

# **MAX<sup>®</sup>**

**Model**

**VSI SPINDLE SANDER**

**Manual**

0-794 Chicago Drive  
Jenison, MI 49482  
Phone: 616-457-5999  
Fax: 616-457-3620  
E-mail: [salesdept@tannewitz.com](mailto:salesdept@tannewitz.com)

## **IMPORTANT THINK SAFETY**

### **Read First Safety Warnings and Instructions**

- Completely read Operators Manuals before attempting to operate this machine
- Before starting this machine, know how to stop it in an emergency
- Warning – Failure to make certain that all guards are in place can result in serious injury
- Always wear eye protection
- Never wear loose clothing while operating machinery
- Never leave machine running unattended
- Never service or attempt to make any adjustments to the machine while it is running
- Never service this machine without disconnecting power

**FAILURE TO HEED THESE WARNING CAN RESULT IN  
SERIOUS INJURY**

## **WARRANTY**

**Max**, warrants to the original retail purchaser that all machinery and components of its manufacture shall be free from defects in material and workmanship, if given normal and proper use, for a period of one year after purchase. **Max** will repair or replace, F.O.B. original shipping point (but not install), any part or parts which in its judgment, shall disclose defects in either material or workmanship. Where parts are to be replaced, at **Max's** request, the defective parts are to be returned for inspection, shipping charges collect. Parts and assemblies so repaired or replaced shall be covered by this warranty for one year from the date of their installation.

**Max** does not warrant motors, bearings, belts, electrical controls, or other trade accessories or components purchased from other manufacturers and furnished by **Max** on its equipment. Such items are warranted only to the extent of the warranties offered by the original manufacturers.

### **THIS WARRANTY SHALL NOT APPLY TO:**

- A. Any product which has been altered, repaired, or neglected in any way which in the opinion of the **Max**, could have adversely affected its performance or reliability;
- B. Any product which has been subjected to misuse or accident;
- C. Any product which has been operated in disregard of **Max's** printed instructions.

**MAX MAKES NO WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY AND THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES AND REPRESENTATIONS, ORAL OR WRITTEN, EXPRESSED OR IMPLIED, AND ALL OTHER OBLIGATIONS OR LIABILITIES ON THE PART OF MAX, EXCEPT AS SPECIFICALLY SET FORTH HEREIN. UNDER NO CIRCUMSTANCES SHALL MAX BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES SUSTAINED IN CONNECTION WITH ITS PRODUCTS.**

### **Safety Precautions:**

1. Before starting the machine, check the following
  - a. Be sure it is wired to proper voltage, phase and cycle;
  - b. Check rotation of spindle – it should revolve counter-clockwise
2. Hold work piece firmly against the table to resist both the spinning of the spindle and the upward oscillation of the spindle
3. Grinding can also be done free hand by holding the work piece against the spindle without resting it on the table. When this is done, the work piece should be held firmly in both hands to resist the spinning of the spindle and both the upward and downward oscillation of the spindle. Many warped and curved surfaces can be shaped this way
4. Be sure to stop the machine before placing a small ring over the spindle. After sanding the inside of the ring, stop the machine again before removing the work piece
5. Small rings should not be held free hand but should be rested on the table
6. Excessive pressure against the spindle could possibly cause the spindle to become loose in its socket. It is better, therefore, to exert normal pressure to re replace the abrasive sleeves when they become clogged or worn out.
7. Be sure machine has stopped running before changing the spindle or sleeves
8. The machine should also be stopped for changing the table inserts
9. Neckties or loose sleeves should be kept away, so as not to become entangled in the spindle.
10. Turn off machine before cleaning

## **Maintenance**

1. MAX® Spindle Sanders are quality-built tools and should require minimum maintenance.
2. Clean machine regularly, as accumulated wood dust or metal grinding increase wear
3. Keep spindle tapers clean and free from nicks; also clean tapered socket occasionally so spindles will seat true
4. To straighten bent spindles, place in tapered socket; slip a short piece of pipe over steel shaft of spindle and apply a reasonable amount of pressure in the required direction. The run-out on the spindles can be checked with a dial indicator after straightening.
5. The gear case is filled with approximately 2 quarts of SAE 90 Gear Lube, which brings the level at about  $\frac{1}{4}$  of the sight glass
6. Additional gear lube should seldom have to be added. If additional lube is ever required, remove four (4) socket head cap screws holding gear case cap (No. 1 on Data Sheet 251) and remove entire unit from gear case. It is easiest to remove the table first.
7. When replacing gear assembly, start the bottom of the main spindle (No. 3) into the stub shaft (No. 17) and turn, if necessary, until you feel key enter the stub shaft keyway
8. All bearings used in the gear case assembly are greased-sealed for the life of the bearing and all gears are splash lubricated in oil bath.
9. Motor bearings are greased for the life of the bearing

