

Here is your **GUIDE BOOK**

FOR THE VERSATILE

**1/4" PORTABLE ELECTRIC DRILL**

~ Its proper Use and Care

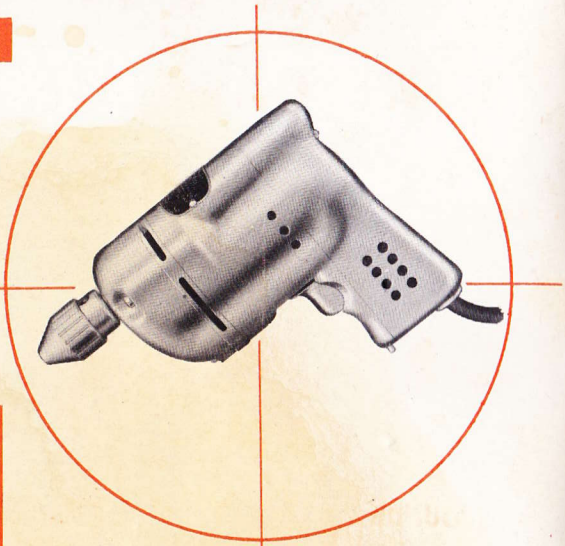
**ELECTRIC**  
**HOME-UTILITY**  
**TOOLS**

**PRODUCTS OF THE BLACK & DECKER MFG. CO.**

# ELECTRIC HOME-UTILITY TOOLS

products of Black & Decker

## 1/4" PORTABLE ELECTRIC DRILL CAT. NO. HU-1



### SPECIFICATIONS

7<sup>5</sup>/<sub>8</sub>" Long - Weighs 3<sup>1</sup>/<sub>4</sub> lbs.

Capacity in Steel - 1/4"

No-load spindle speed - 2250 R.P.M.

Universal Motor - AC or DC

3-Wire Cable and Plug

Trigger Switch; Hex-Key Chuck

### FEATURES

1. "Universal" motor—will operate from any standard light circuit—A.C. or D.C.
2. Fast-operating Jacobs hex-key chuck—capacity from 0 to 1/4-inch shank.
3. Instant-release "trigger" switch—easy to operate, safe to use. Can be locked "ON" if desired.
4. 3-wire electric cord; third wire for ground connection to protect from shock.
5. Strong, light die-cast aluminum housings will take a lot of hard use. Shaped to fit the hand.
6. Sturdy gears, pinions and bearings.
7. Double-duty—for use as portable Drill or in Bench Stand as a drill press.

## FOR HOMES, HOBBY SHOPS, FARMS, REPAIR KITS

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# TAKE CARE OF YOUR DRILL

## ~ IT'S WORTH IT!

Although the 1/4" Home-Utility Drill is "low-priced" it is not *cheap*. It contains good material and workmanship that will give years of service if properly used.

### MOTOR

This motor is only for the voltage specified on the nameplate. It is "universal" in that it can be used on either direct current or alternating current from 25 to 60 cycles. Voltage should not vary more than 10% over or under the voltage shown on the nameplate.

### GROUNDING

The green wire extending from the side of the attachment plug is a "ground-wire." The other end is attached to the Drill frame. Always connect the free end of this green wire to a "ground contact" such as water pipe, conduit, or a spike driven into the ground; this is important to protect you from shock in case the tool "shorts."

### LUBRICATION

This Drill was properly lubricated at the Factory and is ready for use. The gears should be re-lubricated regularly, from sixty days to six months, depending on use. Remove gear housing, flush out all old grease with kerosene and, with gears in place, re-fill the housing *only half full*. All bearings in the gear case end are lubricated by grease in the gear case. The commutator end armature bearing may be lubricated by removing the two screws at the back of the switch handle and lifting the switch handle out of place far enough to place one or two drops of oil on the armature shaft. It will not be necessary to disconnect the wires. This lubrication is essential only after an extensive period of operation. Drills out of service for a long time should be completely re-lubricated before use.

### COMMUTATOR AND BRUSHES

Inspect carbon brushes frequently and replace when badly worn. Replace weak brush springs. Keep brushes clean and sliding freely in their guides. Keep commutator clean and smooth. Rub very lightly with fine sand paper (*not* emery cloth). If badly grooved, turn down on a lathe or send to our Service Station for repair. Keep all soldered lead connections tight; re-solder if loose.

For minor replacements you can order new parts *by number and name* through your dealer or from your nearest Factory Service Branch—addresses are on back cover. The Parts List and "exploded" drawing on pages 4 and 5 will enable you to identify all Drill parts.

For expert "factory" repairs to your Drill send it (or have your dealer send it) to the most convenient of our Service Branches. At these locations (back cover) we have all parts and equipment necessary for inspection and repair.

All replaceable parts and assemblies of this Drill are shown and numbered in the drawing above. For minor replacements, such as commutator brushes, chuck jaw assemblies, armatures, switch assemblies, where you have facilities for making the replacements, you can order the new parts by number and name through the dealer who sold you this Drill, or from our Factory Service Branches listed on back cover.

