Oscillating Spindle Sander

Model : 3501-03

GENERAL SAFETY RULES

1. FOR YOUR SAFETY READ THE INSTRUCTION MANUAL BEFORE OPERATION

2. KEEP GUARDS IN PLACE, AND IN WORKING ORDER.

3. MAKE A HABIT OF CHECKING TO SEE THAT TOOLS AND MATERIALS ARE REMOVED FROM THE MACHINE BEFORE TURNING IT ON. CLUTTERED AREAS AND BENCHES INVITE ACCIDENTS. KEEP WORK AREA CLEAN.

4. KEEP WORK AREA WELL LIT.

5. DO NOT USE POWER TOOLS IN DAMP, OR WET AREAS, OR EXPOSE THEM TO RAIN.

6. KEEP CHILDREN AWAY. MAKE THE WORKSHOP CHILDPROOF WITH PADLOCKS, MASTER SWITCHES, OR BY REMOVING STARTER KEYS.

7. ALL VISITORS SHOULD BE KEPT AT A SAFE DISTANCE FROM THE WORK AREA.

8. DO NOT FORCE THE TOOL, USE THE RIGHT ACCESSORIES. TOOLS AND ACCESSORIES WILL DO THE WORK BETTER AND SAFER IN THE JOBS FOR WHICH THEY WERE DESIGNED.

9. WEAR PROPER APPAREL. DO NOT WEAR LOOSE CLOTHING, GLOVES, NECKTIES, RINGS, BRACELETS, OR OTHER JEWELRY WHICH MAY GET CAUGHT IN MOVING PARTS.

10. DON'T OVERREACH. KEEP PROPER FOOTING AND BALANCE AT ALL TIMES. NON-SLIP FOOTWEAR IS RECOMMENDED.

11. WEAR PROTECTIVE HAIR COVERING TO CONTAIN LONG HAIR.

12. USE DUST MASKS.

13. ALWAYS USE SAFETY GLASSES, REGULAR EYEGLASSES ARE NOT SAFETY GLASSES.

14. SECURE YOUR WORK, USE CLAMPS OR A VISE TO HOLD WORK WHEN PRACTICAL. IT IS SAFER THAN USING YOUR HAND, AND IT FREES YOUR HANDS TO OPERATE THE TOOL.

15. MAINTAIN YOUR TOOLS, KEEP TOOLS SHARP AND CLEAN FOR BEST AND SAFEST OPERATION.

16. FOLLOW INSTRUCTIONS FOR LUBRICATING MACHINERY, AND CHANGING ACCESSORIES.

17. AVOID ACCIDENTAL STARTING; MAKE SURE THE SWITCH IS IN THE OFF POSITION BEFORE PLUGGING IN. DISCONNECT TOOLS BEFORE SERVICING, OR WHEN CHANGING ACCESSORIES SUCH AS BLADES, BITS, CUTTERS, ETC.

18. NEVER STAND ON MACHINERY; SERIOUS INJURY MAY OCCUR.

19. BEFORE USING THE TOOL, ANY PART THAT IS DAMAGED SHOULD BE INSPECTED TO DETERMINE THAT IT WILL OPERATE PROPERLY, AND PERFORM ITS INTENDED FUNCTION. CHECK FOR ALIGNMENT, OR BINDING OF MOVING PARTS, BROKEN PARTS, OR ANY OTHER CONDITION WHICH MAY AFFECT ITS OPERATION. A PART THAT IS DAMAGED SHOULD BE PROPERLY REPAIRED OR REPLACED.

20. FEED WORK INTO A BLADE OR CUTTER ONLY AGAINST THE DIRECTION OF ROTATION OF THE BLADE OR CUTTER.

21. BEFORE CONNECTING THE MACHINE TO THE POWER SOURCE, MAKE SURE THE MOTOR IS COMPATIBLE WITH THE POWER SOURCE.

22. NEVER LEAVE A MACHINE RUNNING UNATTENDED, TURN THE POWER OFF. DO NOT LEAVE THE MACHINE UNTIL IT COMES TO A COMPLETE STOP.

23. DO NOT OPERATE MACHINERY WHILE UNDER THE INFLUENCE OF DRUGS, ALCOHOL, OR MEDICATION.

GROUNDING

1. IN THE EVENT OF A MALFUNCTION OR BREAKDOWN, GROUNDING PROVIDES A PATH OF LEAST RESISTANCE FOR ELECTRIC CURRENT TO REDUCE THE RISK OF ELECTRIC SHOCK. THIS TOOL IS EQUIPPED WITH AN ELECTRIC CORD HAVING AN EQUIPMENT-GROUNDING CONDUCTOR WHICH MUST BE CONNECTED WITH A MATCHING OUTLET THAT IS PROPERLY INSTALLED AND GROUNDED IN ACCORDANCE WITH ALL LOCAL CODES AND ORDINANCES.