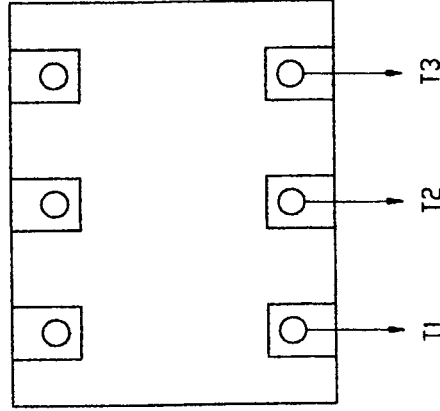
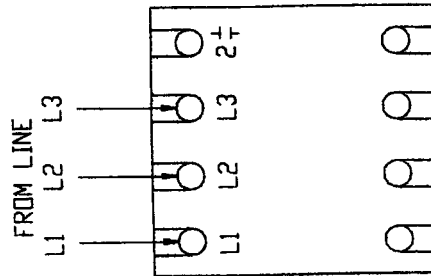
## **MAX® OSCILLATING VERTICAL SPINDLE SANDER**

### **OPERATING INSTRUCTIONS**

1. The purpose of the machine is to sand or grind curved surfaces of wood
2. Always use a spindle that is smaller than the curve to be sanded or ground
3. Use an insert plate that comes closest to the spindle without touching it
4. Be sure the spindle is firmly seated in the tapered socket. Spindle Sanders Serial Numbers 301 and up are equipped with MAX-LOK Safety Spindles. Two wrenches are provided to set spindles snugly in the tapered socket. Use one wrench to hold the hex nut on the top of tapered socket, while tightening spindle with the other wrench. Do not overtighten, which increases the difficulty of removing spindle. On older machines, before Serial Number 301, a slight tap on top the spindle helps to seat it, especially on larger spindles.
5. When the table is set at 90° (flat) with the spindle (a stop is provided for this setting), then the grinding can be done from any position around the table
6. The work should be revolved around the spindle with a sliding motion against the rotation of the spindle, while pressure is applied at the centerline.
7. After setting the table to the correct angle, it should be locked by the hand nut provided. The tilting gear shaft can be locked to prevent creeping
8. Be sure to unlock both locks and the table-stop before changing the angle of the table – forcing the table against the stop or the locks could do damage.
9. It is generally better to grind separate sections, which can be assembled later than to try to sand a block, the full height of the spindle.
10. Turn off the machine, clean off the table after use, and reset the 90° stop, if table has been tilted.

REF. ASS'Y DWG. NO: ITEM NO:

## 3 PH. WIRING ONLY



REV.	CHANGE	DATE	BY

TAPE NO: 0000

DIM. IN  INCHES  MM

TOLERANCES UNLESS SPECIFIED

FRACTIONS ± 1/64"

2 DECIMALS ± .01"

3 DECIMALS ± .005"

4 DECIMALS ± .001"

ANGULAR ± 30'

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ITEM	QTY	DWG.	DESCRIPTION	MAT'L

JOB - DWG. DATE -

ASSY: - SCALE -

PART - SHOP ORDER

REV. EL. HOOK-UP 00

DRAWN DANIEL G.

CHECKED

APPROVED

NOTE: CHANGES MAY NOT BE MADE IN SHOPS WITHOUT CONSULTING ENGINEERING DEPARTMENT.

## **REPLACEMENT SPINDLES FOR MAX SPINDLE SANDERS**

For Machines - Serial No.'s 100 through 300  
(2-10-66 through 3-15-68)

Use - Original taper spindles

For Machines - Serial No.'s 301 through 404  
(3-15-68 through 5-29-69)