For all major repairs, replacements and service, we recommend that you send your Drill (or, if inconvenient, have your dealer send it) to the nearest of our Factory Service Branches, where we have all parts and the equipment necessary for accurate replacements and careful in-

spection. Save the box in which you bought the Drill, keep the Drill in it for protection, and use the box to ship the Drill to our Service Branch, if necessary.

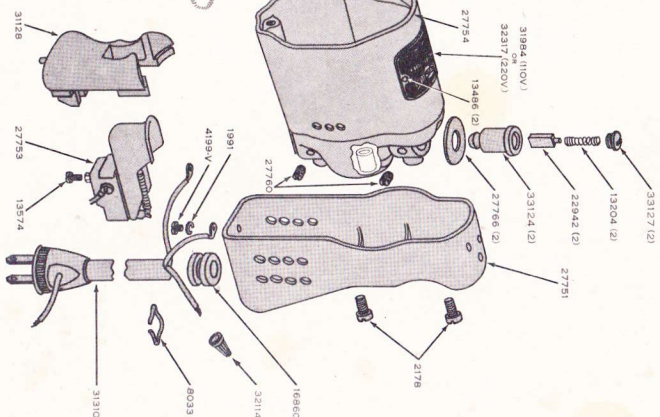
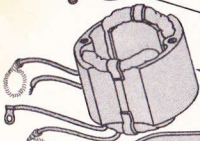
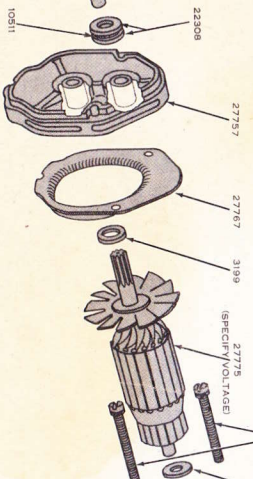
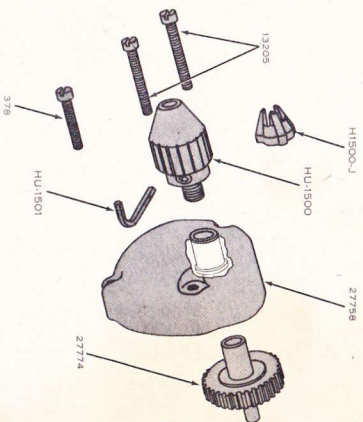
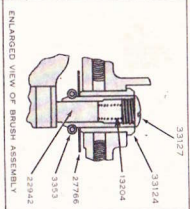
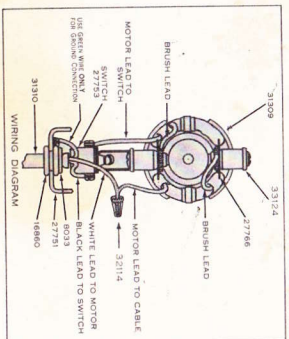
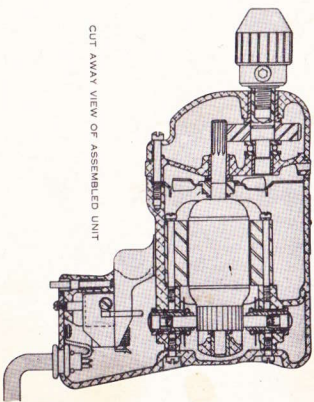
In ordering parts, always give complete information from the nameplate of your Drill. If you ship the Drill to us, be sure to put your return name and address inside the package and send a separate letter to the same Service Branch telling us what you wish done. All repairs and service will be handled by our Service Branches on a cash basis and will be shipped parcel post C.O.D. unless other arrangements are made.

378	Gear Case Assembling Screw (#8-32 x 1 1/4" F.H.M.S.)
1991	#6 Lock Washer
2178	Switch Handle Assembling Screw (two needed) (#8-32 x 3/8" F.H.M.S.)
3066	Armature Shaft Washer (commutator end)
3199	Armature Shaft Washer (fan end)
*3353	Brush Lead Terminals (two needed) (Included in No. 31309)
4199-V	Ground Wire Attaching Screw (#6-32 x 3/16" R.H.M.S.)
8033	Thrust Clamp
10511	Thrust Ball Retainer
13150	Field Assembling Screw (two needed) (#6-32 x 1 1/4" F.H.M.S.)
33124	Brush Holder (two needed)
13204	Brush Spring (two needed)
13205	Gear Case Assembling Screw (two needed) (#8-32 x 1 1/4" F.H.M.S.)
33127	Brush Holder Plug (two needed)
13486	#2 x 1/4" Nameplate Drive Screw (two needed)
13574	Switch Assembling Screw (#4-40 x 3/8" R.H.M.S.)
16860	Electric Cord Bushing
HU-1501	Chuck Key
22308	Ball Thrust Washer (two needed)
22942	Brush (two needed)
*26119	Lead Terminals (three needed)
*27748	(Included in Nos. 31309 & 31310)
*27749	Plunger Spring (Included in No. 31128)
*27750	Plunger (Included in No. 31128)
27751	Switch Handle Case

