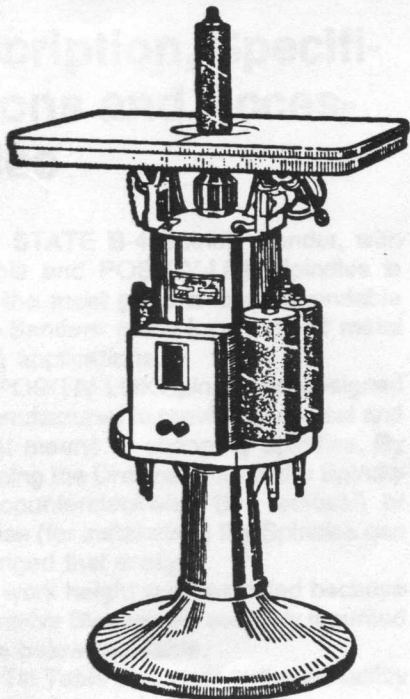


# STATE



(SN-4880)

115V-1PH

# B-4

## Spindle Sander

### Owner's Manual

# Important

## FOR YOUR OWN SAFETY

Before Assembling & Operating This Sander, Read This Operator's Manual Carefully & Completely. Become Familiar With The Operation, Applications & Potential Hazards Peculiar To This Sander.

Check To Make Sure That There Is No Apparent Damage From Shipment Before You Begin To Unpack & Set The Sander Up For Operation. Report Any & All Damages Immediately To The Carrier.

STATE Sanders

Exclusively Distributed by  
FREEMAN Mfg. & Supply Co.

1246 W. 70th St.

Cleveland, Ohio 44102

800-321-8511, FAX 216-961-9233



# STATE B-4 Spindle Sander w/ Tilt Table

## Description, Specifications and Accessories

Your STATE B-4 Spindle Sander, with Tilt Table and POSITIV-LOK Spindles is one of the most popular and dependable Spindle Sanders made for wood and metal sanding applications.

The POSITIV-LOK Spindles are designed and manufactured to provide the safest and quickest means of changing Spindles. By just turning the Drawbar Cap of the Spindle either counterclockwise (for removal) or clockwise (for installation) the Spindles can be changed that easily.

The work height is unrestricted because the Abrasive Sleeves are securely mounted in place below the Table.

The Tilt Table also adds to the versatility of this Sander.

### Other features Include:

- ◆ Spindle speed of 1725 rpm - which provides the necessary performance to meet a wide range of shop applications.
- ◆ Large, 20" x 24" Tilt Table, operated by worm and gear mechanism, features a tilt range of 15° UP and 45° DOWN. Table can be locked into the horizontal position.
- ◆ Integral Spindle Tray for convenient and safe storage of 11 Spindles.
- ◆ The Oscillating Spindle Mechanism and related Bearings operate in an oil bath for smooth, quiet and wear resistant operation.
- ◆ All controls are located within easy reach of operator for safer sanding.

## Standard Equipment

- ◆ Throat Rings (3)
- ◆ Garnet Abrasive Sleeves (10)
- ◆ Expandable Rubber Drums (5)
- ◆ POSITIV-LOK Drawbar Spindles (10)
- ◆ Motors and Controls

## Sander Specifications

Table Size	..... 20" x 24"
Table Height (from floor)	..... 40"
Table Tilts	..... 15° Up, 45° Down
Spindle Speed	..... 1800 rpm
Vertical Oscillation	.. 90 spm .....
Floor Space required	..... 20" x 24"
Shippin Weight	..... 280 pounds

## Spindle Sizes (inches)

- |              |           |
|--------------|-----------|
| ◆ 1/4 x 5    | ◆ 3/8 x 6 |
| ◆ 1/2 x 6    | ◆ 5/8 x 6 |
| ◆ 3/4 x 9    | ◆ 1 x 9   |
| ◆ 1-1/2 x 9* | ◆ 2 x 9*  |
| ◆ 3 x 9*     | ◆ 4 x 9*  |

\* Includes Expandable Rubber Drum

## Accessories

	Cat. No.
Throat Rings (small)	018056
Throat Rings (medium)	018057
Throat Rings (large)	018058
POSITIV-LOK Spindles	
1/4 x 5 (1 incl)	018432
3/8 x 6 (1 incl)	018431
1/2 x 6 (1 incl)	018430
5/8 x 6 (1 incl)	018429
3/4 x 9 (5 incl)	018428
3/4 x 9* (1 incl)	018426

\* For use without Rubber Drum

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- 5- Replacement Parts List
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- 7- Tilt Table Parts & Spindles
- 8- Oscillating Mechanism Parts
- 9- Miscellaneous Parts

Cat. No.	Description	Motor Specs.				Switch
		HP	Volts	Ph	Hz	
018215	B-4 Spindle Sander	1/2	115 / 230	1	60	Magnetic
018220	B-4 Spindle Sander	1/2	230 / 460	3	60	Magnetic

Other motors and controls are available on request.