Use - #2 Morse Taper - long - cutoff safety-lock threads

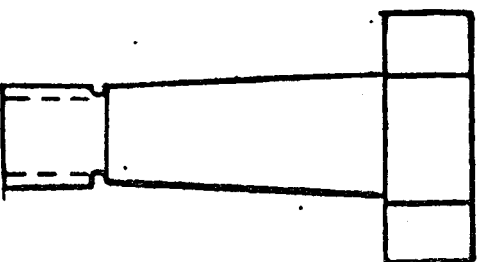
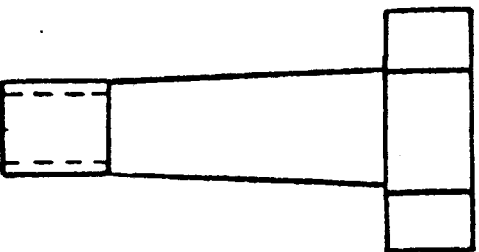
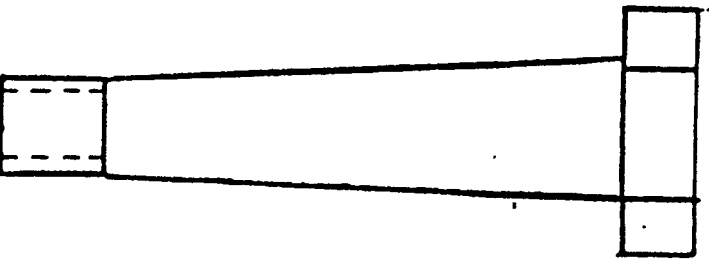
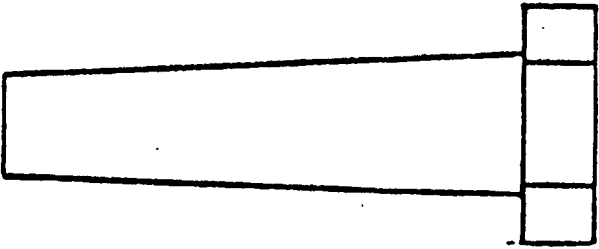
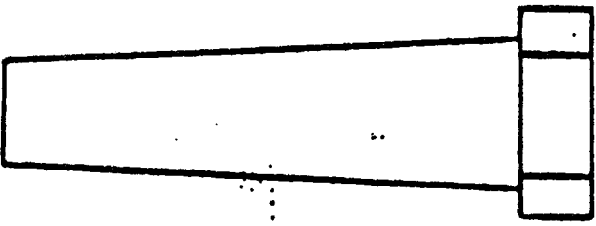
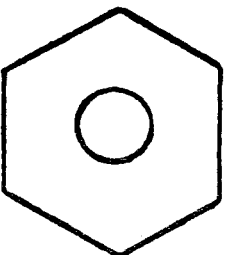
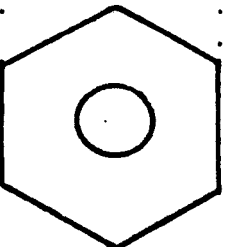
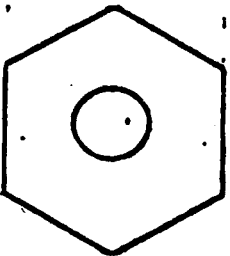
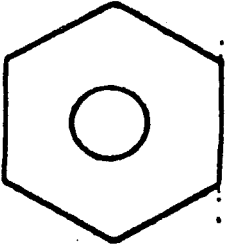