2. DO NOT MODIFY THE PLUG PROVIDED, IF IT WILL NOT FIT THE OUTLET, HAVE THE PROPER OUTLET INSTALLED BY A QUALIFIED ELECTRICIAN.

3. THE CONDUCTOR WITH INSULATION HAVING AN OUTER SURFACE THAT IS GREEN, WITH OR WITHOUT YELLOW STRIPE IS THE EQUIPMENT-GROUNDING CONDUCTOR. IF REPAIR OR REPLACEMENT OF THE ELECTRIC CORD IS NECESSARY, DO NOT CONNECT THE EQUIPMENT-GROUNDING CONDUCTOR TO A LIVE TERMINAL.

4. CHECK WITH A QUALIFIED ELECTRICIAN IF THE GROUNDING INSTRUCTIONS ARE NOT COMPLETELY UNDERSTOOD, OR IF IN DOUBT AS TO WHETHER THE TOOL IS PROPERLY GROUNDED.

5. REPAIR OR REPLACE DAMAGED OR WORN CORD IMMEDIATELY.

SANDER SAFETY RULES

1. SUPPORT THE WORK-PIECE WITH THE WORK TABLE.

2. HOLD THE WORK FIRMLY, SO THAT IT WILL NOT BE JERKED OUT OF YOUR HANDS.

3. EXCESSIVE PRESSURE AGAINST THE SANDING SLEEVE IS NOT NECESSARY. IT WILL RESULT IN DAMAGE TO THE SPINDLE OR WORK-PIECE.

4. FEED THE WORK-PIECE AGAINST THE ROTATION OF THE SPINDLE.

5. MAINTAIN A 4" MARGIN OF SAFETY WHEN SANDING. IF A PART IS TOO SMALL TO ALLOW THIS MARGIN; DESIGN AND BUILD A JIG OR FIXTURE TO HOLD THE WORK-PIECE.

6. FAMILIARIZE YOURSELF, THOROUGHLY, WITH THE SECTION ON "LUBRICATION AND MAINTENANCE".

THE S 3407 IS IDEAL FOR SANDING HOLES, CURVES, AND OTHER IRREGULAR SHAPES IN A VARIETY OF MATERIALS INCLUDING WOOD, PLASTIC, AND SOME SOFT, FERROUS, AND NON-FERROUS METALS.

SPECIFICATIONS - 3501

TABLE	24" X 24", TILTS 45° DOWN AND 20° UP.
FLOOR TO TABLE HEIGHT	35-1/2".
SPINDLE SIZES	1/4" X 5"; 3/8", 1/2", & 5/8" X 6"; 3/4", 1", 1-1/2, 2", 3", & 4" X 9".
SPINDLE SPEED	1725 RPM.
OSCILLATIONS	75 OSCILLATIONS PER MINUTE X 1-1/2" IN LENGTH.
DUST EXHAUST HOOD	INSTALLED. SIZE: 4" HOSE CONNECTION.
MOTOR	1 H.P., 110V/14 AMPS, 220V/7 AMPS, 1725RPM, DIRECT DRIVE, SINGLE PHASE.
APPROXIMATE SHIPPING WEIGHT	385 LBS.

INSIDE THE SHIPPING CONTAINER WILL BE FOUND TWO WRENCHES, THREE DIFFERENT SIZED TABLE INSERTS, AND TEN ASSORTED-SIZE SPINDLES WITH 100 GRIT SANDING SLEEVES INSTALLED. DO NOT DISCARD PACKING MATERIAL UNTIL THE SANDER IS FULLY ASSEMBLED AND OPERATIONAL.
(SEE FIGURE 1.)

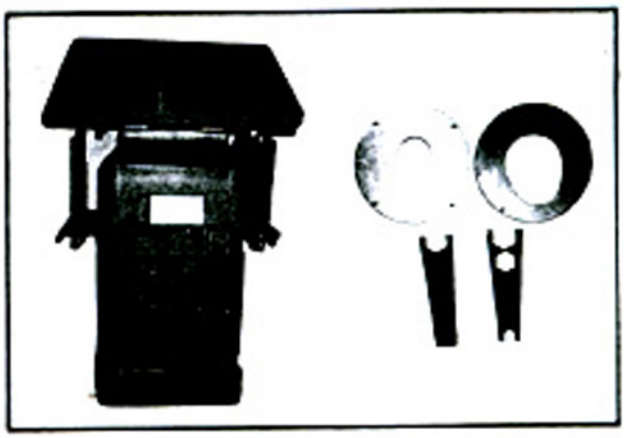


FIG 1.