# STATE B-4 Spindle Sander w/ Tilt Table

## NOTES

Record the Model No. and Serial No. of your STATE Sander, which are located on the nameplate, in the appropriate boxes below.

Model No.	<input type="text"/>
Serial No.	<input type="text"/>

## Safety Precautions

### 1. KNOW YOUR SANDER.

Read Operator's Manual carefully and completely. Understand this Sanders' capabilities and limitations, as well as any potential operating hazards.

### 2. AVOID ACCIDENTAL STARTING.

**Make sure, that the Sander is OFF** by depressing the STOP button on the control box. **Do this BEFORE plugging the power cord into the electrical supply.**

### 3. GROUND SANDER.

This Sander should be properly grounded according to local electrical codes to protect from electrical shock. **READ SET-UP INSTRUCTIONS.**

### 4. CLEAR TILT TABLE OF ALL OBJECTS BEFORE STARTING SANDER.

### 5. SECURE SANDER.

Make sure that once Sander is positioned where it will be operated, bolt it securely to the floor.

### 6. WEAR APPROPRIATE WORK CLOTHES.

Wear safety glasses. **DO NOT wear loose fitting clothing** (unbuttoned shirts, loose sleeve cuffs, or loose fitting jewelry) which could get caught in moving parts.

### 7. ALWAYS MAINTAIN SAFE OPERATING POSITION.

**Stay within convenient reach of START-STOP control AT ALL TIMES** while operating Sander. Maintain proper footing and balance while operating Sander.

### 8. KEEP WORK AREA CLEAN

Cluttered work areas, work surfaces and slippery floors from oil or wood dust invite accidents.

### 9. AVOID DANGEROUS WORK ENVIRONMENT.

Keep work area well illuminated and clear of unnecessary objects. Allow sufficient space around Sander to operate and perform sanding operations safely.

### 10. SECURELY HOLD WORKPIECE TO BE SANDED.

Make sure that piece to be sanded is held flat and securely during all sanding operations.

### 11. KEEP WORK AREA CLEAR OF VISITORS WHENEVER PERFORMING SANDING OPERATIONS.

Any and all visitors should be kept at a safe distance from Sander during sanding operations.

### 12. MAINTAIN SANDER IN TOP CONDITION.

Use proper abrasives for sanding and keep Sander as clean as possible to assure safe and reliable operation.

### 13. USE ONLY RECOMMENDED ACCESSORIES.

Use of accessories not manufactured for use with this Sander could contribute to unsafe and low quality Sander performance.

**IMPORTANT - DISCONNECT POWER CORD FROM ELECTRICAL SUPPLY BEFORE PERFORMING ANY SERVICE ON THIS OR ANY OTHER PIECE OF MACHINERY.**



# STATE B-4 Spindle Sander w/ Tilt Table

## NOTES

### Set-Up Instructions

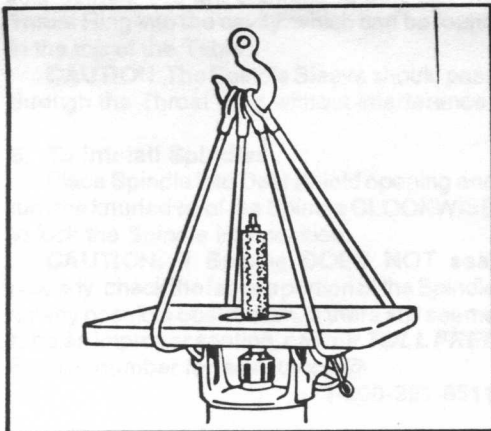
1. While using proper tools and wearing proper safety apparel, carefully unpack your Spindle Sander.

**NOTE:** Accessory package is located in base of crate.

**WARNING:** Spindle Sander weighs around 280 pounds (126 Kilos) so make sure that the equipment used to handle the Sander can handle the weight safely. We recommend that the Sander be lifted and set into position rather than rolled into position. Rolling this Sander is awkward and could result in injury to the operator as well as damage to the Sander.

