ease of operation. (Fig. 2)

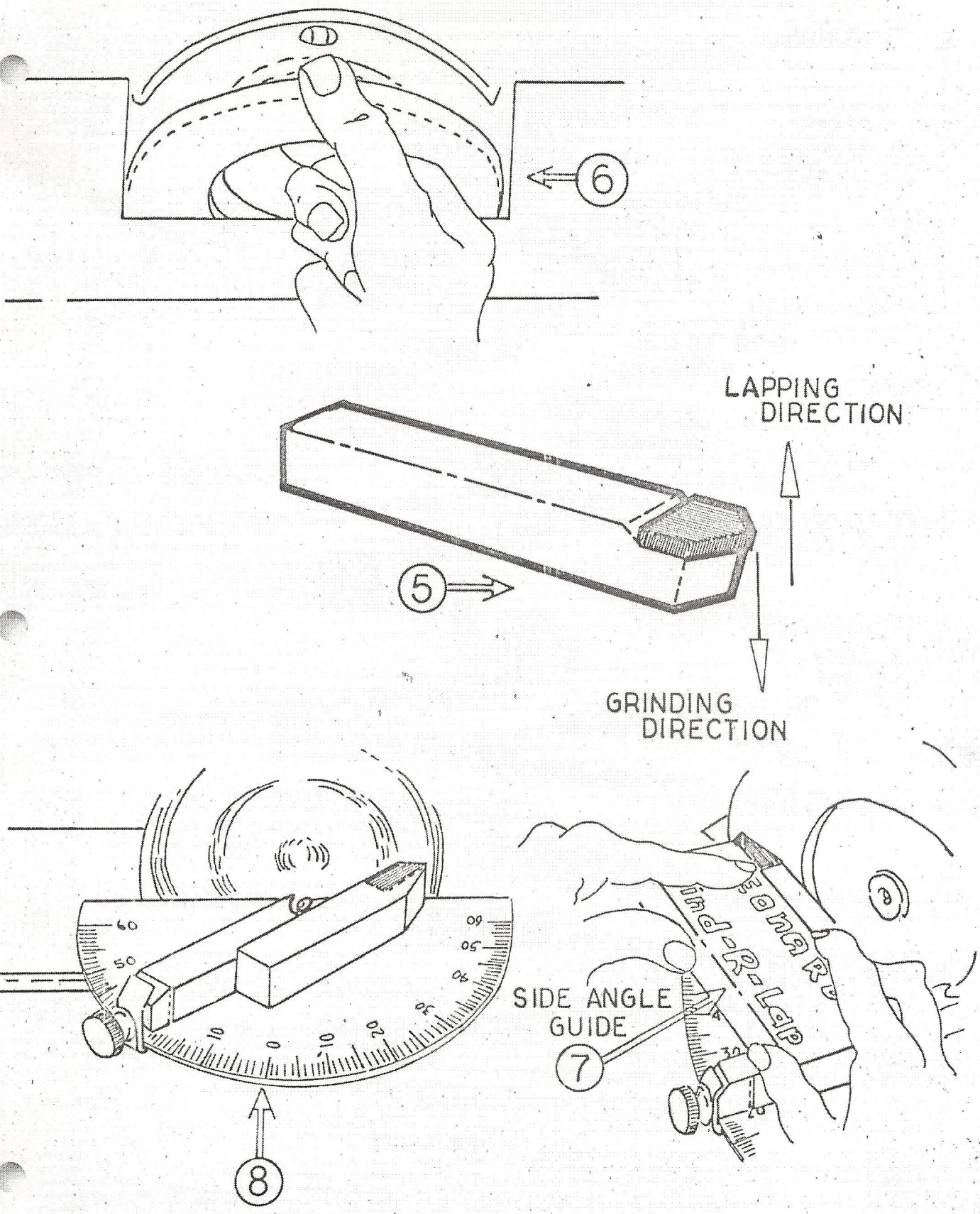
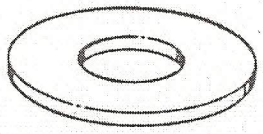

6
LAPPING
DIRECTION
5
GRINDING
DIRECTION
SIDE ANGLE
GUIDE
7
8

FIGURE 2

DIAMOND WHEELS

LEONARD DIAMOND PLATED GRINDING WHEEL
(5" O.D. X 1" Face)