THE 3501 LEAVES THE FACTORY COMPLETELY ADJUSTED. HOWEVER, A CHECK OF ALL COMPONENTS IS RECOMMENDED, BOTH TO FAMILIARIZE YOURSELF WITH THE MACHINE AND TO ASSURE THAT EVERYTHING IS IN WORKING ORDER AND STILL PROPERLY ALIGNED.

ASSEMBLY

1. THERE IS NO PRE-OPERATION ASSEMBLY REQUIRED OF THE 3501

2. AFTER REMOVING THE RUST INHIBITING PROTECTIVE COATING WITH A NON-FLAMMABLE SOLVENT, CLEAN ALL PAINTED SURFACES, AND COAT ALL MACHINED SURFACES WITH A GOOD QUALITY PASTE WAX AS DESCRIBED IN THE SECTION ON LUBRICATION AND MAINTENANCE.

SANDER OPERATIONS

1. BEFORE STARTING THE MACHINE CHECK THE OIL BY UNSCREWING THE OIL FILLER CAP/DIPSTICK UNDERNEATH THE FRONT OF THE TABLE. (SEE FIGURE 2, & 3.)

FIG 2.

FIG 3.

2. MARK THE SHAPE DESIRED ON THE WORK-PIECE.

3. FROM THE STORAGE SHELF CHOOSE A SPINDLE THAT IS SLIGHTLY SMALLER THAN THE CURVE TO BE SANDED. (SEE FIGURE 4.)

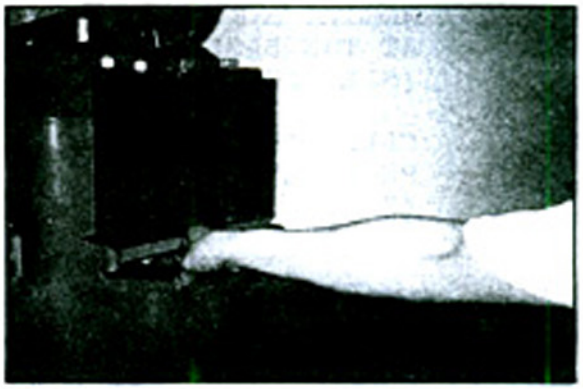


FIG 4.

4. REMOVE THE HEX NUT HOLDING THE SPINDLE ON THE STORAGE SHELF.

5. **AFTER COMPLETING YOUR SANDING TASK REMOVE THE WORKING SPINDLE FROM THE SHAFT, AND REPLACE ON THE STORAGE SHELF. CONTINUOUS USAGE WILL FREEZE THE SANDING SPINDLE TO THE SHAFT AND MAKE IT VERY DIFFICULT TO REMOVE THE SPINDLE.**

6. IN ORDER TO SAND ELLIPTICAL SHAPES, LOOSEN THE LOCK KNOB UNDER THE TABLE, TILT THE WORKING TABLE TO THE DESIRED ANGLE, AND RE-TIGHTEN THE LOCK KNOB. (SEE FIGURE 5.)

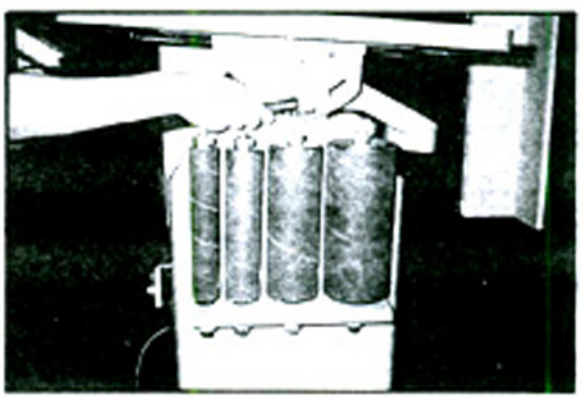


FIG 5.

SPINDLE REPLACEMENT

1. TILT THE TABLE TO REACH THE SPINDLE RETAINING HEX NUT. (SEE FIGURE 6.)

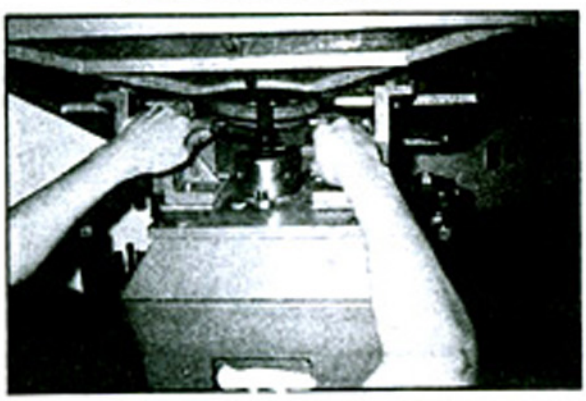


FIG 6.