2. Locating the Sander in your shop where it will be operated can be done in two ways. One way is to use an industrial lift device with a sling attached to the Sander as illustrated below. Another method of locating the Sander is to have two men CAREFULLY lift and carry the Sander into position.

**WARNING:** ONE PERSON SHOULD NOT attempt to lift and move Sander into position because of incurring possible injury due to the Sander's weight.



Sling-lift Method Of Moving Sander

3. Carefully inspect Spindle Sander to make sure nothing was damaged in shipment or during location procedures. Also, make sure all accessories are included.

**CAUTION:** Check to make sure that there is no evidence of damage to Electrical Controls, Handles, Base, Table, or Table Tilt Mechanism.

Check oil level by simply viewing the Sight Glass. Proper oil level should fill at least half of the tube. If the oil level is low, REFER TO THE MAINTENANCE SECTION (page 4) of this Owner's Manual for instructions about adding oil.

4. If there is any apparent damage to Spindle Sander, we recommend that a report be filed immediately with the delivering carrier.

5. Once Sander is located in its permanent position, level it by shimming it where necessary. Mounting Sander to the floor is optional because its weight is normally adequate to keep it in position during sanding operations.

### 6. ELECTRICAL INFORMATION

(Wiring Diagrams can be found on the inside of the Control Panel lid.)

This Spindle Sander is furnished with either single-phase or three-phase Motors. Single-phase type Sanders, wired for 115 volt, ac circuits, are supplied with a Power Cord that can be plugged into any standard, grounded outlet. Single-phase, 230 volt, ac, or three-phase type Sanders must have power wired directly to their switches.

**CAUTION:** Check electrical tag on Sander when you unpack it to make sure that the correct motor has been supplied. If necessary, contact a licensed electrician to make sure Sander is wired to satisfy local electrical codes.

### Operating Instructions

1. Once all safety precautions have been read, understood and followed, plug the Sander into the grounded power supply.

**IMPORTANT:** Your Sander is equipped with a full voltage Starter that features an overload protector.

Press START Button and then press STOP Button to make sure the electrical controls work properly.

Press START Button again and make sure spindle of Sander is rotating in a counterclockwise direction.

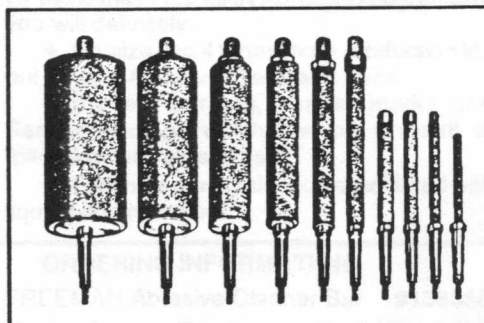
**IMPORTANT:** If Spindle is NOT rotating in a counterclockwise direction, STOP Sander immediately and unplug it from power source. Contact a licensed electrician or call our Service Department TOLL FREE @

1-800-321-8511

2. Unpack all Spindles and Throat Rings from the compartment in the base of the crate.

**NOTE:** The four smaller Spindles, and one of the larger Spindles DO NOT have any nuts on the top. The Sleeves for these Spindles slide directly over the Spindle and set into the flange where they are secured by a Set Screw.

The types of Spindles supplied with the Spindle Sander are illustrated below.





# STATE B-4 Spindle Sander w/ Tilt Table

## NOTES

### Operating Instructions (cont'd. from pg 3)

3. To assemble Spindles - match up Washer with Drum size. Place one Washer over and onto Spindle. Place Rubber Drum onto Spindle. Now, place other Washer onto Spindle. Slide Abrasive Sleeve over Drum and hold it in place while you tighten Top Nut of Spindle. This tightening will compress the Rubber Drum enough to hold the Abrasive Sleeve in place for sanding operations.

**IMPORTANT:** When Spindles are not being used, it is recommended to loosen the Spindle Nut which will decompress the Rubber Drum enough to maintain its original diameter.

**CAUTION:** Tighten Top Nut only enough (hand tight) to secure Abrasive Sleeve against Rubber Drum.

4. Once Spindles are assembled, store them on the Spindle Storage Tray where they will be readily available for use when you need them.

5. Select one of the three Throat Rings supplied with the Sander to corresponding to the size Spindle you are planning to use. Set the Throat Ring into the cavity which can be found in the top of the Table.