STANDARD ROUGHING & FINE GRADES



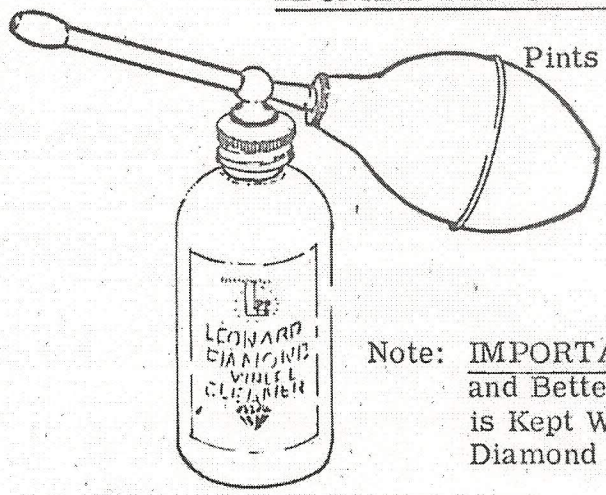
Total concentration of graded natural diamonds plated over entire area of wheel. Smooth cutting action with no smearing or chipping of tool edges. Grinding heat is eliminated for extended tool life.

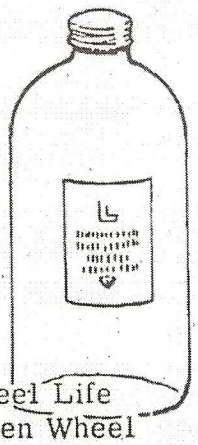
Used for grinding carbides, high speed steel, ceramic tools, etc.

Use Spray Atomizer and Leonard Diamond Wheel Cleaner (see below) to keep wheel clean and free cutting. Use soft dressing stick when necessary, to remove any soft shank steel or other material adhering to wheel. Always use light tool pressure when grinding all tools!

LEONARD DIAMOND WHEEL CLEANER

Pints - - Refill





Note: IMPORTANT - Increased Wheel Life and Better Finish Results When Wheel is Kept Wet at All Times with Leonard Diamond Wheel Cleaner.

LEONARD SPRAY ATOMIZER and
4 OZ., DIAMOND WHEEL CLEANER

LEONARD RESINOID BONDED DIAMOND GRINDING WHEEL
(5" O.D. x 1" Face)

Selected diamonds bonded to provide fast stock removal and good finish on all carbide tools. Long lasting wheel of finest quality.

Used for grinding carbides, high speed steel, ceramic tools, etc.

Occasionally use soft dressing stick to clean face of wheel. This wheel may be run dry.

Recommended - Standard grade for general purpose and fast stock removal.
Fine grade for general purpose and fine finishing.

DUPONT VESPEL® BONDED GRINDING WHEEL

Graded diamond with new DuPont high temperature, high strength, Polymer plastic bond.

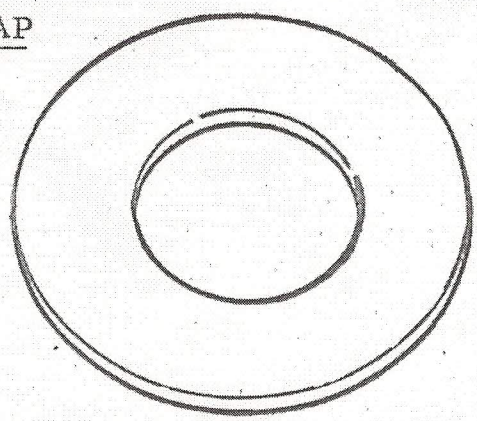
Used for grinding carbides, high speed steel, ceramic tools, etc.

Occasionally use soft dressing stick to clean face of wheel. The wheel may be run dry.

Recommended - General purpose - 120 grit - 50 or 100 concentration
Very high finish - 600 grit - 50 or 100 concentration

LEONARD SINTERED PLAIN RING LAP

Economical ring type wheel. Runs at approximately 400 RPM, which is ideal lapping speed.



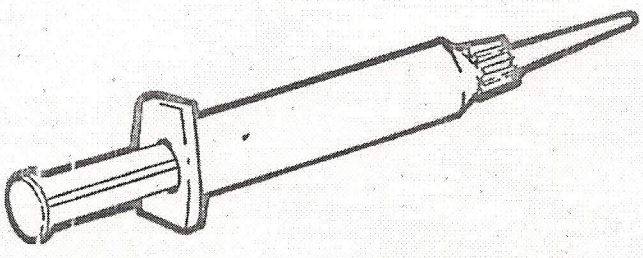
5" O.D. x 1" Face x 1/4" Thick

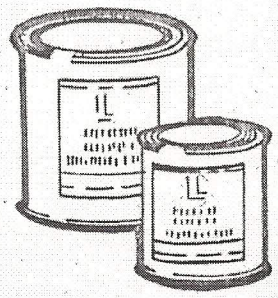
Laps may be charged with "Diamond Lapping Compound" or the new Leonard "Abrasive Lapping Compound" which does an excellent job of lapping all Carbides, High Speed Steel etc., at greatly reduced cost. Lapped edges to a fine micro finish are produced quickly with no special technique needed. Standard 320 grit is recommended for lapping all carbide and H.S.S. tools. Other grits available. See Price List.