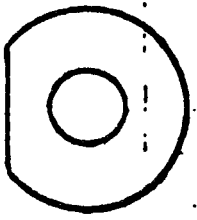
For Machines - Serial No.'s 405 through 2173  
5-29-69 through 3-18-80)

Use - #2 Morse Taper - long - with safety-lock threads

For Machines - Serial No.'s 2174 - current  
(3-18-80 through current)

Use - #2 Morse Taper - short - with safety-lock threads





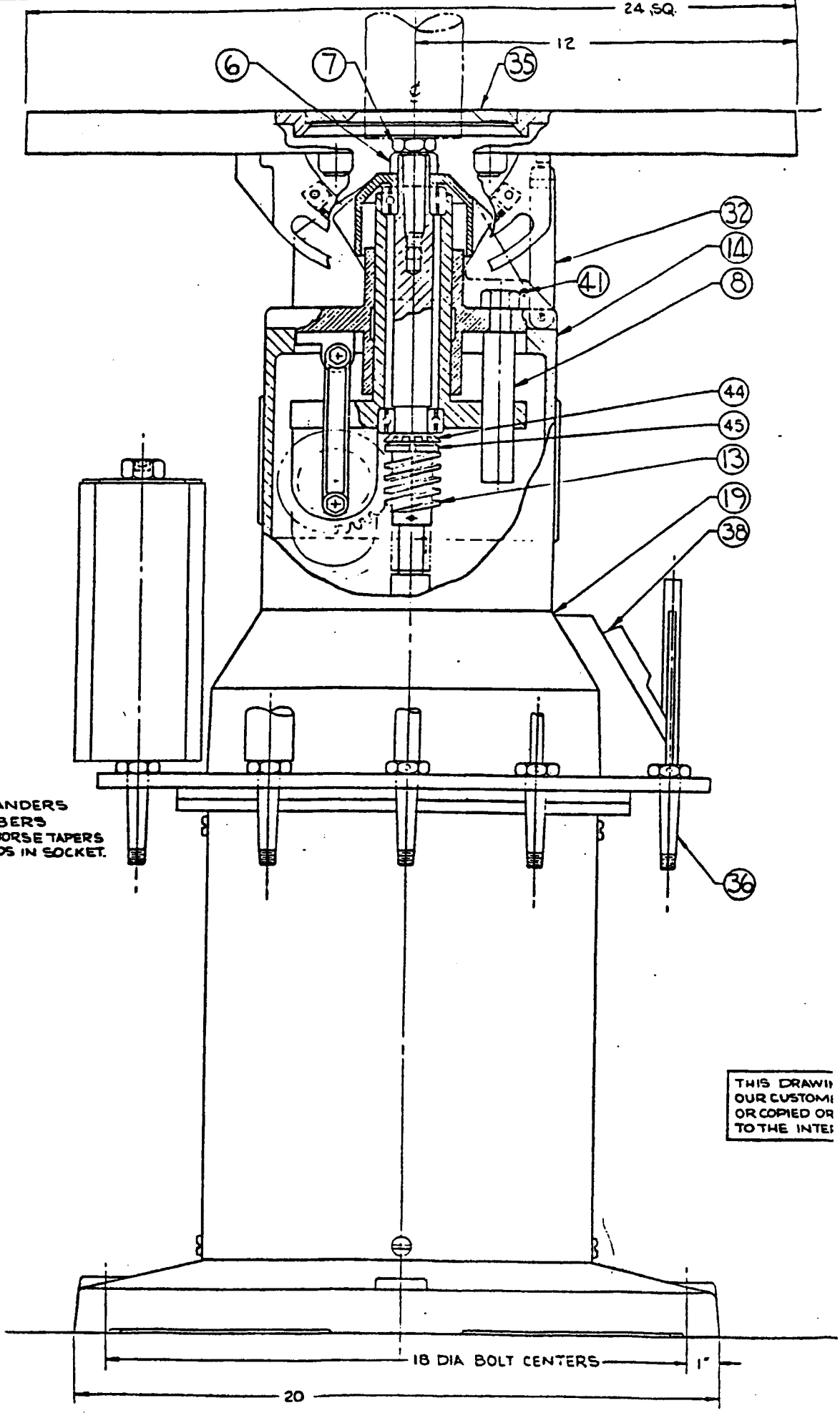
Original taper  
spindles  
Serial #100-300