27753	Switch and Trigger Mechanism
+27754	Field Case (Includes No. 27761)
+27757	Gear Case Cover (Includes Nos. 27762, 27763)
+27758	Gear Case (Includes No. 27764)
27760	Brush Holder Set Screw (two needed) (#8-32 x 1/4" Set Screw)
*27761	Armature Bearing (Commutator End) (Included in No. 27754)
*27762	Armature Bearing (Fan End) (Included in No. 27757)
*27763	Spindle Bearing (Back End) (Included in No. 27757)
*27764	Spindle Bearing (Front End) (Included in No. 27758)
*27765-A	Armature (Included in No. 27775) (Specify Voltage)
27766	Insulating Shield (two needed)
27767	Baffle Plate
+HU-1500	Chuck (Includes Nos. HU-1501 and H1500-J)
H1500-J	Chuck Jaws (Assembly of 3 Jaws) (Included in No. HU-1500)
*27773	Fan (Included in No. 27775)
27774	Spindle and Gear Assembly
+27775	Armature and Fan Assembly (Includes Nos. 27765-A and 27773) (Specify Voltage)
+31128	Switch Support Assembly (Includes Nos. 27748, 27749, 27750)
31309	Field (Complete with Nos. 3353 (2) and 26119 Lead Terminals) (Specify Voltage)
31310	Electric Cord and Plug Assembly (Complete with No. 26119 (2) Lead Terminals)
31984	Nameplate (110 V.)
32114	Wire Connector
32317	Nameplate (220 V.)

\*These numbers do not appear in the Exploded View above.

†Parts included in this sub-assembly may be ordered separately if you are equipped to install them correctly. Otherwise, we suggest that you order the complete sub-assembly for best service and performance of your Drill.



# ELECTRIC HOME-UTILITY TOOLS

## 1/4" ELECTRIC DRILL

Catalog No. HU-1  
Model 1

AC - DC  
2250 R.P.M.

110 Volts - 1.3 Amps.  
or  
220 Volts - .65 Amps.

IMPORTANT—IN ORDERING PARTS FOR THIS DRILL SPECIFY: (1) 1/4" HOME-UTILITY DRILL MODEL 1;  
(2) VOLTAGE SHOWN ON DRILL NAMEPLATE. (3) PART NUMBER AND NAME AS GIVEN BELOW.—

# THE JACOBS "HEX-KEY" CHUCK

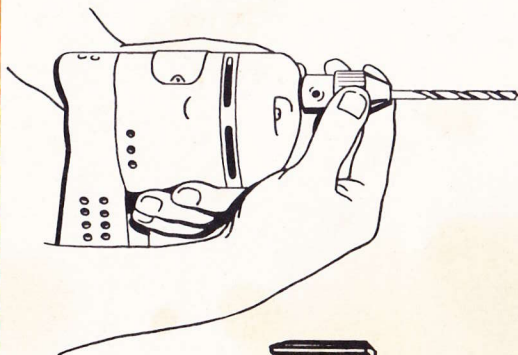
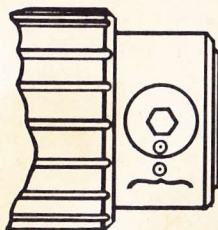


Figure 1



The quick acting Jacobs "hex-key" chuck is a good general purpose chuck built to the "Jacobs" standard of quality. Keep the hex-key in a convenient place and re-order at once if you lose it (Cat. No. 20530). Keep chuck jaws clean and free from grease—the sleeve may be screwed off for cleaning purposes. If the chuck jaws require replacement, a set of jaws can be ordered without buying the complete chuck (See parts list on page 4).

Operation:—First, insert key and turn the key socket so as to align the zero mark on the key socket with the zero mark on the chuck body, as shown in Fig. 1. Second, adjust jaws to drill size by turning fluted sleeve, insert drill and tighten sleeve lightly. Third, turn the key in either direction to lock so that the key socket assumes either position shown in Fig. 2.

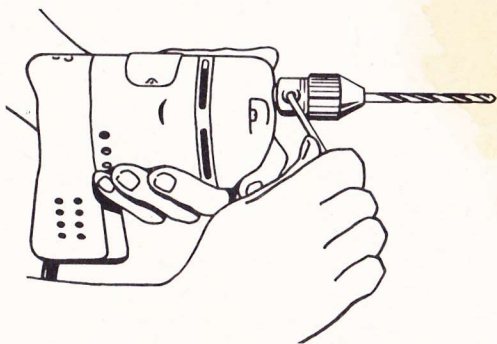
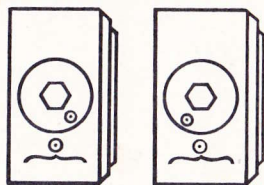


Figure 2



To release the chuck, turn the key in opposite direction so that zero mark assumes original position as shown in Fig. 1. The sleeve can then be turned to release the drill.