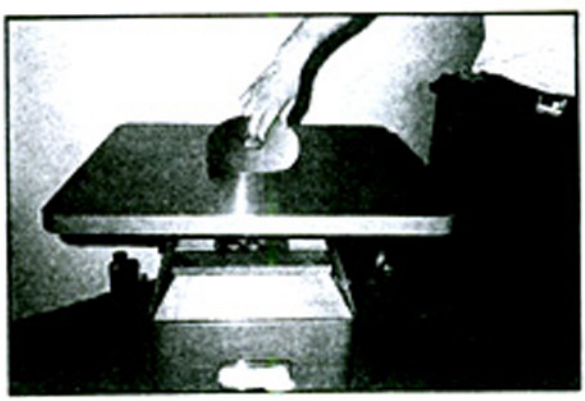


FIG 7.

2. REMOVE THE SPINDLE INSTALLED BY REMOVING THE RETAINING HEX NUT AT THE BASE.
(SEE FIGURE 7 ABOVE.)

3. CLEAN THE SPINDLE ARBOR, AND SPINDLE ARBOR SHAFT BEFORE RE-ASSEMBLY.
(SEE FIGURE 8, & 9.)

FIG 8.

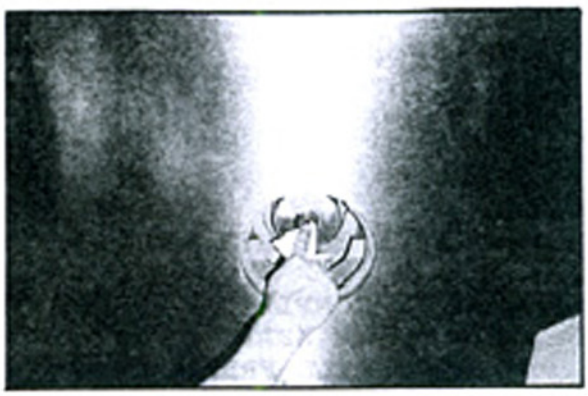


FIG 9.

4. RE-ASSEMBLE, BUT DO NOT OVER-TIGHTEN THE RETAINING HEX NUT.

5. RE-ADJUST THE TABLE TO THE PROPER WORKING CONFIGURATION.

SANDING SLEEVE REPLACEMENT

1. UNSCREW THE HEX NUT AT THE TOP OF THE WORKING SPINDLE, SLIP THE SANDING SLEEVE FROM THE SPINDLE.

2. SLIDE THE NEW SANDING SLEEVE ON TO THE WORKING SPINDLE, REPLACE THE HEX NUT, AND TIGHTEN.

3. WHEN ONE END OF YOUR SANDING SLEEVE HAS BEEN USED EXTENSIVELY, TURN IT END FOR END AND RE-INSTALL.
(SEE FIGURE 10, & 11.)

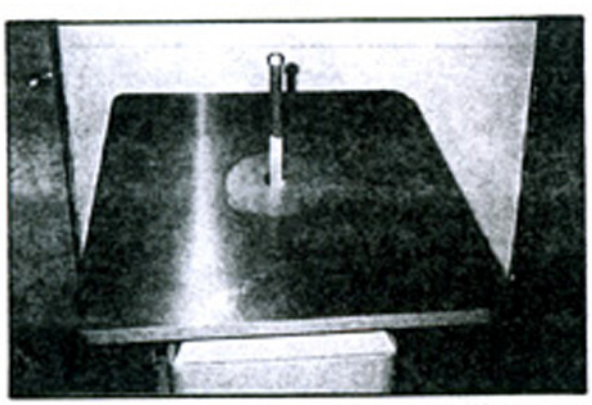


FIG 10.

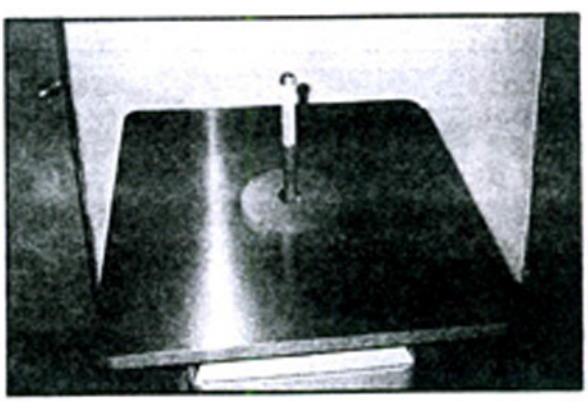


FIG 11.

