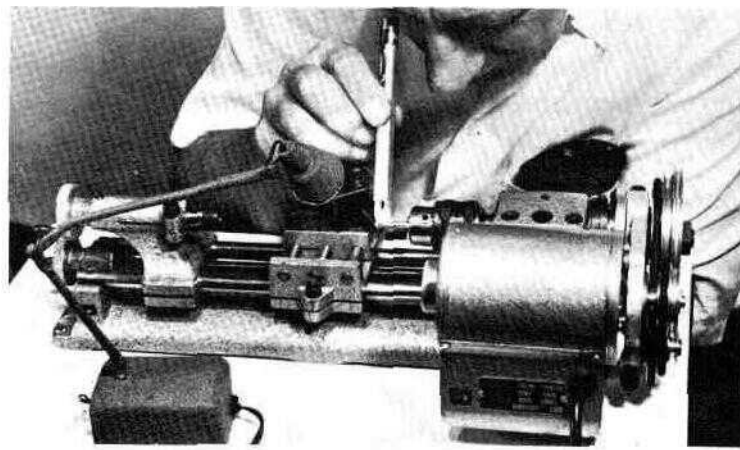


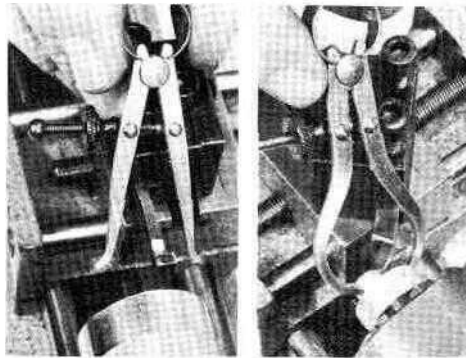
MEASURING ACCESSORIES

precision miniature machining requires quality measuring instruments and aids...

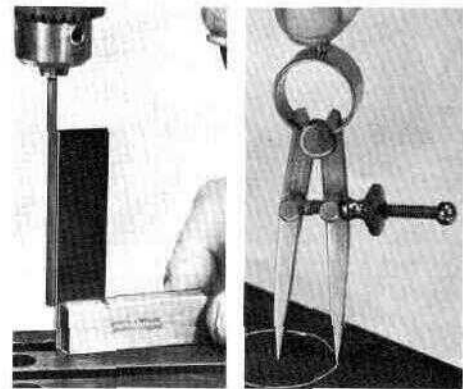
Miniature Lamp (XR 20) has transformer in base. Throws high intensity light, brighter than 150 watt bulb at some distance. Lamp arm folds for storage, measures 15 inches extended. Micro-Mike (XR 22) combines clear optical 20 power magnification with 1% accurate rulings on glass within instrument. Examine drills, laps, lathe tools and work, and immediately see measurement. Touch tip of Mike to work, and image it automatically in focus.



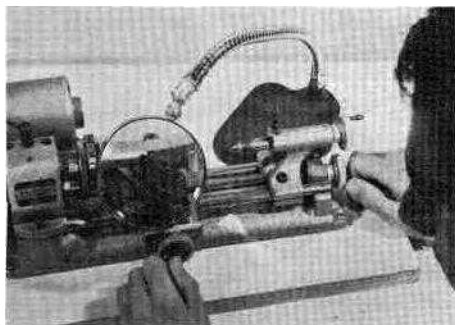
Magna-Viewer (XP 51) permits you to see magnified image of small work, cutting tools, etc., from comfortable working distance. View it wide angle, clear and causes little eye strain. Extra high power auxiliary lens swings down over standard lens for up to 5.25 power.



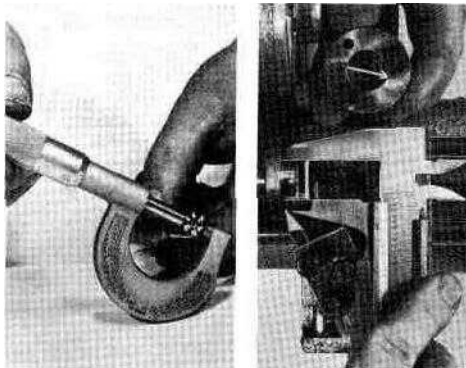
Precision work requires these two miniature 2-inch calipers. Inside Caliper (DB 41) is on left. Outside Caliper (DB 42) on right. Measurements can be transferred from one to the other, or from calipers to rules, micrometers, etc.



Toolmaker's Precision Square (XR 45), above left, is best tool for layout of vertical lines, checking drill press and grinder set-ups. Hardened end tempered 2-inch blade guarantees high accuracy. Two-inch Spring Divider (XR 43), above right, is used to measure distances lengthwise on lathe work, and to scribe layout lines and centers on flat metal work.