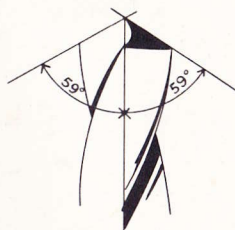
To obtain maximum life of the jaw assembly, lock your chuck firmly with the key to prevent drill slippage, and when the chuck is not in use, leave it with the jaws open.

# DECIMAL EQUIVALENTS - TAP DRILL SIZES

Fractional Size Drills Inches	Wire Gauge Drills	Decimal Equivalent Inches	Tap Sizes	
			Size of Threads Thread per inch	
<b>1/16</b>	----	<b>.0625</b>		
	52	.0635		
	51	.0670		
	50	.0700	2	{ 56 64
49	.0730			
<b>5/64</b>	48	.0760		
	----	<b>.0781</b>		
	47	.0785	3	48
	46	.0810		
	45	.0820	3	56
	44	.0860		
43	.0890	4	40	
42	.0935			
<b>3/32</b>	----	<b>.0937</b>		
	41	.0960		
	40	.0980		
	39	.0995		
	38	.1015	5	40
37	.1040			
36	.1065	6	32	
<b>7/64</b>	----	<b>.1094</b>		
	35	.1100		
	34	.1110		
	33	.1130	6	40
	32	.1160		
31	.1200			
<b>1/8</b>	----	<b>.1250</b>		
	30	.1285		
	29	.1360	8	{ 32 36
	28	.1405		
<b>9/64</b>	----	<b>.1406</b>		
	27	.1440		
	26	.1470		
	25	.1495	10	24
	24	.1520		
	23	.1540		

Fractional Size Drills Inches	Wire Gauge Drills	Decimal Equivalent Inches	Tap Sizes	
			Size of Threads Thread per inch	
<b>5/32</b>	----	<b>.1562</b>		
	22	.1570		
	21	.1590	10	32
	20	.1610		
	19	.1660		
18	.1695			
<b>11/64</b>	----	<b>.1719</b>		
	17	.1730		
	16	.1770	12	24
	15	.1800		
	14	.1820	12	28
13	.1850			
<b>3/16</b>	----	<b>.1875</b>		
	12	.1890		
	11	.1910		
	10	.1935		
	9	.1960		
8	.1990			
<b>13/64</b>	7	.2010	1/4	20
	6	.2040		
	5	.2055		
	4	.2090	1/4	28
	3	.2130		
<b>7/32</b>	----	<b>.2187</b>		
	2	.2210		
	1	.2280		
<b>15/64</b>		.2340		
		<b>.2344</b>		
		.2380		
		.2420		
<b>1/4</b>		.2460		
		<b>.2500</b>		
		.2540		

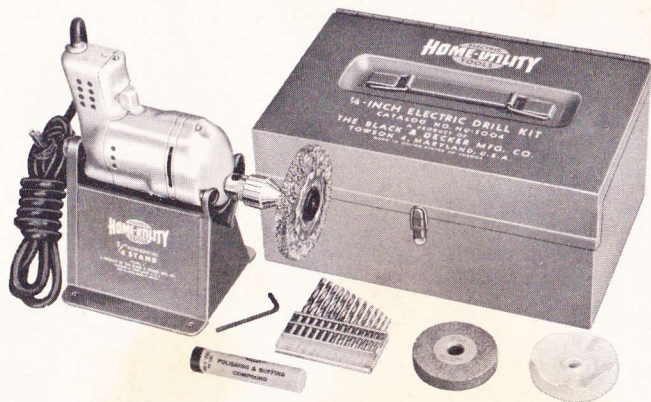
TAP DRILL SIZES BASED ON 75% MAXIMUM THREAD



The Twist Drill most commonly used for "general purpose" work has the cutting lips ground to a 59° angle. These lips must be kept sharp and of equal length—with the point in "dead" center—or the drill will cut a rough, uneven hole.

The Drill Bit should be lubricated when drilling all types of ferrous metal except cast iron. In non-ferrous metals a coolant is desirable to reduce friction heat and prolong bit life.

# 1/4-INCH HOME UTILITY DRILL KIT



## 1/4" ELECTRIC DRILL KIT Catalog No. HU-1004

The Home-Utility 1/4" Electric Drill and a highly versatile group of accessories are assembled in this fitted metal carrying kit. The following is included:

- 1—Home-Utility 1/4" Electric Drill (Cat. No. HU-1)
- 13—High Speed Drill Bits, 1/16" to 1/4" inclusive
- 1—Horizontal Stand (Cat. No. HU-2302)
- 1—4" Coarse Wire Wheel Brush (Cat. No. HU-1201)
- 1—3" General Purpose Grinding Wheel
- 1—3" Cotton Buffing Wheel
- 1—Tube of Polishing and Buffing Compound (Cat. No. HU-2199)
- 1—Wheel Arbor (1/2" Diam., 1/4" Shank) (Cat. No. HU-2206)

Job applications of this Kit are numerous and include—Drilling, sharpening, grinding, cleaning, buffing, burnishing, and the removal of rust, scale and old paint.