LUBRICATION AND MAINTENANCE

1. DISCONNECT THE SANDER FROM THE POWER SOURCE.

2. THE DRIVE BEARINGS ARE SEALED AND DO NOT REQUIRE LUBRICATION, BUT THEY SHOULD BE KEPT CLEAN.

3. CLEAN TABLE TOPS ANNUALLY WITH AN AMMONIA AND DETERGENT MIXTURE. TABLE SURFACES SHOULD BE WAXED WITH A GOOD QUALITY PASTE WAX.

4. CLEAN AND LUBRICATE THE TABLE ADJUSTMENT HARDWARE AT LEAST TWICE A YEAR.

5. USING 80 WEIGHT GEAR OIL REPLACE THE LUBRICATING OIL EVERY 750 HOURS. THE OIL FILLING CAP/DIPSTICK (# 18) IS BENEATH THE TABLE. THE LUBRICATING OIL DRAIN PLUG (# 42) IS AT THE REAR OF THE STAND BENEATH THE TABLE.

6. EVERY 750 HOURS, USING #3 GREASE IN A REGULAR GREASE GUN WITH A # 22 X 1/16PT TIP, GREASE THE SPINDLE ROTATING MECHANISM AT THE ZERK FITTING (# 22) NEXT TO THE OIL DIP STICK (# 18), BENEATH THE TABLE. SEE FIGURE 12 BELOW.

7. IT IS RECOMMENDED THAT #'s 5 & 6 ABOVE BE ACCOMPLISHED CONCURRENTLY.

8. NEXT TO THE GREASE FITTING UNDER THE TABLE YOU WILL FIND A BRASS AIR-RELEASE VALVE, THE PURPOSE OF THIS VALVE IS TO ALLOW AIR TO BE RELEASED FROM THE GEAR OIL-BATH DURING OPERATION. DURING SHIPMENT THIS VALVE IS CLOSED TO PREVENT OIL FROM ESCAPING. BEFORE OPERATION TURN THE VALVE 1/4 TO 1/2 TURN TO ALLOW EXCESS AIR PRESSURE TO ESCAPE. SEE FIGURE 13 BELOW.

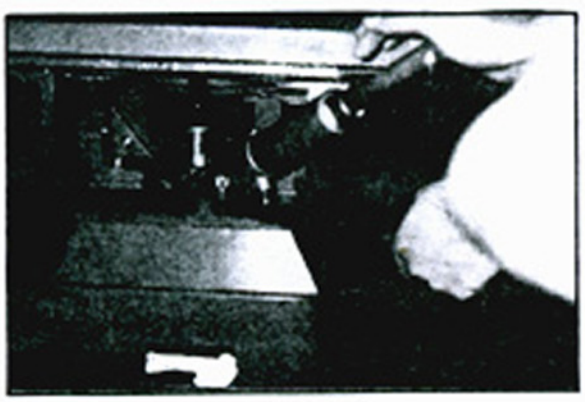


FIG 12.

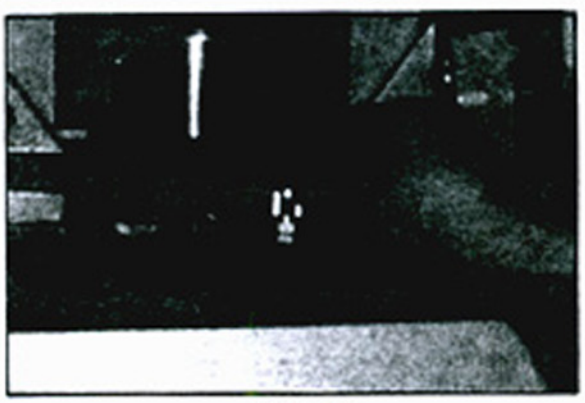


FIG 13.

WIRING DIAGRAM

1. THE 3301 IS PRE-WIRED FOR 110V. FOR 220V OPERATION PLEASE REFER TO FIGURE 14. IF YOU ARE UNCERTAIN ABOUT THE PROPER PROCEDURE PLEASE CONTACT AN TECHNICIAN, OR AN AUTHORIZED ELECTRICIAN.