Five-inch magnifying glass (XR 21) gives you full visibility and protects eyes too. Flexible stand adjusts to any angle.



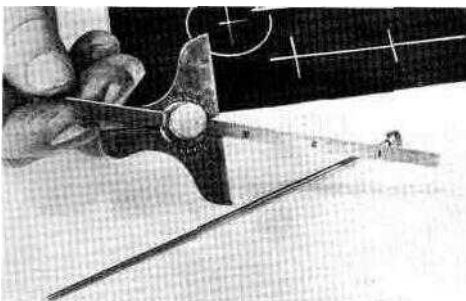
0-1-inch Micrometer (XR 70), above left, is every machinist's most often used tool. You'll need it to check drills, taps, screws. The thickness of sheet metal, and to measure work turned in the lathe. Above right, Vernier Caliper (XR 60) is useful for measuring inside and outside diameters, thicknesses, etc. Reads from 0 to 5 $\frac{3}{16}$ inch.



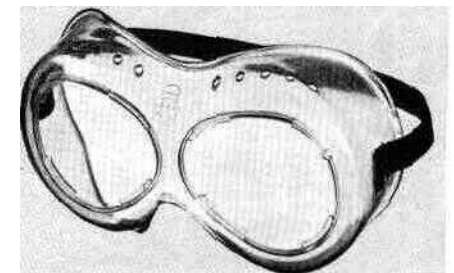
The most important measuring tool is XR 44 Machinist's Combination Square. Blade is 4 inches long. Comes with carrier head for marking round stock, scriber and square, head.



Foot Switch Rheostat (XR 100) frees your hands for better control and safety in sawing, drilling and lathe work. Cannot be used with induction-type Unimat motors. Use only with brush-type motors. Built-in 100 watt rheostat controls speed from zero to full R.P.M.



Adjustable Angle Depth Gauge (XR 47) is supplied with 6-inch rod for measuring hole too small for rule. Tool sets to every 15 degree angle on the circle. Excellent for layout work too, and for checking grinding and sawing angles.

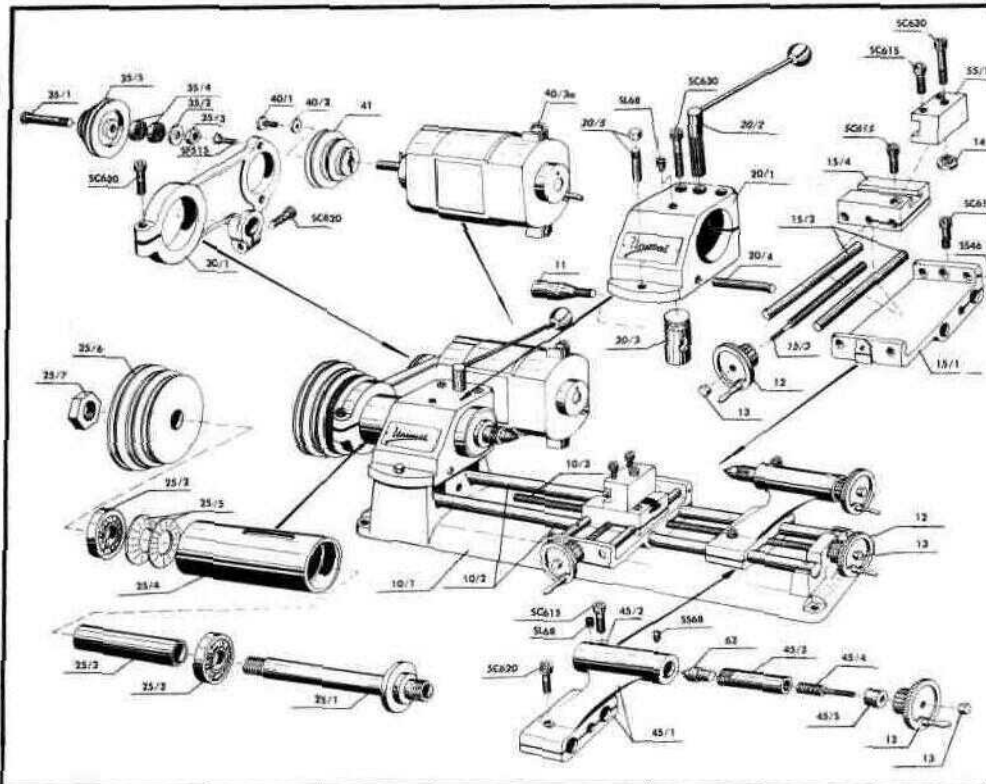


Use these inexpensive Safety Goggles (XR 53) whenever you cut steel or brass on lathe, and for all grinding, polishing, buffing operations.