**CAUTION:** The Spindle Sleeve should pass through the Throat Ring without interference.

### 6. To Install Spindles . . . .

Place Spindle into Dust Shield opening and turn the knurled tip of the Spindle **CLOCKWISE** to lock the Spindle into position.

**CAUTION:** If Spindle **DOES NOT** seat properly, check the female portion of the Spindle for any possible obstruction. If there still seems to be an improper seating, call our **TOLL FREE** Service number for assistance @  
1-800-321-8511

### 7. To Perform Sanding Operations . . . .

◆ Maintain a comfortable stance and operating position as illustrated at right.

◆ Make sure workpiece being sanded is always in firm contact with the Tilt Table of the Sander.

◆ **DO NOT "hog-in"** workpiece when sanding because the quality of resulting finish will be less than desirable.

◆ Make sure Taper Pin is removed from the Tilt Table Segment **BEFORE** attempting to adjust angle of Tilt Table. If Taper Pin is **NOT REMOVED**, damage to the Taper Pin or Gear Segments could occur.

◆ Make sure to keep work area around Sander clean and free of unnecessary debris which could contribute to an accident.

## Sander Maintenance

**WARNING:** Before Performing **ANY** Maintenance or Making **ANY** Adjustments On The Sander, **UNPLUG POWER CORD** From Power Supply.

1. The Bearings in this Spindle Sander are the permanently sealed and lubricated type . . .  
**NO OILING IS NECESSARY.**

2. This Spindle Sander **DOES NOT NEED GREASING.**

3. The Oscillating Mechanism of this Spindle Sander operates in a bath of oil.

**IMPORTANT:** As long as the oil is maintained at proper level (the Sight Glass on the side of the Sander should be half full) the Oscillating Mechanism will provide many years of trouble-free performance.

### IMPORTANT:

If the oil should fall below the proper level, the following action should be taken:

◆ Use 20W, Non-Detergent Oil.

◆ Pour Oil into the Oil Cup, which is located just above the Sight Glass, with enough Oil to bring the level up to the half way point in the Glass.

4. Check Spindle Sander for worn parts periodically to ensure that your Sander is in top operating condition at all times.

**CAUTION:** If dust or oil are allowed to collect and build up in the Sander without regular cleaning and maintenance, unnecessary wear could occur.

## Maintenance Of Abrasive Discs

*The best way to increase the life and performance of any abrasive is to keep it clean and free from "pitch" build-up.*

The easiest way to assure that your Abrasive Discs are maintained in top condition is to use a **FREEMAN Abrasive Cleaner Bar**. This product measures 1-1/2" x 1-1/2" x 8". To use, just hold the Bar (with both hands) against the Abrasive Disc while the Disc is rotating. You will notice immediately how fast and easy the "pitch" is removed from the Disc. By using the **FREEMAN Abrasive Cleaner Bar**, you will definitely:

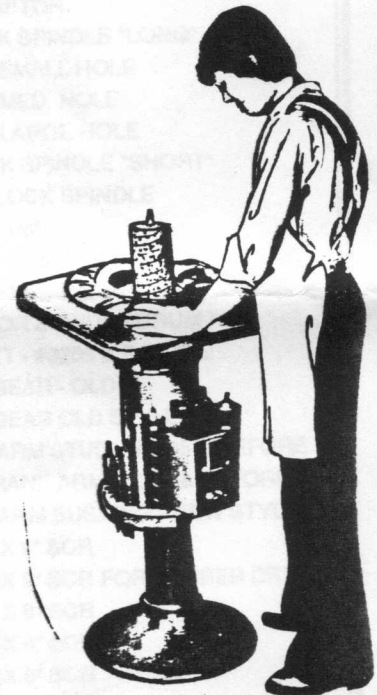
◆ Realize 3 to 4 times more production life out of your Abrasive Discs and Belts.

◆ Prevent burning, chatter marks and Sander vibration which can be a result of "pitch-loaded" abrasives.

◆ Eliminate messy cleanup associated with liquid pitch removers.

## ORDERING INFORMATION

**FREEMAN Abrasive Cleaner Bar #136850**



Maintain Stable and Comfortable Stance When Operating The Sander.