#2 Morse Taper  
long - cutoff  
safety-lock threads  
Serial #301-404

#2 Morse Taper  
long - with safety-  
lock threads  
Serial #405-2173

#2 Morse Taper  
short - with safety-  
lock threads  
Serial #2174-3207  
MAX

#2 Morse Taper  
short - with safety-  
lock threads with  
undercut  
TAPER LOCKS  
Current style



ALL MAX SPINDLE SANDERS  
 FROM SERIAL NUMBERS  
 301 & UP HAVE #2 MORSE TAPERS  
 AND MAXLOK THREADS IN SOCKET.

THIS DRAWING  
 OUR CUSTOMER'S  
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 TO THE INTEREST

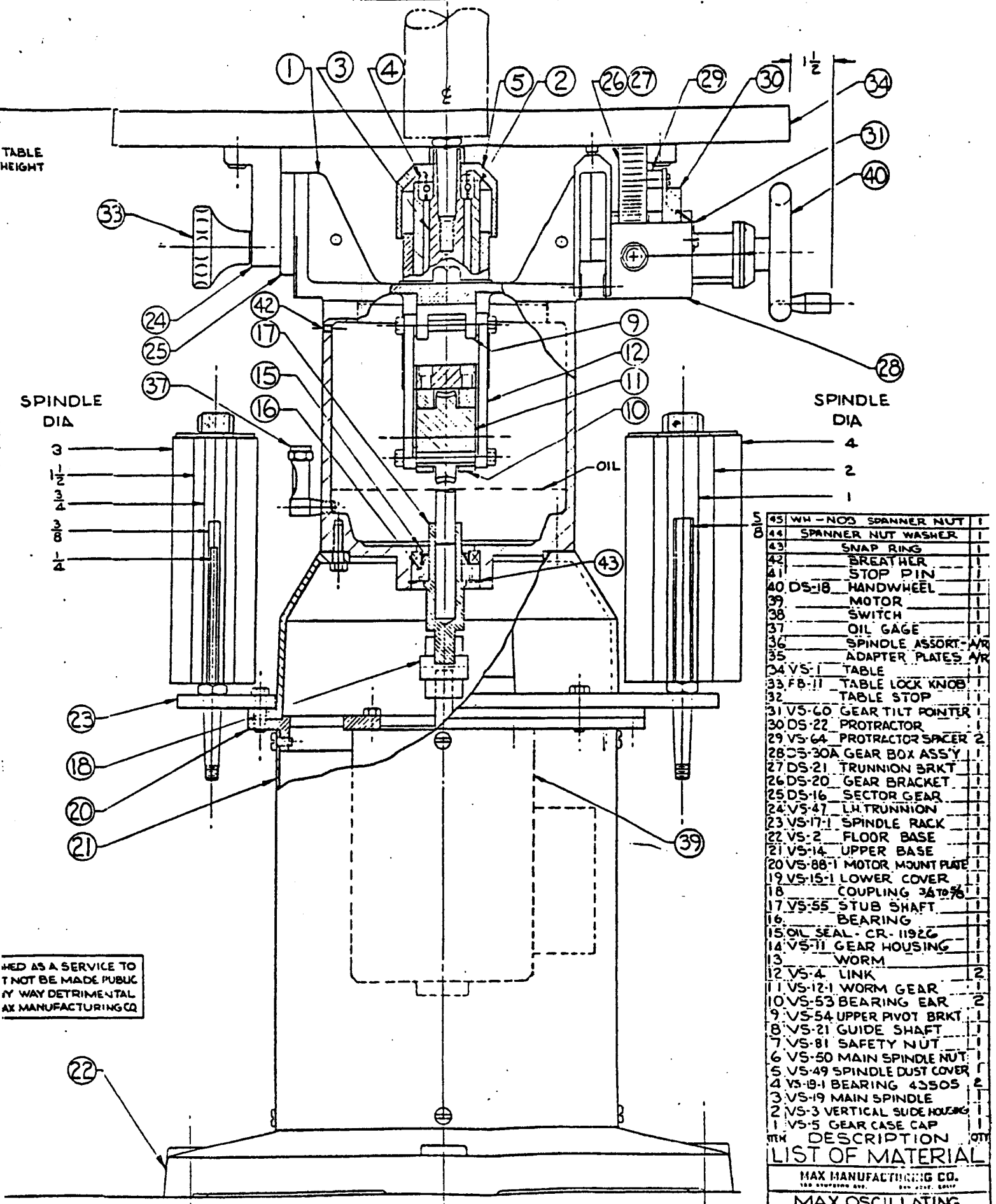
TABLE HEIGHT

SPINDLE DIA

- 3
- 1 1/2
- 3/4
- 3/8
- 1/4

SPINDLE DIA

- 4
- 2
- 1

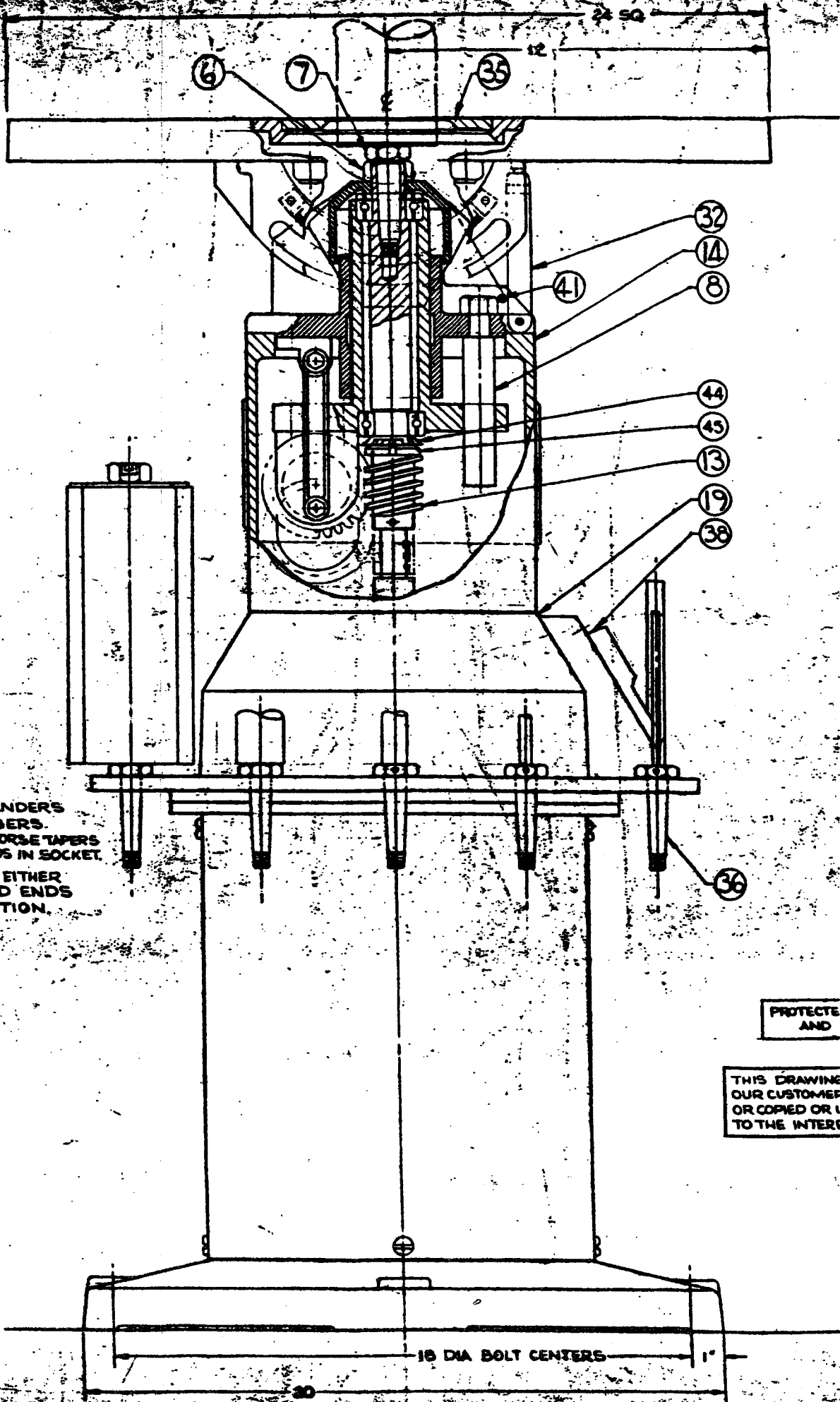


MADE AS A SERVICE TO  
IT NOT BE MADE PUBLIC  
IN ANY WAY DETRIMENTAL  
TO MAX MANUFACTURING CO

45	WH-NOS SPANNER NUT	1
44	SPANNER NUT WASHER	1
43	SNAP RING	1
42	BREATHER	1
41	STOP PIN	1
40	DS-18 HANDWHEEL	1
39	MOTOR	1
38	SWITCH	1
37	OIL GAGE	1
36	SPINDLE ASSORT-VR	1