Protractor (XR 40), not shown here, has a 6-inch blade and can be used to read drilling, milling, sawing, mitering and layout angles. One-degree markings, from 0-180 are numbered in both directions. Markings are sharp and fractions of a degree can be estimated.

Model DB 200, UNIMAT BASIC UNIT

REPLACEMENT PARTS LIST .



DB 10 Lathe bed, complete with ways & cross slide (DB 15)
 DB 101 lathe bed only
 DB 10/2 Bed way
 SC 635 Allen head screw (16x35mm) for ways
 DB 10/3 Leadscrews
 DB 11 Headstock tapered clamping screw
 DB 12 Hand wheel
 DB 13 Nut for hand wheel
 DB 14 "T" nut
DB 15 Cross slide assembly, complete
 DB 15/1 Lower cross slide
 DB 15/2 Cross slide way
 SS 46 Set screw (4x6mm) for ways
 SC 615 Allen head screw (6x15mm) for lower cross slide
 DB 15/3 Cross feed screw
 DB 12 Hand wheel
 DB 13 Nut for hand wheel
 DB 15/4 Upper slide rest
 SC 615 Allen head screw (6x15mm) for upper slide rest
 DB 20 Headstock assembly, complete with spindle (DB 25), motor (DB 40) motor bracket (DB 30) & idler (DB 35)
 DB 201 Headstock casting only
 SC 630 Allen head screw (6x30mm) for headstock casting
 DB 20/2 Hand feed lever & pinion
 DB 20/3 Clamping bolt
 DB 20/4 Locking pin for clamping bolt
 DB 20/5 Aligning pin for headstock (type illus.)
 DB 20/6 Aligning washer (for earlier models)
 DB 20/6 Spindle return spring
 SL 68 Locking screw (6x8mm) for spindle
 DB 25 Headstock spindle assembly, complete with bearings, pulley & nut
 DB 25/1 Spindle shaft
 DB 25/2 Ball bearing race
 DB 25/3 Spacer sleeve
 DB 25/4 Spindle housing
 DB 25/6 Pair of Belleville washers
 DB 25/6 Pulley
 DB 26/7 Nut for pulley
 DB 30 Motor bracket complete with idler (DB 35)
 DB 30/1 Motor bracket casting
 SC 620 Allen head screw (6x20mm) for bracket
 DB 35 Idler bearings & pulley assembly, complete
 DB 35/1 Idler shaft
 DB 35/2 Washer for idler shaft
 DB 35/3 Nut for idler shaft
 DB 35/4 Ball bearing race
 DB 35/5 Pulley

DB 40 Motor complete with cord, switch, pulley mounting screw & washer
 DB 40/1 Pulley mounting screw
 DB 40/2 Washer for pulley mounting screw
 DB 40/3 Brushes (give motor specifications)
 DB 40/3a Caps for brushes (* * *)
 DB 41 Condensor for Induction-type motor
 DB 40/5 Cord switch
 DB 41 Pulley for motor
 SF 515 Motor mounting screw (5x15mm)
 DB 43 Motor, 220 volt
 DB 45 Tailstock assembly, complete
 DB 45/1 Tailstock casting & clamping plate
 SC 620 Allen head screw (6x20mm) for clamping plate
 SC 615 Allen head screw (6x15mm) for spindle clamp
 DB 45/2 Spacer washer for spindle clamp
 DB 45/3 Tailstock spindle
 SL 68 Locating screw (6x8mm) for spindle
 DB 45/4 Tailstock spindle feed screw
 DB 45/5 Bearing sleeve for feed screw
 SS 6B Set screw (6x8mm) for bearing sleeve
 DB 12 Hand wheel
 DB 13 Nut for hand wheel
 DB 50 Set of drive belts
 DB 50a Small drive belt
 DB 50b Large drive belt
 DB 55 Tool post complete with screws & "T" nuts
 DB 55/1 Tool post without screws
 SC 630 Allen head screw (6x30mm) for mounting tool post (type illustrated)
 SC 620 Allen head screw (6x20mm) for mounting tool post (recessed bore type)
 SC 615 Allen head screw (6x15mm) for clamping tool bit
 DB 14 "T" nut
 DB 60 Vertical column complete with adapter & screws
 DB 60/1 Column
 DB 60/2 Adapter
 DB 11 Headstock tapered clamping screw
 SC 620 Allen head screw (6x30mm)
 DB 61 Lathe dog
 DB 62 Grinding wheel arbor, washer & screw
 DB 63 Dead center
 DB 64 Face plate
 DB 65 Slotted adapter screw
 DB 66 Allen wrench
 DB 67 Wood storage case for Unimat
 DB 68 Operating & Instruction manual