The Kit box is of formed steel with supports for holding each piece in place while being carried or used as a storage box.



# DRILL STANDS

## 1/4" BENCH STAND (Vertical)

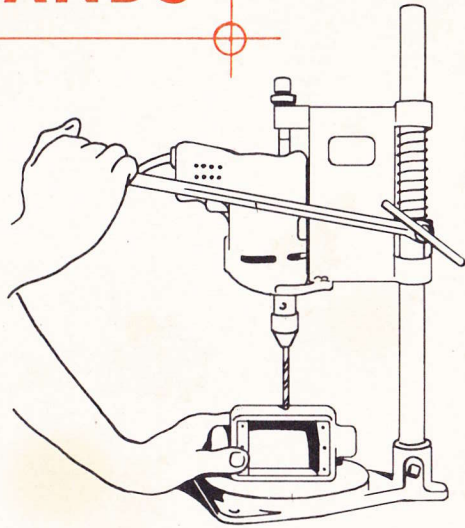
To use your 1/4" Home-Utility Drill as a Drill Press, merely place the Chuck end of the Drill in the Yoke at the bottom of the drill bracket and screw the adjustable clamp into the socket provided on the handle end of the drill housing. The base is screwed to the bench and the bracket can be adjusted to any height from the base and swung around to any desired position. The feed-handle leverage gives you extra force for tough drilling and feeds smoothly for delicate work.

Cat. No. HU-2300

Weight: 11 3/4 lbs.

1/4-inch Bench Stand only

Height 19 7/8"



## 1/4" HORIZONTAL STAND

The Horizontal Stand with your Home-Utility 1/4" Drill frees both hands for applying the work in using grinding wheels, wire wheel brushes, buffing wheels, abrasive accessories and in other operations where a stationary Drill attachments are used. Mounting the tool takes only a few seconds—place the Chuck end of the Drill in its yoke and tighten the clamping screw which fits into a socket on the handle-end of the Drill.

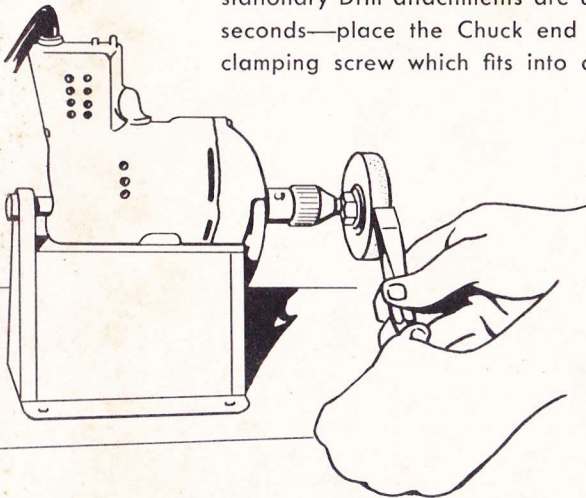
Screw the Horizontal Stand to a bench and you are ready for work. See the next four pages of this booklet for some of the many applications of this stand.

The Horizontal Stand is included in the 1/4-inch Home-Utility Drill Kit shown on the page to your left, and is also available as a separate accessory for your 1/4" Home-Utility Drill.

Catalog No. HU-2302 1/4" Horizontal Stand only

Length 6 1/2"

Weight 2 1/4 lbs.



# THE BUFFING & POLISHING KIT



THIS ACCESSORY KIT greatly increases the versatility of the Home Utility  $\frac{1}{4}$ " Drill. The wheel arbor fits a  $\frac{1}{4}$ " chuck and carries the buffing wheel, wire wheel brush or grinding wheel shown above in the Buffing & Polishing Kit. Use these accessories for jobs requiring cleaning, buffing, burnishing, sharpening, grinding, and the removal of rust, scale and old paint.

**Each kit contains:**

- 1—3" Cotton Buffing Wheel ( $\frac{1}{2}$ " Arbor Hole)
- 1—4" Wire Wheel Brush ( $\frac{1}{2}$ " Arbor Hole)
- 1—3" General Purpose Grinding Wheel ( $\frac{1}{2}$ " Arbor Hole)
- 1—Tube of Polishing and Buffing Compound
- 1—Wheel Arbor ( $\frac{1}{2}$ " Diam.,  $\frac{1}{4}$ " Shank)

Catalog No. HU-1002, BUFFING & POLISHING KIT

Any one of the three wheels in this Kit may be mounted or removed from the wheel arbor in a minute or two. Be sure that the arbor is held firmly in the Drill chuck and also that the wheel arbor nut clamps tight on the wheel.