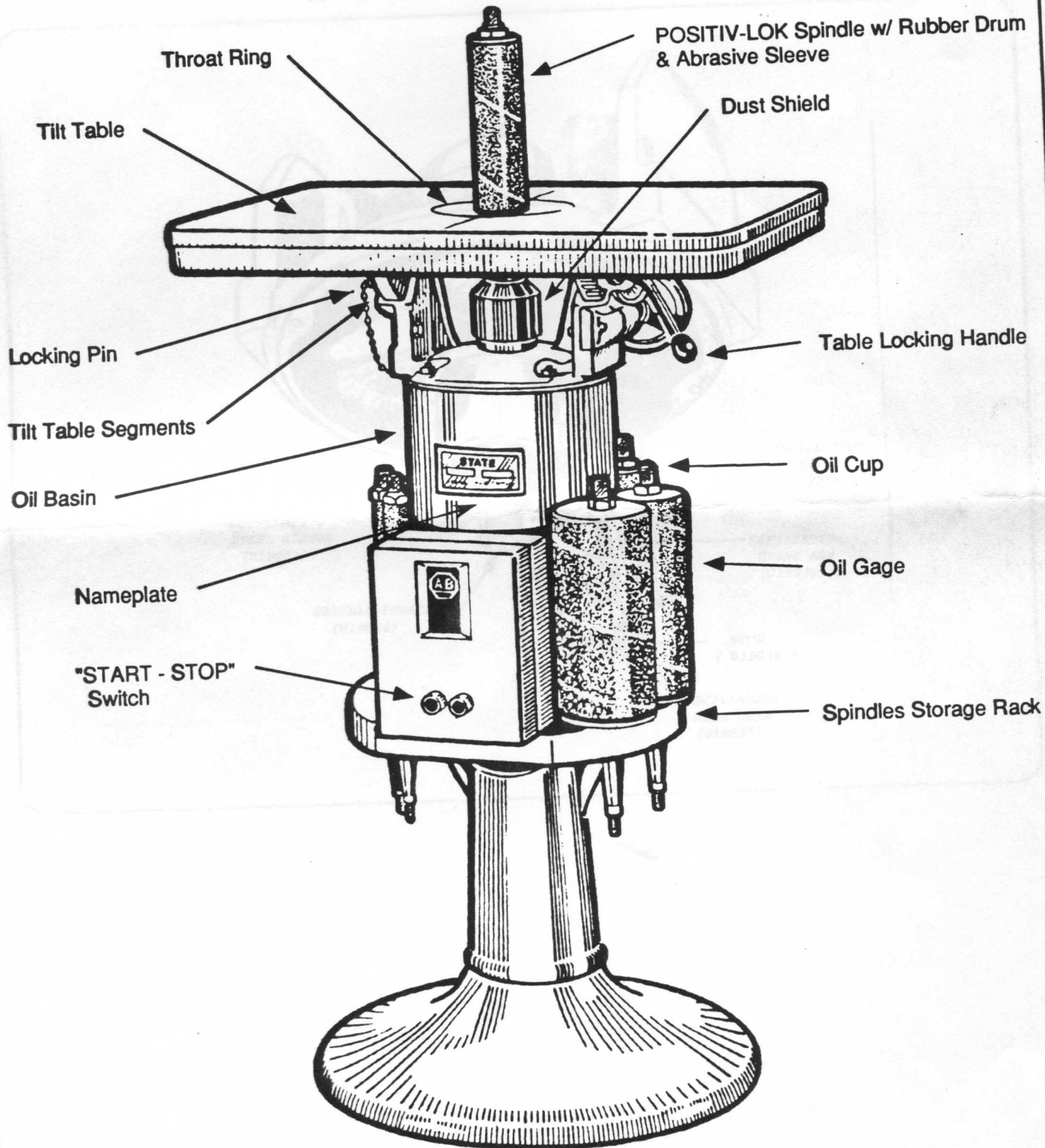
# STATE B-4 Spindle Sander w/ Tilt Table