3-Jaw Universal Lathe Chuck, DB 1001

DB 1001/1 Back plate (adapter)
 DB 1001/2 Jaws, unground, set of 3
 DB 1001/3 Horseshoe clip
 DB 1001/1 Tightening bars
 SF 425 Flat head screw (4x25mm)

Drill Chuck, DB 1005

DB 1005/1 Drill chuck body
 DB 1005/2 Key

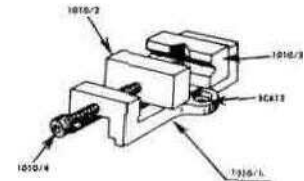
ACCESSORIES

4-Jaw Independent Lathe Chuck, DB 1001a

DB 1001a1 Back plate (adapter)
 DB 1001a/2 Jaws, set of 4
 DB 1001a/3 Key
 SF 430 Flat head screw (4x30mm)

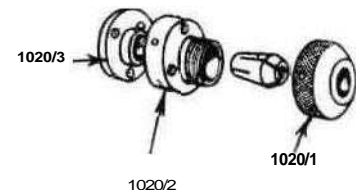
Machine Vise, DB 1010

DB 1010/1 Vise frame
 DB 1010/1 Movable jaws & guide plate
 SF 58 Flat head screw (5x8mm) for plate
 DB 1010/3 Stationary jaw
 DB 1010/4 Clamping screw & pin
 SC 612 Allen head screw (6x12mm)
 DB 14 "T" nut
 SM 410 Fillister head screw (4x10mm)



Collet Attachment, DB 1020

DB 1020/1 Nosepiece
 DB 1030/3 Collet holder body
 DB 1020/3 Back plate (adapter)
 DB 1001/4 Tightening bars
 ST 418 Flat head screw (4x18mm)



Polishing Arbor, DB 1030

DB 1030/1 Back plate (adapter)
 DB 1030/1 Arbor
 SM 418 Fillister head screw (4x18mm)

Steady Rest, DB 1040

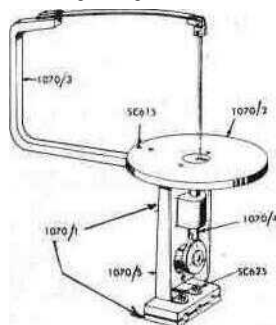
DB 1040/1 Casting with clamping plate
 DB 1040/1 Jaws, set of 3
 SC 612 Allen head screw (6x12mm) for clamping jaws
 SC 620 Allen head screw (6x20mm) for clamping plate

REPLACEMENT PARTS LIST

ACCESSORIES cont'd

Jig Saw Attachment, DB 1070

- DB 1070/1 Base casting & clamp plate
- SC 625 Allen head screw (6x25mm)
- DB 1070/2 Saw table
- SC 615 Allen head screw (6x15mm)
- DB 1070/3 Top frame with leaf spring & clamp
- DB 1070/4 Bottom blade clamp, bar & bearing
- DB 1070/5 Eccentric driver
- DB 1001/4 Tightening bar



Adjustable Hand Tool Rest, DB 1201a

- DB 1201a/1 Casting with clamping plate & pin
- SC 620 Allen head screw (6x20mm)
- DB 1201a/2 "T" bar tool post

Milling Table, DB 1210

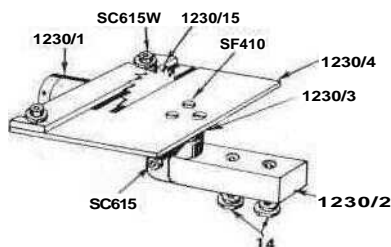
- DB 1210/1 Table
- SC 612 Allen head screw [6x12mm]
- DB 1210/2 "T" nut
- DB 1210/2 Clamp with 2 screws, nut & washer

2 1/2-inch Circular Saw Attachment, DB 1230

- DB 1230/1 Arbor with washer & screw
- DB 1230/2 Base casting
- SC 615 Allen head screw (6x15mm) for base casting
- DB 14 "T" nut
- DB 1230/3 Pivot arm
- SF 410 Flat head screw (4x10mm) for mounting table to pivot arm
- DB 1230/4 Saw table
- DB 1230/5 Work guide
- SC 615W Allen head screw (6x15mm) & washer to clamp guide
- DB 1001/4 Tightening bar

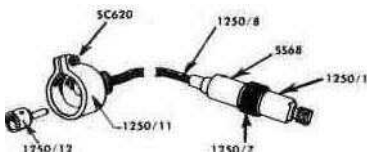
3 1/16-inch Circular Saw Attachment, DB 1230a