35	ADAPTER PLATES VR	1
34	VS-1 TABLE	1
33	FB-11 TABLE LOCK KNOB	1
32	TABLE STOP	1
31	VS-60 GEAR TILT POINTER	1
30	DS-22 PROTRACTOR	1
29	VS-64 PROTRACTOR SPACER	2
28	DS-30A GEAR BOX ASS'Y	1
27	DS-21 TRUNNION BRKT	1
26	DS-20 GEAR BRACKET	1
25	DS-16 SECTOR GEAR	1
24	VS-47 LH TRUNNION	1
23	VS-17-1 SPINDLE RACK	1
22	VS-2 FLOOR BASE	1
21	VS-14 UPPER BASE	1
20	VS-88-1 MOTOR MOUNT PLATE	1
19	VS-15-1 LOWER COVER	1
18	COUPLING 3/8 TO 3/8	1
17	VS-55 STUB SHAFT	1
16	BEARING	1
15	OIL SEAL - CR-1192G	1
14	VS-71 GEAR HOUSING	1
13	WORM	1
12	VS-4 LINK	2
11	VS-12-1 WORM GEAR	1
10	VS-53 BEARING EAR	2
9	VS-54 UPPER PIVOT BRKT	1
8	VS-21 GUIDE SHAFT	1
7	VS-81 SAFETY NUT	1
6	VS-50 MAIN SPINDLE NUT	1
5	VS-49 SPINDLE DUST COVER	1
4	VS-8-1 BEARING 4350S	2
3	VS-19 MAIN SPINDLE	1
2	VS-3 VERTICAL SIDE HOUSING	1
1	VS-5 GEAR CASE CAP	1

LIST OF MATERIAL

MAX MANUFACTURING CO.  
100 STROUD AVENUE  
MAX OSCILLATING  
VERTICAL SPINDLE SANDER  
CUT-AWAY VIEWS  
PHIL PARK DES BY  
1-1-70  
HALF