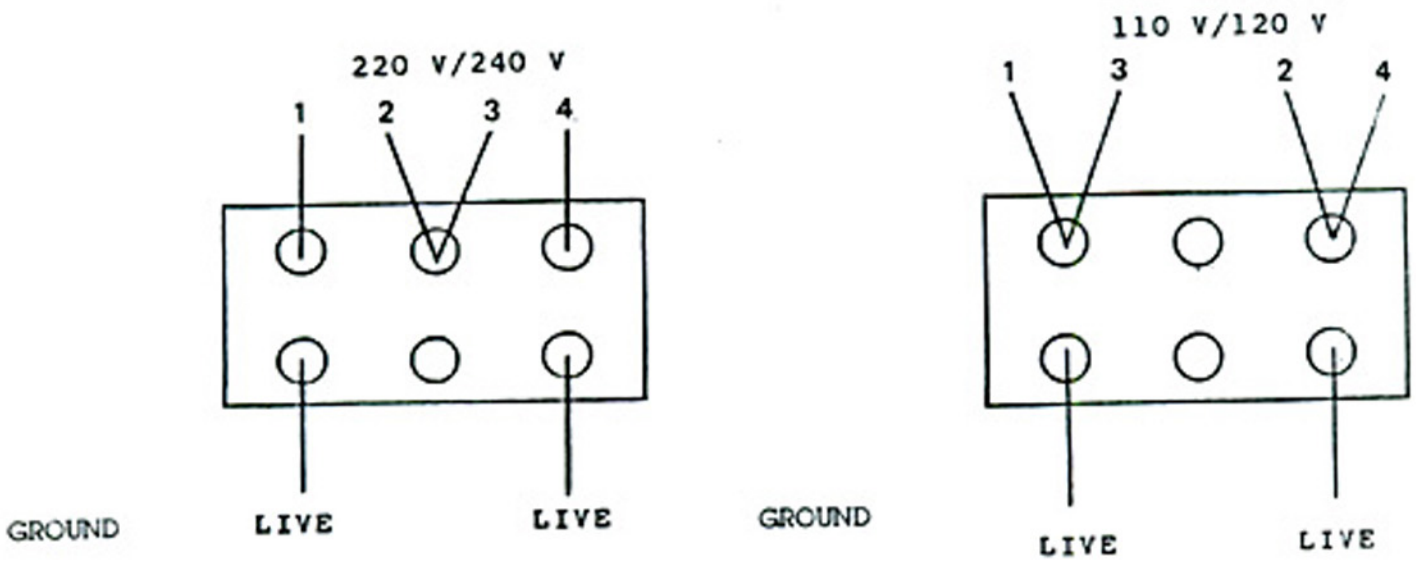
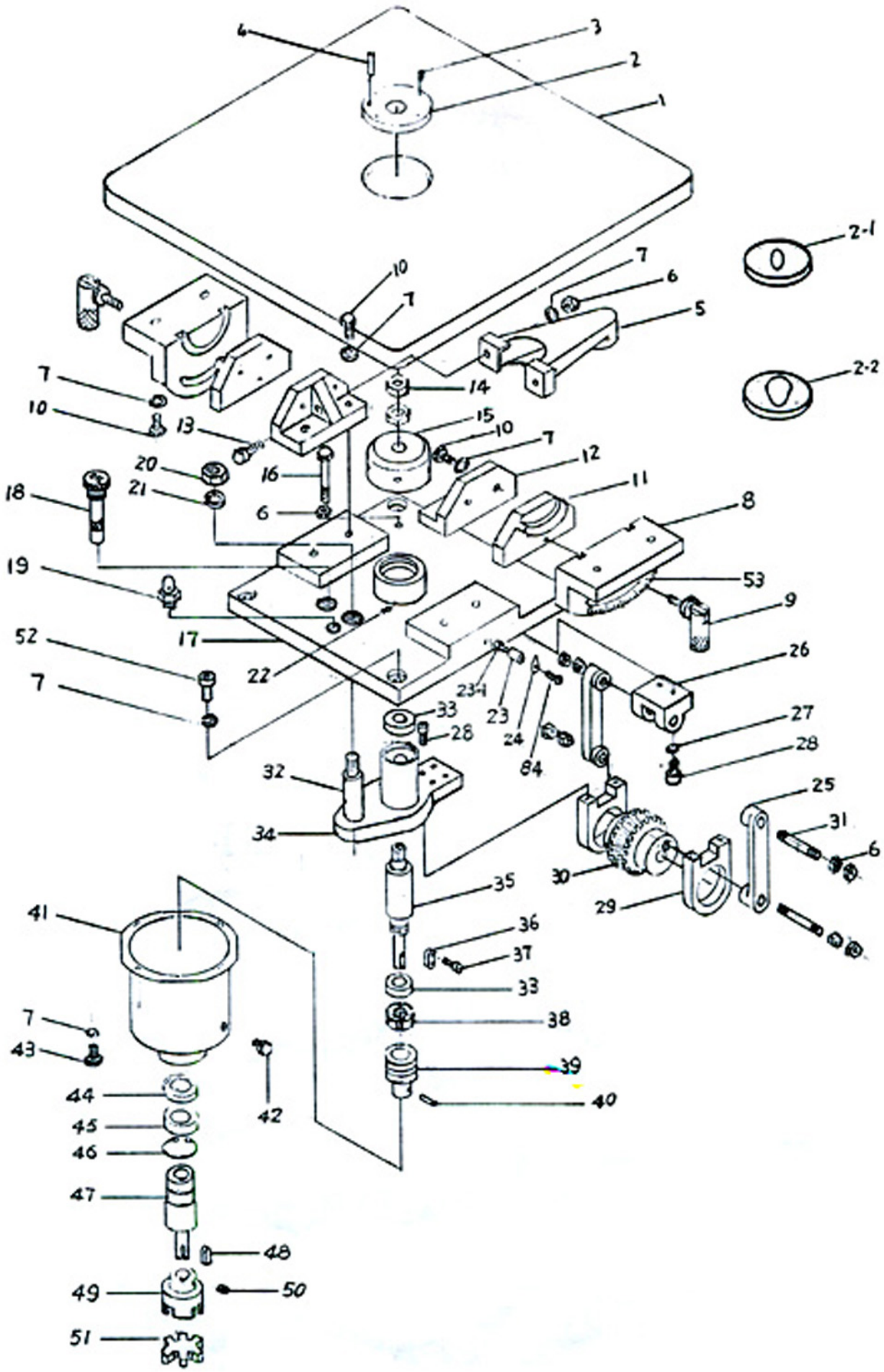