- DB 1230a/1 Arbor with washer & screw
- DB 1230a/2 Base casting
- SC 615 Allen head screw (6x15mm) for base casting
- DB 14 "T" nut
- DB 1230a/3 Pivot arm
- SF 410 Flat head screw (4x10mm) for mounting table to pivot arm
- DB 1230a/4 Saw table
- DB 1230a/5 Work guide
- SC 615W Allen head screw (6x15mm) & washer to clamp guide
- DB 1001/4 Tightening bar
- DB 1230a/6 Blade guard with bracket
- SM 48 Fillister screw (4x8mm) for mounting guard



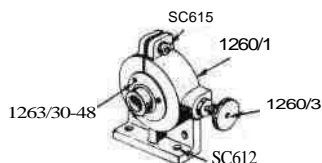
Flexible Shaft, DB 1250

- DB 1250/1 Spindle complete with bearings, threaded housing, spring & nut
- DB 1250/2 Spindle shaft
- DB 1250/3 Ball bearing race
- DB 1250/4 Spindle housing
- DB 1250/5 Spindle shaft nut
- DB 1250/6 Bearing loading spring
- DB 1250/7 Knurled ring
- DB 1250/8 Shaft complete with core, housing, and knurled ring
- DB 1250/9 Shaft housing with knurled ring
- SS 68 Set screw (6x8mm) for sleeve
- DB 1250/10 Shaft core
- DB 1250/11 Adapter clamp for headstock
- SC 620 Allen head screw (6x20mm)
- DB 1250/12 Threaded driver
- DB 1001/4 Tightening bar



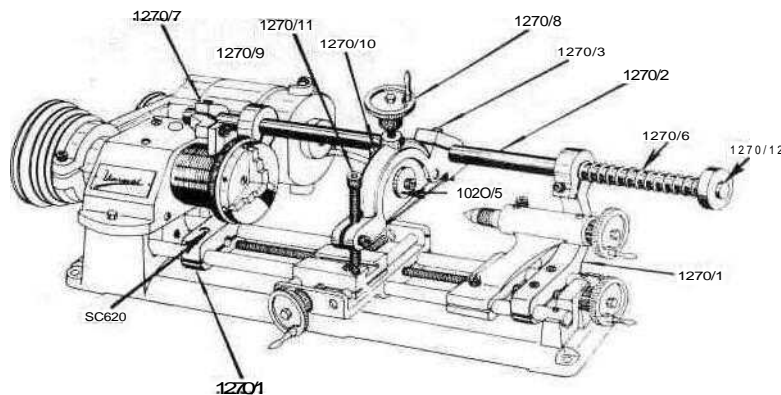
Indexing & Dividing Head, DB 1260

- DB 1260/1 Indexing head casting
- SC 615 Allen head screw (6x15mm) for clamping index plate
- SC 612 Allen head screw (6x12mm) for mounting unit on cross slide
- DB 14 "T" nut
- DB 1260/2 Horseshoe clip for Index plate
- DB 1260/3 Spring loaded locking pin with threaded holder, spring & pin with knurled head
- DB 1260/4 Pin with knurled head only
- DB 1263/30 Index plate for 30 divisions
- DB 1263/36 Index plate for 36 divisions
- DB 1263/40 Index plate for 40 divisions
- DB 1263/48 Index plate for 48 divisions
- DB 66a Allen wrench, short head



Round Table, DB 1261

- DB 1261/1 Table
- DB 1261/2 Clamp with 2 screws, nut & washer



Thread Chasing Attachment, DB 1270

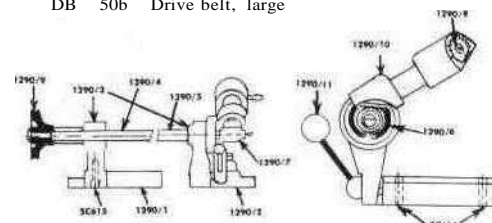
- DB 1270/1 Mounting bracket casting
- SC 620 Allen head screw (6x20mm) for mounting bracket
- DB 1270/2 Guide rod
- DB 1270/3 Cutting arm casting with pivoting tool holder base
- SC 620 Allen head screw (6x20mm) for cutting arm
- DB 1270/4 Leaf spring for cutting arm
- SC 612 Allen head screw (6x12mm) for leaf spring
- DB 1270/5 External threading tool holder with spacer washer
- SC 620 Allen head screw (6x20mm) for external tool holder
- DB 1270/6 Guide rod return spring

