

PART II
REPAIR PARTS
for
No. 510
SURFACE GRINDING MACHINE

For Machines Beginning Serial No. 523-510-105

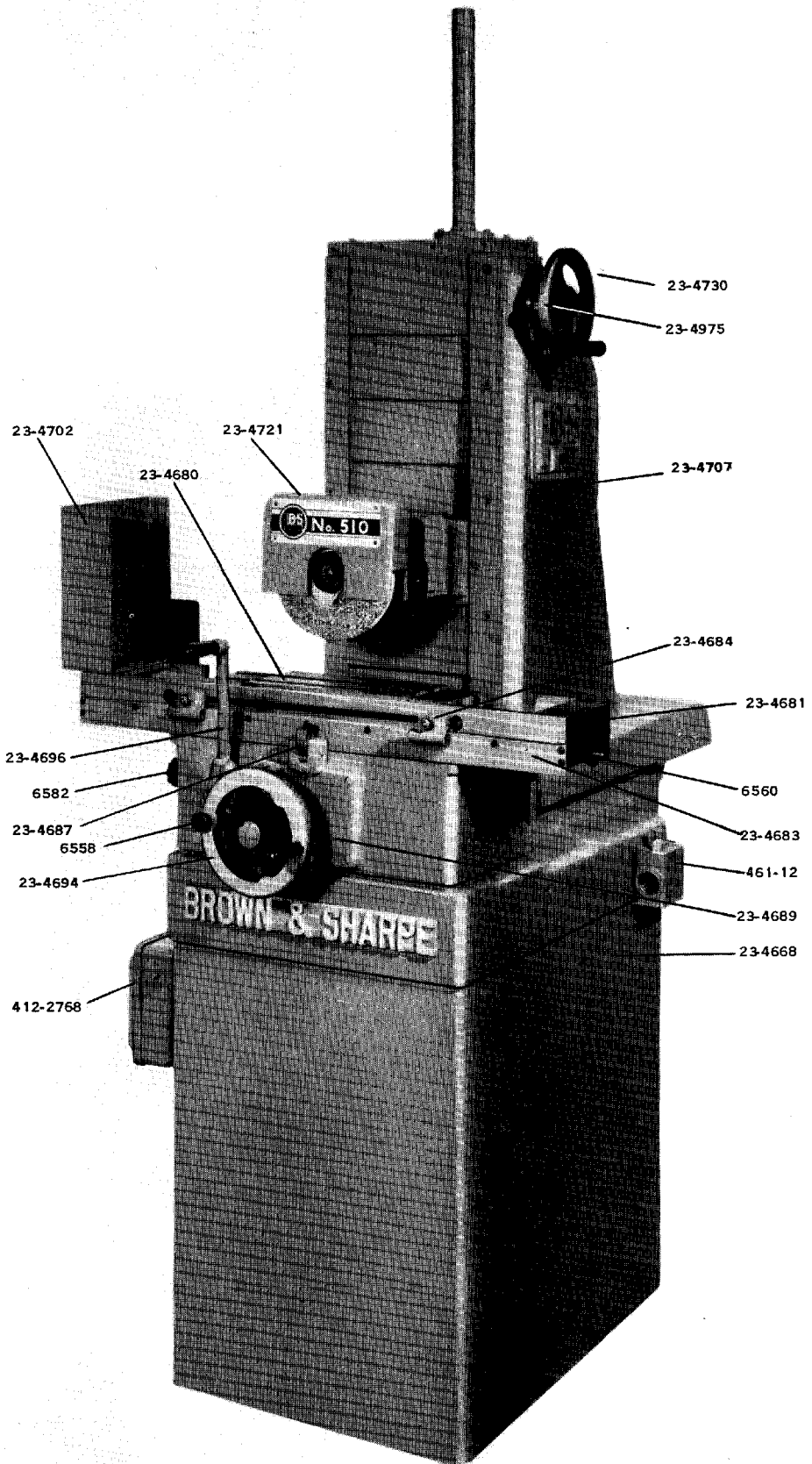
THE parts are arranged in the illustrations so far as possible in the same relative positions as in the machines. This is to facilitate stripping and assembling as well as identifying the parts.

The parts are shown separated to make the construction of the machines more readily understood and to show each part to best advantage. In some cases, when a particular part is ordered, not only that part but one or more supplementary parts also may be sent when, from our experience, this is known to be advisable for a more satisfactory repair job.