## Replacement Parts

Cat. No.	Description	Cat. No.	Description
018001	1/2 HP 1 PH 1750 RPM MOTOR	018043	OIL CUP - 1/4" PIPE TIP
018002	1/2 HP 3 PH 1750 RPM MOTOR	018044	OIL GAGE WITH GLASS
018004	RECTANGULAR TABLE 20" & 24"	018045	HOUSING FOR TABLE SUPPORT
018007	TABLE TILTING SEGMENT MALE	018046	COLUMN
018008	TABLE TILTING SEGMENT FEMALE	018047	SHELF
018009	TABLE TILTING SEGMENT MALE FOR WORM GEAR	018048	BASE
018010	TABLE TILTING SEGMENT FEMALE FOR STEEL WORM	018049	BASE CLAMP
018011	TABLE TILTING GRADUATION	018050	RETAINING RING FOR SPINDLE BEARING
018012	TABLE TILTING TAPER PIN	018051	DUST COLLECTOR ADAPTOR
018013	TABLE TILTING TIGHTENING HANDLE	018055	ROD FOR SAFETY LOCK SPINDLE "LONG"
018014	TABLE TILTING STEEL WORM	018056	THROAT RING INSERT SMALL HOLE
018015	TABLE TILTING WORM SHAFT	018057	THROAT RING INSERT MED. HOLE
018016	TABLE TILTING HANDWHEEL	018058	THROAT RING INSERT LARGE HOLE
018018	TABLE SUPPORT & HOUSING CAP	018059	ROD FOR SAFETY LOCK SPINDLE "SHORT"
018021	SPINDLE SHAFT 3/4" x 9" B4 (RUBBER DRUMS)	018060	COLLAR FOR SAFETY LOCK SPINDLE
018022	SPINDLE FEMALE	018061	ADAPTOR SKILL ROD - 1/8"
018023	OSCILLATING STEEL SLEEVE NEW AFTER S/N 3205	018062	ADAPTOR SKILL ROD - 3/16"
018024	OSCILLATING STEEL SLEEVE OLD S/N 3205	018063	ADAPTOR SKILL ROD - 1/4"
018025	SPINDLE DUST SHIELD	018064	COMPRESSION NUT FOR SPINDLE DRUM
018026	BALL BEARING #6205	018065	OSCILLATING BRACKET - #3205 & BEFORE
018027	BALL BEARING #6204	018066	OSCILLATING WORM GEAR - OLD
018028	SPINDLE SHAFT 3/4" x 9" B-4	018066	OSCILLATING WORM GEAR OLD STYLE
018029	SPINDLE SHAFT 5/8" x 6" B-4	018067	OSCILLATING CRANK ARM STUD - #3205 & BEFORE
018030	SPINDLE SHAFT 1/2" x 6" B-4	018069	BUSHING FOR OSC CRANK ARM #3205 & BEFORE
018031	SPINDLE SHAFT 3/8" x 6" B-4	018070	OSCILLATING CRANK ARM BUSHING - NEW STYLE
018032	SPINDLE SHAFT 1/4D" x 5" B-4	018426	SPINDLE SHAFT - 3/4" X 9" SCR
018033	SPINDLE SHAFT EXTRACTOR	018428	SPINDLE SHAFT - 3/4" X 9" SCR FOR RUBBER DRUMS
018034	ARM OSCILLATING CRANK - OLD #36	018429	SPINDLE SHAFT - 5/8" X 6" SCR
018035	OSCILLATING BRACKET - NEW STYLE	018430	SPINDLE SHAFT - 1/2" X 6" SCR
018036	OSCILLATING CRANK - NEW STYLE	018431	SPINDLE SHAFT - 3/8" X 6" SCR
018037	OSCILLATING WORM GEAR - NEW STYLE	018432	SPINDLE SHAFT - 1/4" X 5" SCR
018038	OSCILLATING WORM GEAR STUD	018457	RETAINING NUT WITH FLAT FOR OLD STYLE B-4
018039	OSCILLATING STEEL WORM	018458	RETAINING NUT FOR SCR SPINDLES
018040	OIL SEAL - 5/8" HOLE	018459	FEMALE SPINDLE NUT FOR LOWER BEARING
018041	OIL AGITATOR	018460	KNURLED NUT F/SPINDLE
018042	OIL CUP 1/8" PIPE		