Slow Speed Attachment, DB 1280

- DB 1280/1 Motor bracket casting
- SC 620 Allen head screw (6x20mm)
- DB 35 Idler bearing & pulley assembly (also see DB 35/1 to 35/5)

Power Feed Attachment, DB 1290

- DB 1290/1 Base casting
- DB 1290/2 Base casting
- DB 1290/3 Bearing casting & bearing
- SC 615 Allen head screw
- DB 1290/4 Drive shaft, washer & nut
- DB 1290/5 Horseshoe clip
- DB 1290/6 Horseshoe clip & washer
- DB 1290/7 Worm
- DB 1290/8 Worm & bevel gears
- DB 1290/9 Pulley, nut & washer
- DB 1290/10 Gear guard casting
- DB 1290/11 Hand lever & spring
- DB 1290/12 Handwheel with gear
- DB 1290/13 Pulley-nut for headstock spindle pulley
- DB 50b Drive belt, large

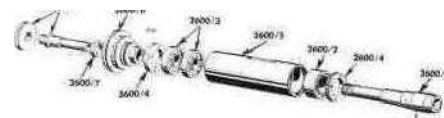


Headstock Raising Block, DB 1310

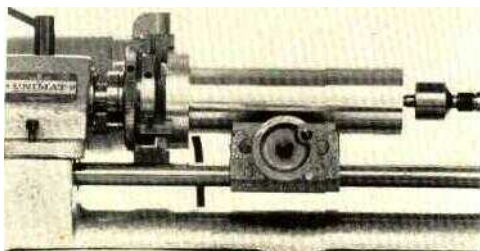
- DB 1310/1 Raising block
- DB 1310/2 Double hole clamping bolt

Drawbar Spindle, Watchmaker's Style WW, DB 2600

- DB 2600/1 Spindle shaft
- DB 2500/2 Front roller bearing race
- DB 2600/3 Pair of angular-contact rear bearings
- DB 2600/4 Threaded bearing holder rings
- DB 2600/5 Spindle housing
- DB 2600/6 Spindle pulley
- DB 2600/7 Nut for pulley
- DB 2600/8 Draw bar with hand wheel

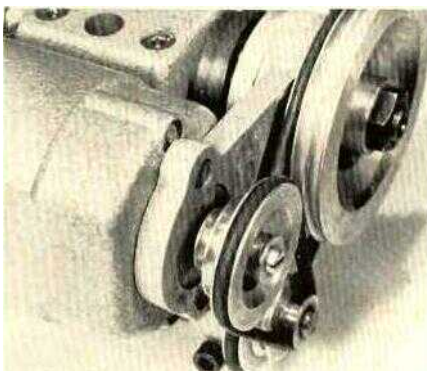


The speed of your Unimat headstock spindle depends upon four factors; the motor, the belt arrangement, the load and the kind of cutting operation. The heavier the workpiece, the more load and consequent reduction in speed. Your spindle will always tend to accelerate up to maximum speed, however as you start to feed a lathe tool, or drill, it will slow down slightly. If you feed too fast, the spindle may even stall causing the belts to slip. In this way, you have a built-in safety factor.



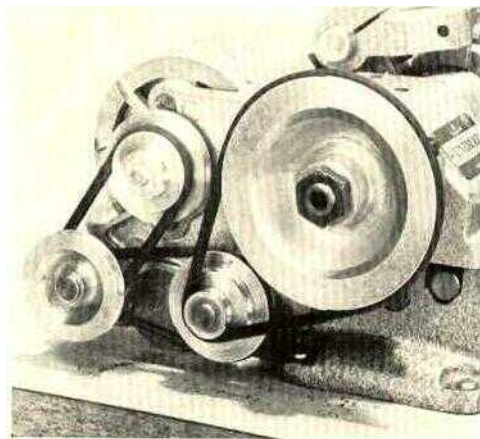
MOTOR LOAD TEST BAR

The R.P.M. figures listed in the chart were based on this test procedure: an aluminum bar weighing 1 8 1/2 - ounces, the maximum size that fits the lathe (without using the Headstock Raising Block) was mounted between the 3-jaw chuck and the tailstock Ball Bearing Center. This bar (see photo) measures 5 5/32-inch long, by 1 5/8-inch dia., with 2 1/2-inch dia. by 1/2-inch neck. Motors were run for a 15 minute warmup, and speeds were measured with line voltage held at 120.



BELT AND PULLEYS ON MAXIMUM R.P.M.

The basic Unimat provides eleven speeds. Two additional speeds used for threading and turning large diameter work are provided by DB 1280 Slow Speed Attachment. You can obtain other speeds by machining your own extra motor pulleys of diameter to suit.