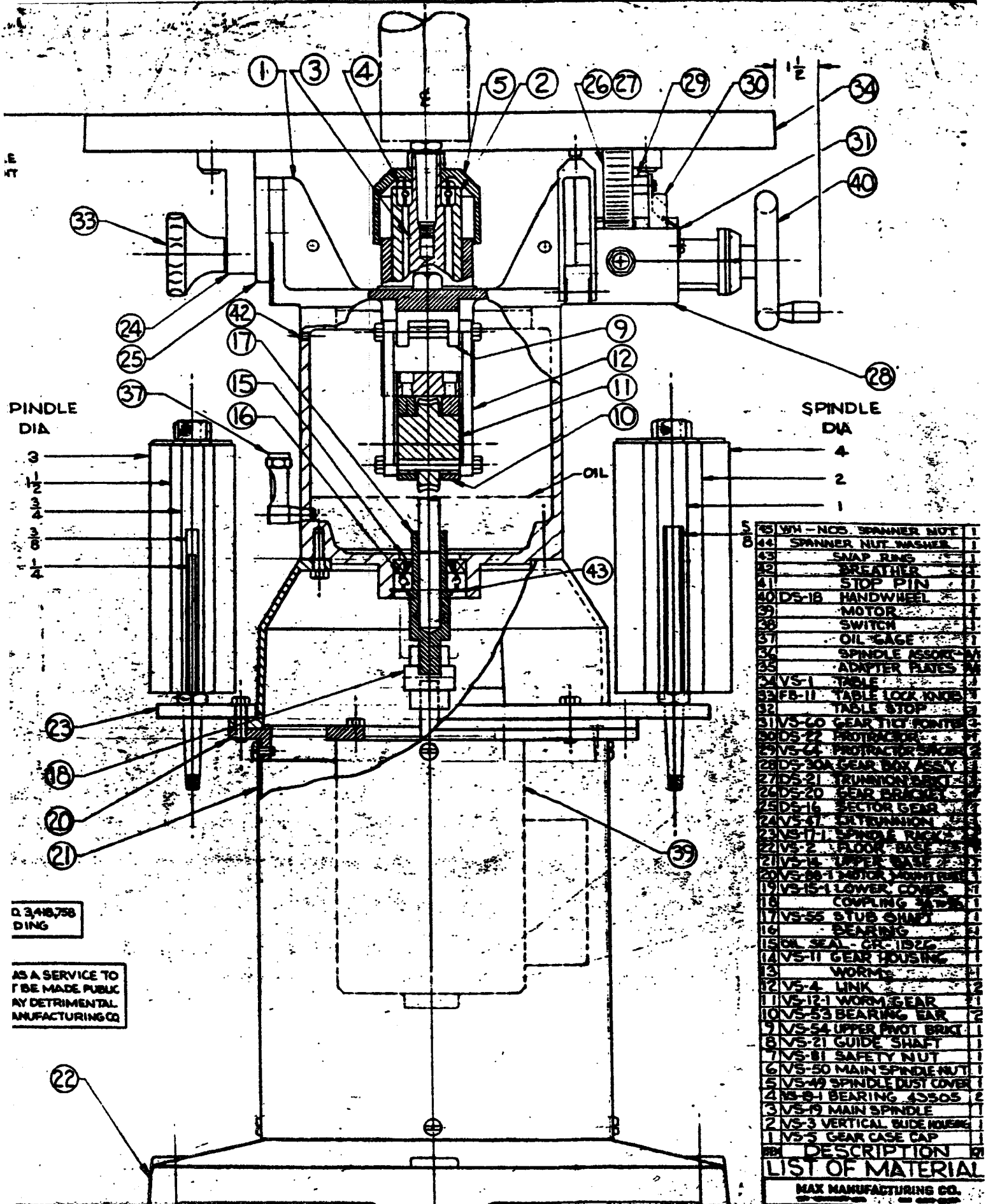


ALL MAX SPINDLE SANDERS  
 FROM SERIAL NUMBERS  
 301 & UP HAVE 2 MORSE TAPERS  
 AND MAXLOS THREADS IN SOCKET.  
 SPINDLES CAN HAVE EITHER  
 PLAIN OR THREADED ENDS  
 AT CUSTOMER'S OPTION.

PROTECTE  
 AND

THIS DRAWING  
 OUR CUSTOMER  
 OR COPIED OR  
 TO THE INTERI

RE



PINDLE  
DIA  
3  
1 1/2  
3/4  
3/8  
1/4

SPINDLE  
DIA  
4  
2  
1

D 348758  
DING

AS A SERVICE TO  
THE PUBLIC  
BY DETRIMENTAL  
MANUFACTURING CO.

5	WH-NOS SPANNER NUT	1
8	44 SPANNER NUT WASHER	1
	43 SNAP RING	1
	42 BREATHER	1
	41 STOP PIN	1
	40 DS-18 HANDWHEEL	1
	39 MOTOR	1
	38 SWITCH	1
	37 OIL CAGE	1
	36 SPINDLE ASSOC	1
	35 ADAPTER PLATES	2
	34 VS-1 TABLE	1
	33 FB-11 TABLE LOCK KNOB	1
	32 TABLE STOP	1
	31 VS-20 GEAR TIG POINTS	3
	30 DS-22 PROTRACTOR	1
	29 VS-24 PROTRACTOR SCALE	2
	28 DS-30A GEAR BOX ASSY	1
	27 DS-21 TRUNNION BRKT	1
	26 DS-20 GEAR BRACKET	2
	25 DS-16 SECTOR GEAR	1
	24 VS-17 EXTENSION	1
	23 VS-11 SPINDLE RIG	1
	22 VS-2 FLOOR BASE	1
	21 VS-14 UPPER WALK	2
	20 VS-13 MOTOR MOUNT	1
	19 VS-15-1 LOWER COVER	1
	18 COUPLING	1
	17 VS-55 STUB SHAFT	1
	16 BEARING	1
	15 OIL SEAL - CR-1522	1
	14 VS-11 GEAR HOUSING	1
	13 WORM	1
	12 VS-4 LINK	12
	11 VS-12-1 WORM GEAR	1
	10 VS-53 BEARING EAR	2
	9 VS-54 UPPER MOUNT BRKT	1
	8 VS-21 GUIDE SHAFT	1
	7 VS-81 SAFETY NUT	1
	6 VS-50 MAIN SPINDLE NUT	1
	5 VS-49 SPINDLE DUST COVER	1
	4 VS-6-1 BEARING 43505	2
	3 VS-9 MAIN SPINDLE	1
	2 VS-3 VERTICAL GUIDE HOUSING	1
	1 VS-5 GEAR CASE CAP	1
	DESCRIPTION	1

**LIST OF MATERIAL**  
 MAX MANUFACTURING CO.  
 MAX OSCILLATING  
 VERTICAL SPINDLE SANDER  
 CUT-BLOCK



Effective: January 1, 2008

Tannewitz, Inc. • 0-794 Chicago Drive • Jenison, Michigan 49428 • 616/457-5999  
TOLL FREE: 1-800-458-0590 • FAX: 616/457-3620

**RESIN CLOTH ALUM OXIDE**

**MAX SANDING SLEEVES  
WOOD 40 GRIT  
QUANTITY 20 PER BOX**

<u>PART NO</u>	<u>SIZE</u>	<u>PRICE</u>
210072	1/4 X 5	30.00
210073	3/8 X 6	34.50
210074	1/2 X 6	34.50
210075	5/8 X 6	35.00
210076	3/4 X 9	54.00
210077	1 X 9	57.00
210078	1 1/2 X 9	62.00
210079	2 X 9	75.00
210080	3 X 9	102.00
210081	4 X 9	137.00