Some applications are as follows:

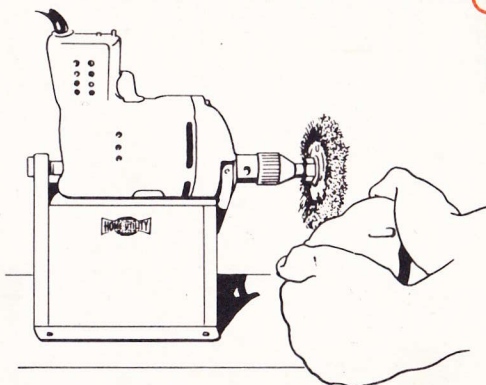
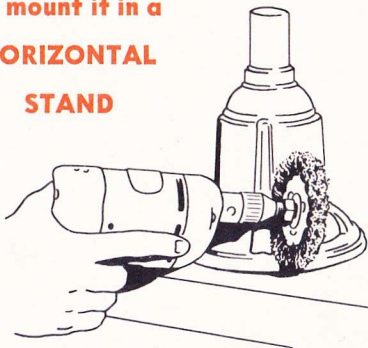
**Wire Wheel Brush:** Removing rust, scale and old paint. Metal burnishing.

**Grinding Wheel:** Sharpening knives and tools. Removing burrs. General light grinding.

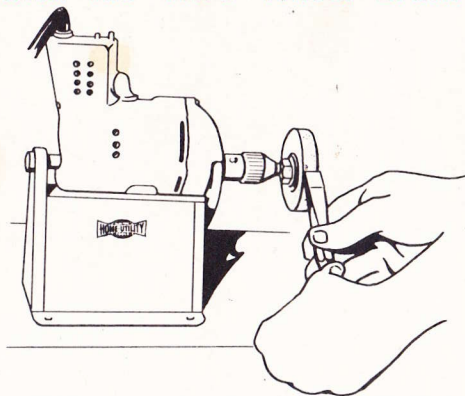
**Buffing Wheel:** Polishing jewelry, household hardware, metal fittings, silverware and metal toys.

If a Horizontal Stand is used with these accessories it should be screwed to the bench with the wheels operating on the right as shown in the illustrations. Use reasonable care in operating all these accessories to avoid injuries and damage to work.

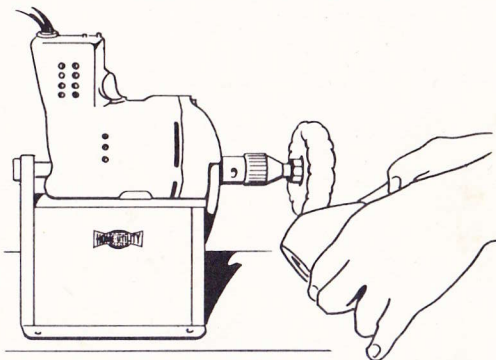
**Hold the Drill  
in your Hand  
or mount it in a  
HORIZONTAL  
STAND**



**CLEAN - BUFF - BURNISH  
with the Wire Wheel Brush**



**SHARPEN and GRIND  
with the Grinding Wheel**



**BUFF and POLISH  
with the Buffing Wheel**

# ABRASIVE KIT



TO MEET many specific requirements in handicraft and light repair work this Abrasive Kit is a "natural." It includes a well-planned assortment of coarse and fine abrasive accessories with four arbors for a  $\frac{1}{4}$ " chuck. Job applications include the rough cleaning and finish sanding of flats, curves, irregular surfaces and intricate designs.

#### Each kit contains:

- 4—1" dia. x 1" long Abrasive Bands (2 coarse; 2 fine)
- 4— $\frac{3}{4}$ " dia. x  $\frac{3}{4}$ " long Abrasive Bands (2 coarse; 2 fine)
- 4— $\frac{1}{2}$ " dia. x  $\frac{1}{2}$ " long Abrasive Bands (2 coarse; 2 fine)
- 3—Abrasive Rolls (1 cone and 2 cylinders)
- 4—Arbors to accommodate above abrasives