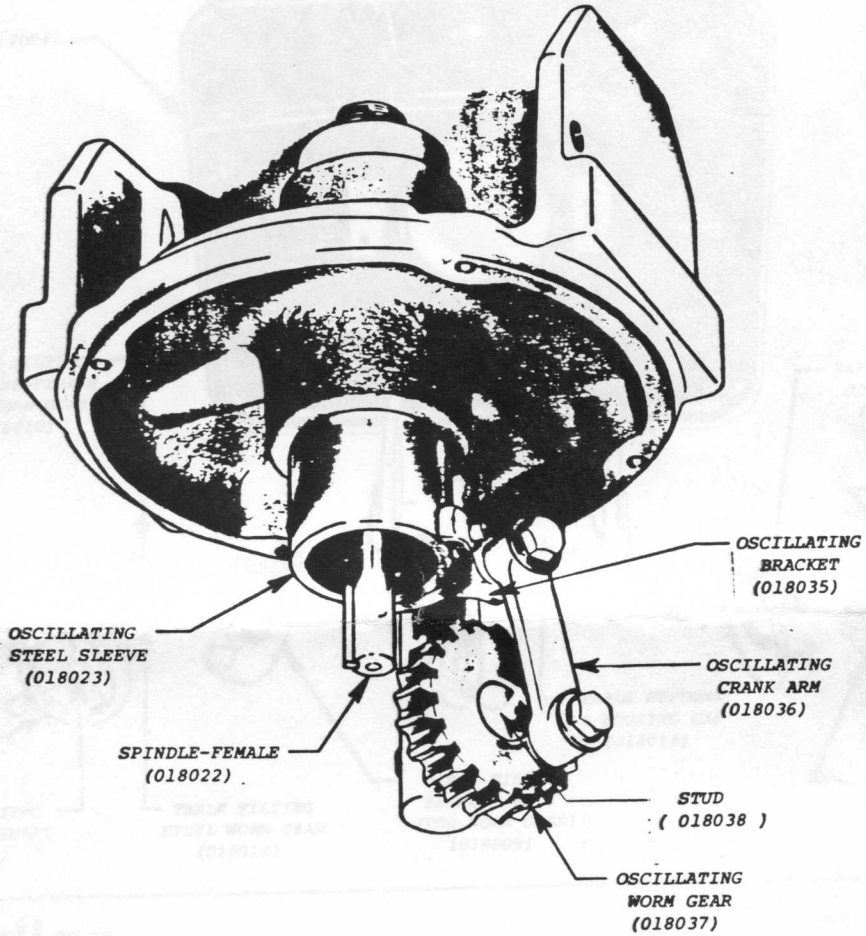
# STATE B-4 Spindle Sander w/ Tilt Table