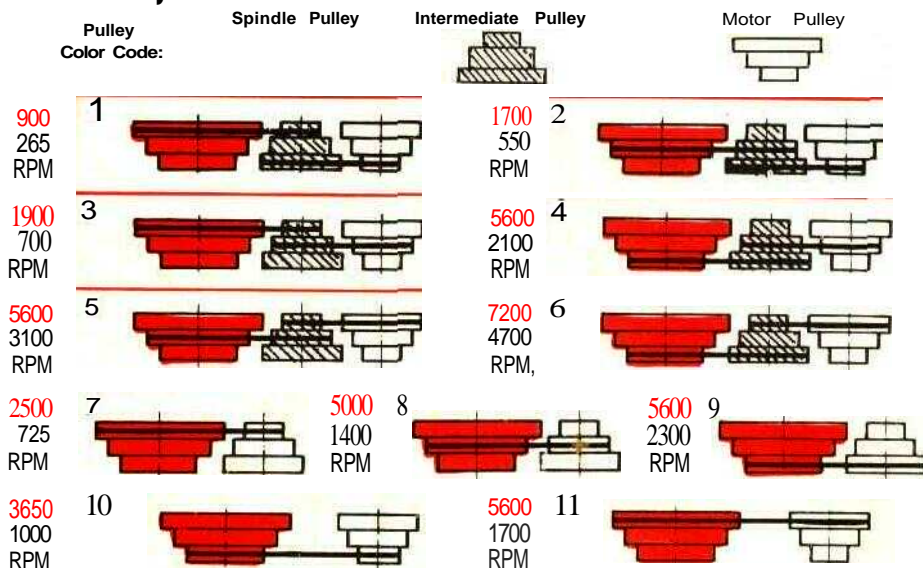
SLOW SPEED ATTACHMENT DB1280

In maximum speed belt position with Drill Chuck and no other load, speeds can exceed 10,000 R.P.M. This is not recommended for continuous use. Before using set-up #6 or 9, be sure bearings are free turning and well lubricated. Note that cutting and drilling speeds under load will drop to 1/2 or less of the R.P.M. figures shown at all speeds above 1,000 R.P.M.

SPEED CHART

SPINDLE SPEEDS (with test bar mounted in 3-jaw chuck)

Motor Speed } BRUSH-type: 16,000 (Spindle R.P.M. indicated in **RED**)
Running Free } INDUCTION-type: 3,600 (Spindle R.P.M. indicated in **BLACK**)



with DB 1280 Slow Speed Attachment



AVERAGE CUTTING SPEEDS

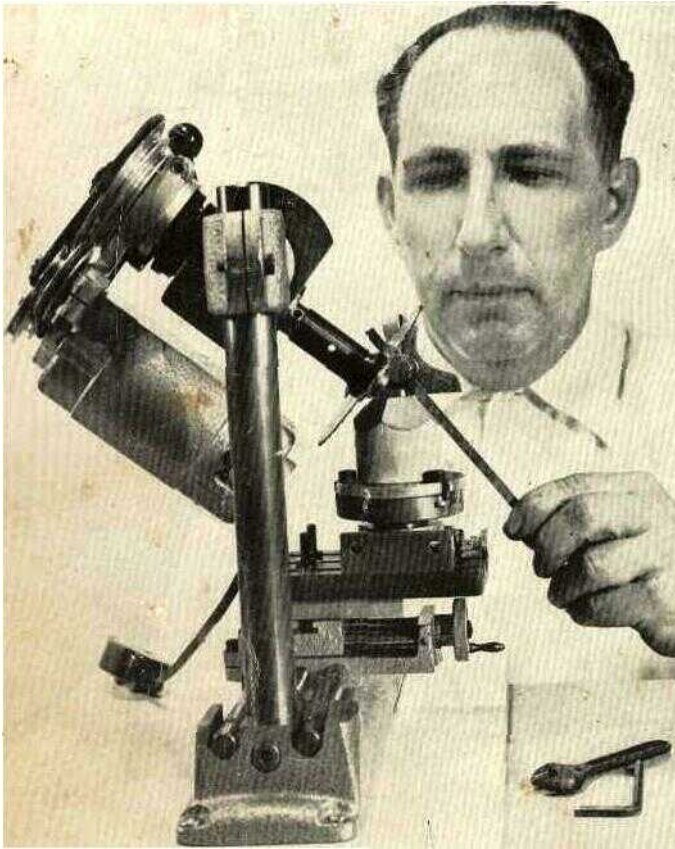
NOTE: These speeds are listed only as a help in getting started. Optimum speeds depend on hardness of materials, cutting angles, etc. It is suggested that you make trial cuts at recommended R.P.M., and then increase or decrease if better results are obtained. Keep a chart or notes of your own results.