Catalog No. HU-1003, ABRASIVE KIT

## ROUGH CLEANING

and

## FINISH SANDING

of

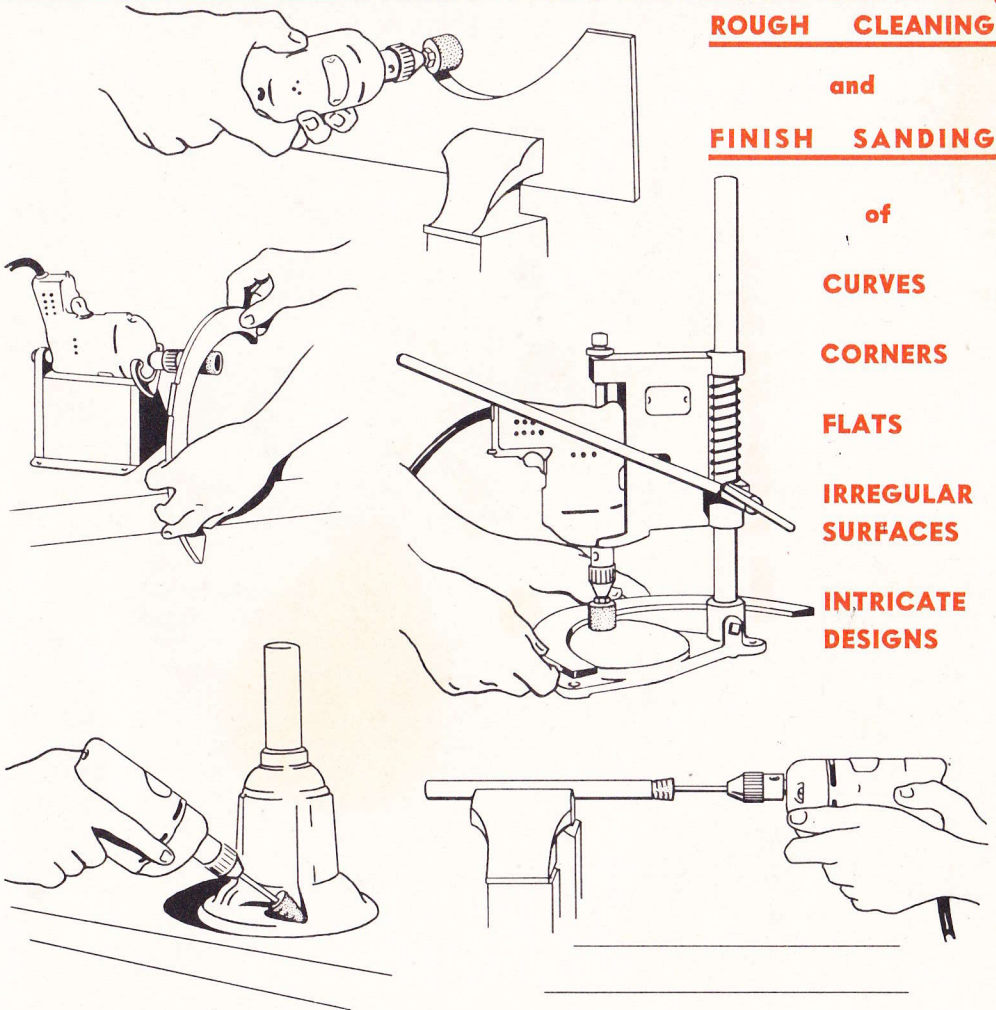
**CURVES**

**CORNERS**

**FLATS**

**IRREGULAR  
SURFACES**

**INTRICATE  
DESIGNS**



A  $\frac{1}{4}$ " Chuck will accommodate the three different sized Drum Arbors which in turn hold the Abrasive Bands during cleaning and sanding operations. The drum of these arbors is of the expanding rubber type and when the arbor clamp nut is tightened the Abrasive Band is held securely on the arbor.

The three Abrasive Rolls are screwed directly on the end of the threaded arbor and may be "peeled" to expose a fresh surface as the abrasive is worn away.

Only light working pressure is required for cleaning and sanding—let the Drill and Abrasive do the work.

## ADDITIONAL ACCESSORIES FOR HOME-UTILITY 1/4" DRILL

Other accessories not illustrated in this booklet for performing sanding, polishing, cleaning and rubbing operations are also available at your hardware or electrical store. These attachments may quickly replace the chuck on this tool to give it greater versatility in numerous home, farm and hobby shop applications such as:

**SANDING**—To convert your 1/4" Drill to a power sander, a 5" Moulded Rubber Pad (Cat. No. HU-1300) and 3 grades of 5" Sanding Discs are available as accessories. The Moulded Rubber Pad has a stud which screws directly into the 1/4" Drill Spindle in the same manner as its chuck. A screw and clamp washer are included with the Pad so that Sanding Discs may be attached.

**POLISHING**—With the Moulded Rubber Pad mentioned above and a 5" Lambswool Bonnet (Cat. No. HU-1310) all types of polishing and waxing may be performed with the 1/4" Drill. The Lambswool Bonnet has a hood and drawstring which fastens it securely over the Moulded Rubber Pad.

**WIRE CUP BRUSHING**—For the removal of rust, scale and old paint a 4" Wire Cup Brush with stud (Cat. No. HU-1220) may be screwed directly into the 1/4" Drill Spindle.

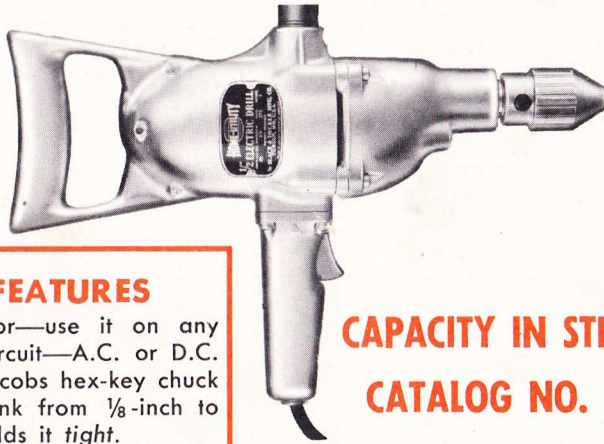
**LACQUER RUBBING**—For rubbing down "orange peel" and spray pits in newly lacquered surfaces a 5" Pile Fabric Pad (Cat. No. HU-1301) is available. This pad is attached to the Moulded Rubber Pad with the screw and clamp washer in the same manner as a Sanding Disc.