FIG 14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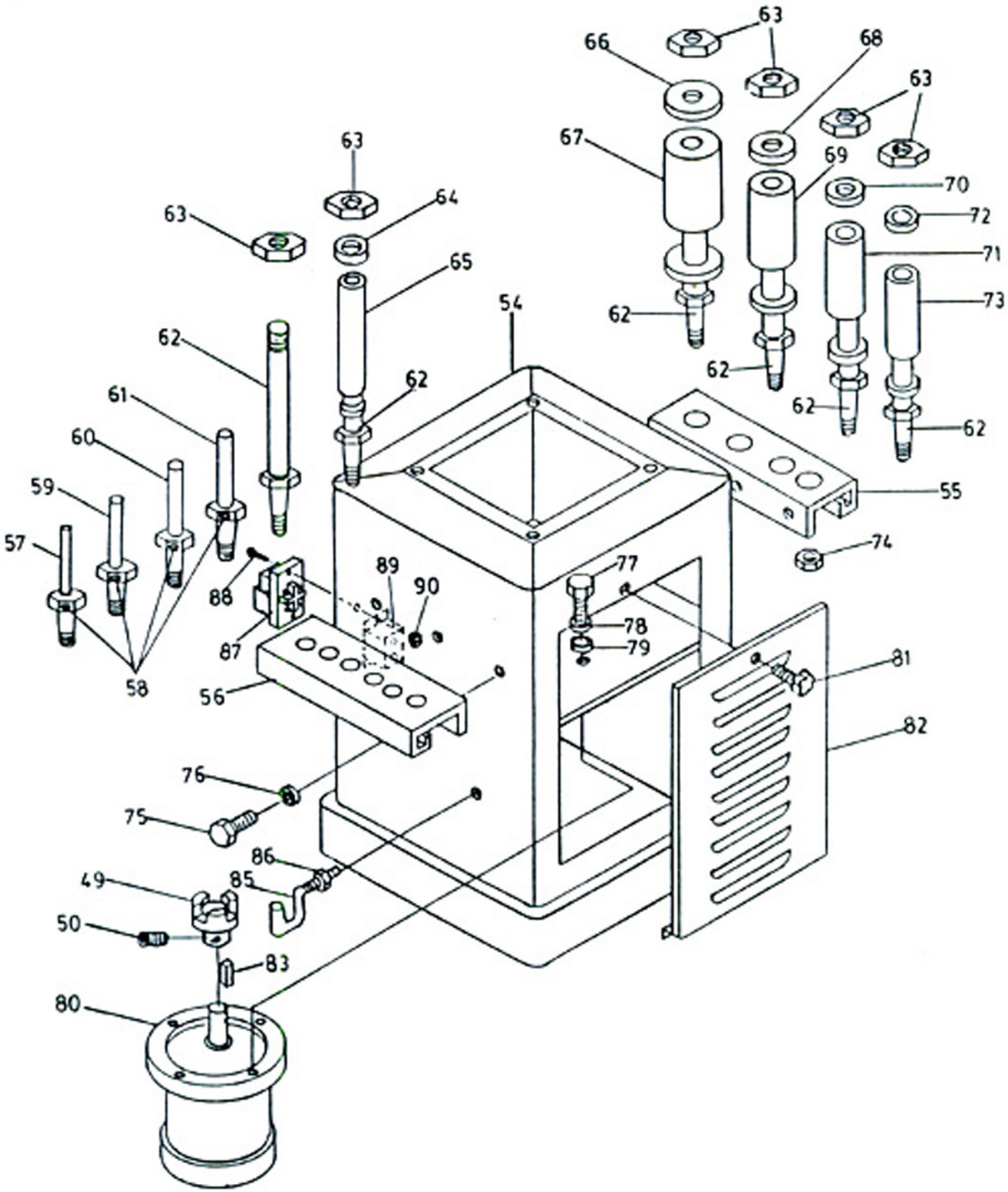
PART NUMBER	DESCRIPTION	QUANTITY
1	WORKING TABLE	1
2	TABLE INSERT (SMALL,)	1
2-1	TABLE INSERT (MEDIUM,)	1
2-2	TABLE INSERT (LARGE,)	1
3	1/4"- 20X1/2" SET SCREW	12
4	3X20 SPLIT PIN	3
5	DUST EXHAUST HOOD	1
6	3/8" HEX NUT	11
7	3/8" LOCK WASHER	22
8	TABLE MOUNTING BRACKET	2
9	LOCK LEVER	2
10	3/8"-16X1-1/4" HEX HEAD BOLT	16
11	TRUNNION BRACKET	2
12	MOUNTING BRACKET	2
13	3/8"-16X1-1/2" HEX HEAD BOLT	2
14	SPINDLE NUT	2
15	SPINDLE HOUSING	1
16	3/8"-16X6" HEX HEAD BOLT	1
17	SANDER BASE	1
18	DIP STICK	1
19	AIR RELEASE VALVE	1
20	5/8" HEX NUT	1
21	5/8" LOCK WASHER	1
22	GREASE FITTING	1
23	POINTER ARM	1
23-1	5/16" HEX NUT	1
24	POINTER	1
25	TRANSMISSION ROD GUIDE	2
26	TRANSMISSION ROD MOUNTING BRACKET	1
27	5/16" LOCK WASHER	2
28	5/16"-18X1 CAP SCREW	6
29	WORM GEAR HOUSING - BRASS	2
30	WORM GEAR	1
31	TRANSMISSION ROD	1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PART NUMBER	DESCRIPTION	QUANTITY
32	GUIDE RAIL SHAFT	1
33	BEARING 6205ZZ	2
34	SPINDLE HOUSING	1
35	SPINDLE	1
36	KEY 5X5X50	1
37	3X12 SCREW	2