**MAX SANDING SLEEVES  
WOOD GRIT 50  
QUANTITY 20 PER BOX**

<u>PART NO</u>	<u>SIZE</u>	<u>PRICE</u>
210082	1/4 X 5	30.00
210083	3/8 X 6	34.50
210084	1/2 X 6	34.50
210085	5/8 X 6	35.00
210086	3/4 X 9	54.00
210087	1 X 9	57.00
210088	1 1/2 X 9	62.00
210089	2 X 9	75.00
210090	3 X 9	102.00
210091	4 X 9	137.00

**MAX SANDING SLEEVE  
WOOD 60 GRIT  
QUANTITY 20 PER BOX**

210092	1/4 X 5	30.00
210093	3/8 X 6	34.50
210094	1/2 X 6	34.50
210095	5/8 X 6	35.00
210096	3/4 X 9	54.00
210097	1 X 9	57.00
210098	1 1/2 X 9	62.00
210099	2 X 9	75.00
210100	3 X 9	102.00
210101	4 X 9	137.00

**MAX SANDING SLEEVES  
WOOD 80 GRIT  
QUANTITY 20 PER BOX**

210102	1/4 X 5	30.00
210103	3/8 X 6	34.50
210104	1/2 X 6	34.50
210105	5/8 X 6	35.00
210106	3/4 X 9	54.00
210107	1 X 9	57.00
210108	1 1/2 X 9	62.00
210109	2 X 9	75.00
210110	3 X 9	102.00
210111	4 X 9	137.00

**MAX SANDING SLEEVES  
WOOD 100 GRIT  
QUANTITY 20 PER BOX**

210112	1/4 X 5	30.00
210113	3/8 X 6	34.50
210114	1/2 X 6	34.50
210115	5/8 X 6	35.00
210116	3/4 X 9	54.00
210117	1 X 9	57.00
210118	1 1/2 X 9	62.00
210119	2 X 9	75.00
210120	3 X 9	102.00
210121	4 X 9	137.00

**MAX SANDING SLEEVES  
WOOD 120 GRIT  
QUANTITY 20 PER BOX**

210142	1/4 X 5	30.00
210143	3/8 X 6	34.50
210144	1/2 X 6	34.50
210145	5/8 X 6	35.00
210146	3/4 X 9	54.00
210147	1 X 9	57.00
210148	1 1/2 X 9	62.00
210149	2 X 9	75.00
210150	3 X 9	102.00
210151	4 X 9	137.00

## MAX OSCILLATING VERTICAL SPINDLE SANDER

VSI - 1 HP, Single or 3 phase: \$4400.00  
 OVS - 1 HP, Single or 3 phase: \$3300.00

\*Specify Voltage when ordering

**Standard Equipment:**

1. 10 complete safety spindles with 5 rubber drums and 1 set of 10 abrasive sleeves
2. Three throat rings
3. Two spindle wrenches (240248)
4. Gear tilt table and table stop

EACH MACHINE IS TESTED AND READY TO OPERATE ON ARRIVAL

**\*For special voltage see electric's \*Other HP available upon special request**

**\*Shipping weight: approximately 375 lb.**

**OPTIONAL EQUIPMENT:**

Dust Bag, Complete (549072) \$90.00/each  
 Throat Plates (240048,49,50) \$110.00/each

**DUST COLLECTOR:**

Model DC-1 with overload protection when used with magnetic starter \$1,000.00

**DUST SYSTEM ADAPTER:**

Model VS DC-1 adapter with 3" hose ring for use with central dust system \$200.00

**ELECTRIC'S:**

Please specify operating voltage when ordering cord and plug supplied on single phase 115 volt  
 For special voltages, please consult factory  
 JIC Controls: \$2,000.00

All machines wired switch to motor  
 Above prices are based upon standard, totally enclosed. Fan cooled motors and starters in NEMA 1 enclosure

SPINDLE NO.	SPINDLE SIZE	STEEL SPINDLE LIST	RUBBER DRUM LIST	COMPLETE SPINDLE
1	1/4 X 5	\$ 70.00	\$ ----	\$ 70.00
2	3/8 X 6	\$ 80.00	\$ ----	\$ 80.00
3	1/2 X 6	\$ 90.00	\$ ----	\$ 90.00
4	5/8 X 6	\$105.00	\$ ----	\$105.00
5	3/4 X 9	\$110.00	\$ ---	\$110.00
6	1 X 9	\$150.00	\$ 42.00	\$150.00
7	1 1/2 X 9	\$160.00	\$ 53.00	\$160.00
8	2 X 9	\$170.00	\$ 64.00	\$170.00
9	3 X 9	\$200.00	\$ 75.00	\$200.00
10	4 x 9	\$220.00	\$105.00	\$220.00

**\*Prices do not include abrasive sleeves**

To order Replacement Spindles for Older Machines:

Serial #'s	Dated	Order
VS100-VS300	2-10-66 thru 3-15-68	Original Taper
VS301-VS404	3-16-68 thru 5-29-69	Long #2 Morse cut off
VS405-VS2173	5-30-69 thru 3-18-80	Long #2 Morse
VS2174 - Current	3-19-80 - present	Short #2 Morse