**DISC SANDING TABLE ATTACHMENT**—If you already have a Horizontal Stand (HU-2302) for your 1/4" Drill, a Disc Sanding Table Attachment is available which provides all of the convenience and accuracy of Sanding Table operation. This attachment includes a 5" Metal Sanding Plate, "clamp on" Sanding Table, 3 Sanding Discs (coarse—medium—fine), Mitre Gage and Tube of Disc Cement for cementing Sanding Disc to sanding plate. Material removal is rapid because of solid backing to the sanding disc and accuracy is increased due to support and guidance of the work.

### THE HOME-UTILITY GUARANTEE

"EVERY BLACK & DECKER product has been carefully inspected before shipment, and we guarantee to correct any defect caused by faulty material or workmanship. Our obligation assumed under this guarantee is limited to the replacing of any part or parts which prove to our satisfaction, upon examination, to have been defective, and which have not been misused or carelessly handled. The complete unit must be returned to one of our Factory Service Branches or to our Factory, transportation charges prepaid. We reserve the right to decline responsibility where repairs have been made or attempted by others. No other guarantee, written or verbal, is authorized on our products."

# HOME-UTILITY 1/2" ELECTRIC DRILL



## USE-FUL FEATURES

1. "Universal" motor—use it on any standard light circuit—A.C. or D.C.
2. Fast-operating Jacobs hex-key chuck—holds any shank from 1/8-inch to 1/2-inch—and holds it tight.
3. Correct spindle speed for all-purpose drilling, wood-boring. Hole Saw cutting.
4. Strong, light aluminum housings; reduce weight, stand hard use.
5. Instant-release "trigger" switch—easy to operate, safe to use. Can be locked "ON" if desired.
6. 3-wire electric cord; 3rd wire for ground connection to protect from shock.
7. Spade handle and removable pipe handle for best control and faster work.
8. Double-duty—use as portable Drill and in Bench Stand as a drill press.

## CAPACITY IN STEEL - 1/2" CATALOG NO. HU-20

Drill in all kinds of materials—in sizes from 1/8" to 1/2" with this practical tool. Drive wood-augers up to 7/8" and Hole Saws up to 2 1/2".

On the Farm it has extra capacity for drilling larger holes in machinery, construction and repair work. In the Home Work Shop it makes a handy drill press in the Bench Stand. Out on the job it handles hundreds of installation, maintenance and repair jobs. This 1/2" Electric Drill is 15 5/8" long; weighs 9 1/2" lbs.; has a no-load spindle speed of 375 R.P.M.

## 1/2-INCH BENCH STAND for 1/2-INCH PORTABLE ELECTRIC DRILL

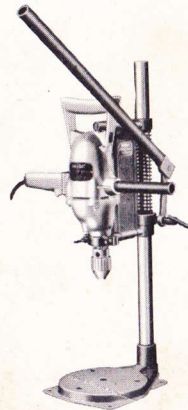
THIS STAND increases the usefulness of the 1/2-inch Portable Drill; improves the accuracy of its work and makes it possible to apply more power, more steadily and under better control. The Drill fits into the Stand in a few seconds and is removed just as quickly; the usefulness of the portable tool is not impaired in any way. The bracket slides on the supporting column for adjustment to suit size of work and can be swung to any position, on or off the base. The feed handle operates smoothly for delicate work and has enough leverage to supply a lot of extra power on tough drilling. By using the Bench Stand, you free one hand to guide the work and lubricate the cutting operation. The Stand is especially effective in Hole Saw cutting and in the correct spacing of multiple holes in a strip or plate.

Cat. No. HU-2301

Weight: 15 3/4 lbs.

1/2-inch Bench Stand Only

Height: 29"



# ELECTRIC **HOME-UTILITY** TOOLS

## SERVICE

For expert "factory" repairs to your Home-Utility tool, send it (or have your dealer send it) to the most convenient of our Factory Service Branches listed below. All of these are equipped with genuine replacement parts, the correct tools and the "know-how" to give you prompt, efficient service.



### FACTORY SERVICE BRANCHES

ATLANTA, 3, GA...316 TECHWOOD DRIVE, N.W.  
BALTIMORE, 1, MD....1311 MARYLAND AVE.  
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CHICAGO, 16, ILL....2009 S. MICHIGAN AVE.  
CLEVELAND, 15, OHIO, 21st at CARNEGIE AVE.  
DALLAS, 1, TEXAS.....2613 ROSS AVE.  
DENVER, 2, COLO.....708 EIGHTEENTH ST.  
DETROIT, 2, MICH....3028 E. GRAND BLVD.  
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SEATTLE, 9, WASH....434 EIGHTH AVE, N.  
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## THE BLACK & DECKER MFG. CO.

"Electric Tool Headquarters"

### TOWSON 4, MARYLAND, U. S. A.