38	LOCK NUT	1
39	RING GEAR	1
40	5X28 SPLIT PIN	1
41	OIL PAN	1
42	OIL DRAIN PLUG	1
43	3/8"-16X3/4" HEX HEAD BOLT	4
44	OIL SEAL	1
45	BEARING 6206ZZ	1
46	SNAP RING	1
47	GEAR COUPLER	1
48	KEY 5X5X25	1
49	COUPLER	2
50	5/16"-18X3/8" SET SCREW	4
51	COUPLING PAD - PLASTIC	1
52	3/8"-16X1" CAP SCREW	4
53	SCALE	1
54	STAND	1
55	SPINDLE STORAGE SHELF (LARGE)	1
56	SPINDLE STORAGE SHELF (SMALL)	1
57	1/4" SPINDLE	1
58	3/16"-24X1/4" SET SCREW	4
59	3/8" SPINDLE	1
60	1/2" SPINDLE	1
61	5/8" SPINDLE	1

PART NUMBER	DESCRIPTION	QUANTITY
62	3/4" SPINDLE	6
63	3/4" HEX NUT	6
64	1" FLAT WASHER	2
65	1"SANDING DRUM RETAINING SLEEVE-RUBBER	1
66	4" FLAT WASHER	2
67	4" PVS	1
68	3" FLAT WASHER	2
69	3" PVS	1
70	2" FLAT WASHER	2
71	2" PVS	1
72	1-1/2" FLAT WASHER	2
73	1-1/2" PVS	1
74	1/2" HEX NUT	10
75	1/4"-20X1/2" HEX HEAD BOLT	6
76	1/4" LOCK WASHER	6
77	5/16"-18X3/4" HEX HEAD BOLT	4
78	5/16" LOCK WASHER	4
79	5/16" FLAT WASHER	4
80	MOTOR (1 H.P.)	1
81	LOCK KNOB	1
82	DOOR	1
83	KEY	1
84	3/16"-24X1/4" ROUND HEAD SCREW	1
85	HANGER	2
86	1/4" HEX NUT	2
87	SWITCH	1
88	3/16"-24X1" ROUND HEAD SCREW	2
89	SWITCH BOX	1
90	3/16" HEX NUT	2