Apply Leonard "Abrasive Lapping Compound" to lap with small brush evenly over entire surface. Add more as needed to maintain good cutting action. Occasional spray of Leonard "Diamond Wheel Cleaner" will prevent lap from loading with abraided material. Lap may also be charged with #15 or #9 Heavy Diamond Compound. Apply diamond paste evenly over entire surface with hardened steel block and work thoroughly into the surface. Lapping may then proceed, adding additional diamond compound sparingly as needed.

LEONARD ABRASIVE LAPPING COMPOUND

Quarts



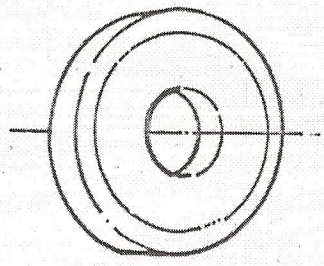


FIVE GRAMS #15 HEAVY DIAMOND COMPOUND

In Disposable Gun

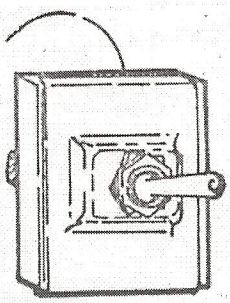
Pints

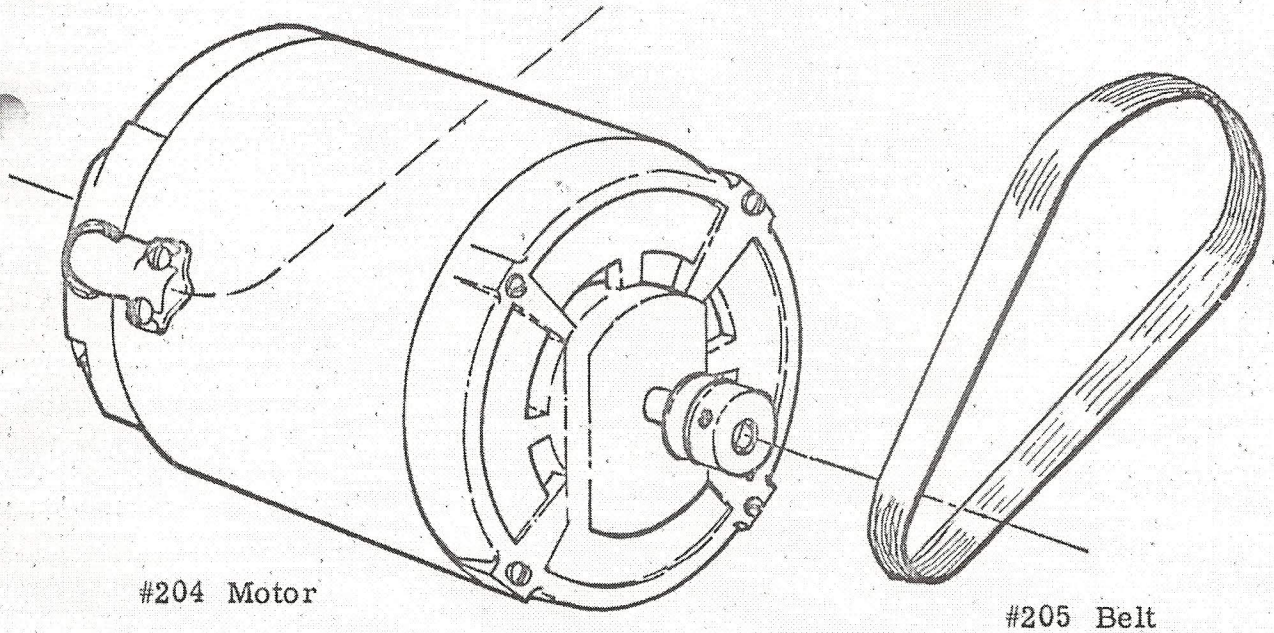
REPLACEMENT PARTS



#600
Oscillating Wheel

#806 Switch





#204 Motor

#205 Belt

#206 Motor Pulley

MAINTENANCE - Wheel spindle is permanently lubricated and sealed and needs no maintenance. Motor bearings are factory lubricated for life time usage.