MATERIAL	0-5/16" diameter	5/16-3/4" diameter	3/4-1" diameter	1-2" diameter
TURNING AND MILLING				
Steel	1,400	950	590	310
(Aluminum, Brass, Copper)	1,700	1,400	950	500
Wood, Plastic	2,200	1,700	1,400	950
DRILLING (high speed drills only)				
Steel	1,700	1,400	950	310
(Aluminum, Brass, Copper)	2,200	1,700	1,400	950
Wood, Plastic	2,200	1,700	1,400	950
JIG SAWING				
Steel		370		
(Aluminum, Brass, Copper)		590		
Wood, Plastic		730		
CIRCULAR SAWING				
(Aluminum, Brass, Copper)		590		
Wood, Plastic		730		
THREADING				
All materials	500	330	330	200
GRINDING				
Metals (per stone diameter)	5,200	3,200	2,000	1,700

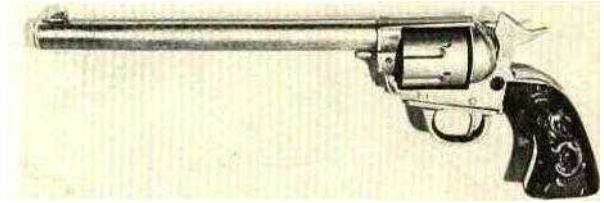
THE WONDERFUL WORLD OF UNIMAT

Initially sold only to industrial users, UNIMAT has also become the leading, metal-working machine tool for serious-minded hobbyists. There are years of fun and satisfaction ahead for you with UNIMAT and the fascinating new hobby of miniature machining. You'll

have pride in accomplishment with the accurate results that the versatile UNIMAT will give you. Pictured here are but a few of the thousands of different projects handsomely created with the UNIMAT equipment.



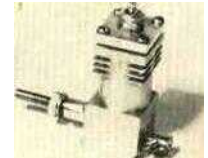
Designer Erv Edell, Chicago, Ill. machining mathematical model.



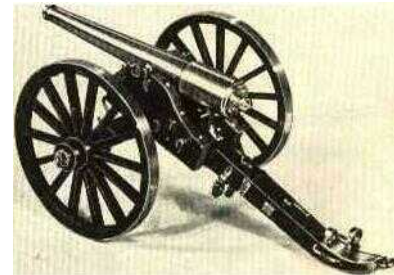
"Colt Peacemaker", 1/2 size replica $7\frac{1}{2}$ made of brass & wood by R. Stankiewicz, Bohemia, N.Y.



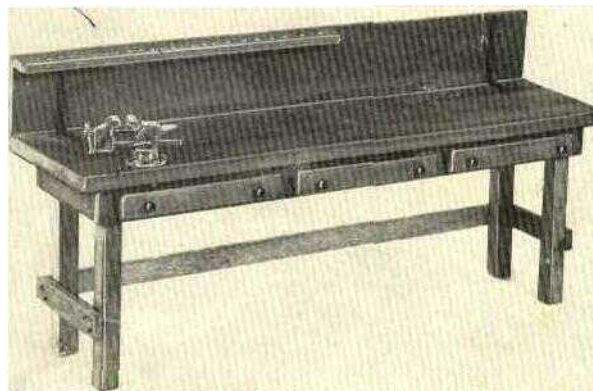
Above left Film Strip Carrier & Lens Adapter made of aluminum by Dr. A. Tumolo, Brooklyn, N.Y.



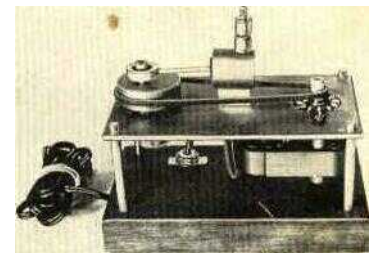
Above right, "Little Dragon" airplane engine made of aluminum bar stock by James Wilson, Hazelwood, Mo.



"Parrot Rifle" replica made of brass & walnut by Robert J. Slattery, Denver, Colo.



Steam Engine (left) made of steel, brass & bronze by Henry Limbach, Belrose, N.Y. Wood Model Workbench (above) with operating steel vise. Size 10" x 5" x 3" made by Richard Neff, Houston, Tex. Below, 32" Underwater Spear Gun, made from scrap tubing & aluminum bar stock by Gunsmith H.M. Nierling, Dania, Flo.



Aquarium Air Pump, made of brass & wood by Louis Herbinger, Bronx, N.Y.



Photograph courtesy of
Mechanix Illustrated Magazine,
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