# STATE B-4 Spindle Sander w/ Tilt Table

## Oscillating Mechanism Parts



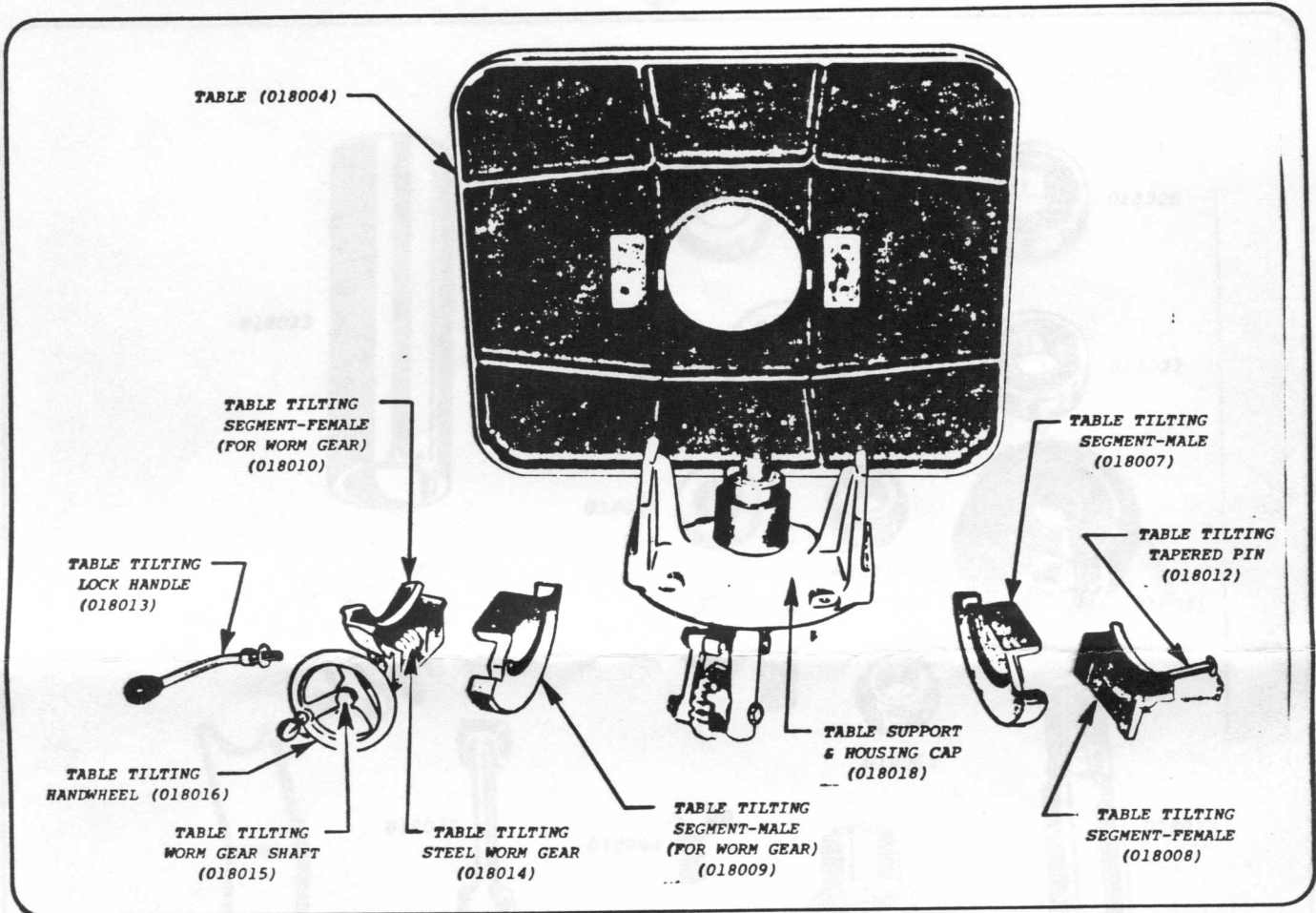
Spindles



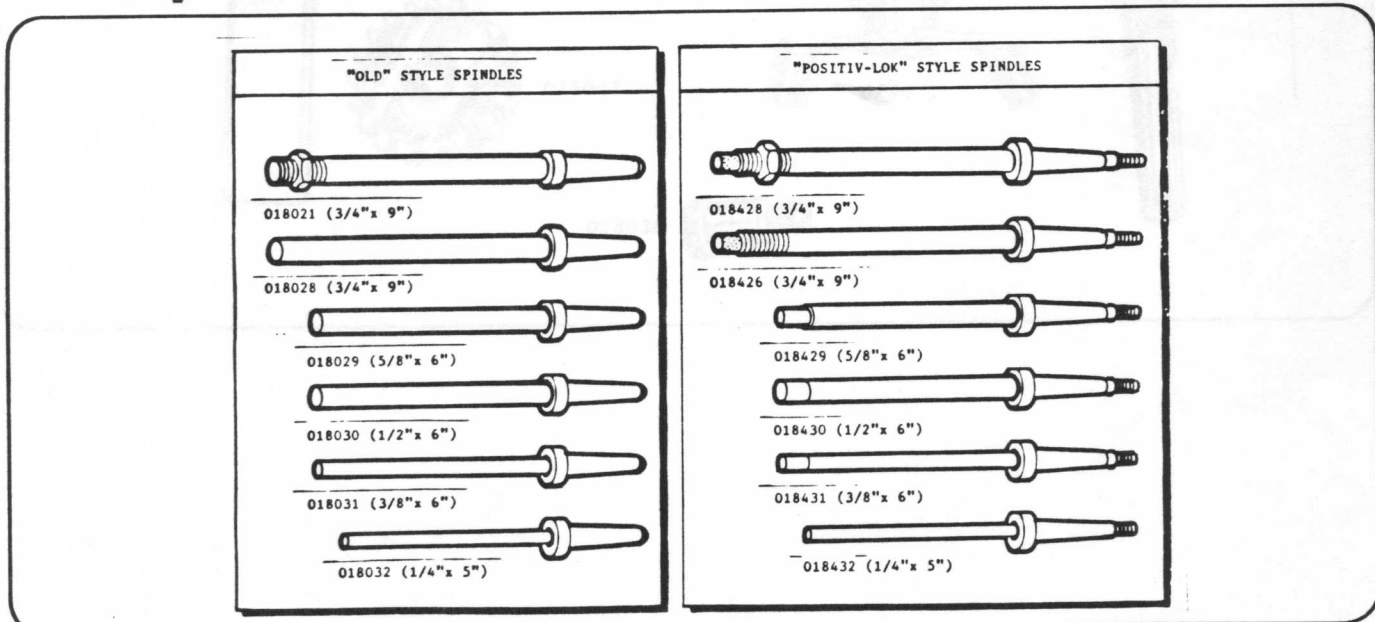


# STATE B-4 Spindle Sander w/ Tilt Table

## Tilt Table Assembly



## Spindles





# STATE B-4 Spindle Sander w/ Tilt Table

## Miscellaneous Parts