HOW TO ORDER REPAIR PARTS

This information is essential:

- 1 — Quantity, Part Number and Name**
- 2 — Size and Style of Machine**
- 3 — Serial Number of Machine or Attachment**
(Give both when ordering attachment parts)

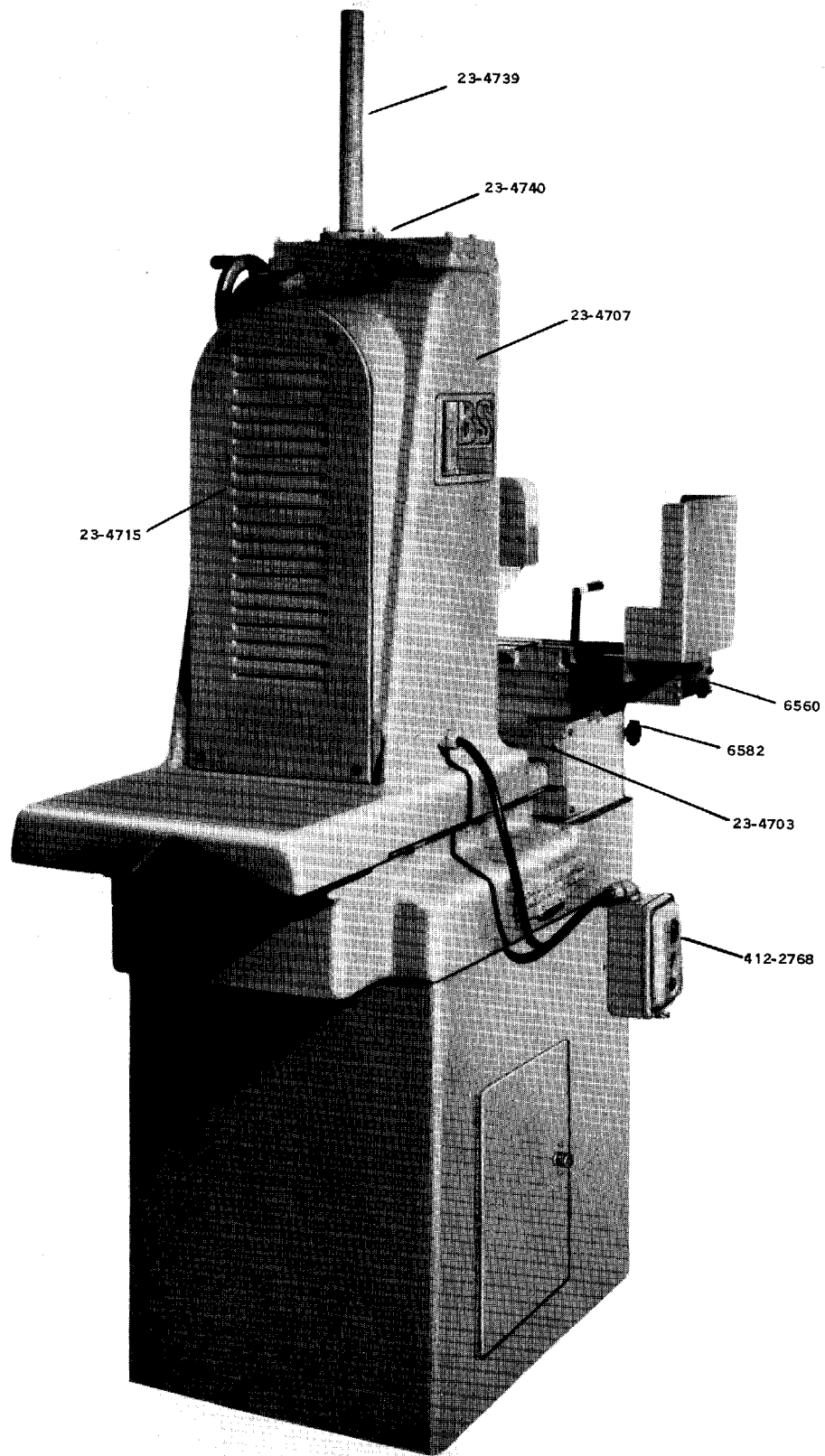


Front View

**ORDER BY PART NUMBER AND NAME; ALSO GIVE
SIZE, STYLE AND SERIAL NUMBER OF MACHINE.
(See instructions "How to order Repair Parts" in this book.)**

Front View

6558	Indicator Ring Clamp Nut
6560	Drum Band Tension Nut
6582	Table Drive Locking Knob
23-4668	Base
23-4680	Table
23-4681	Table End Plate
23-4683	Table Guard, Front and Rear
23-4684	Table Dog
23-4687	Table Dog Stop
23-4689	Cross Feed Bracket
23-4694	Cross Feed Handwheel
23-4696	Table Travel Lever
23-4702	Table Dust Guard
23-4707	Upright
23-4721	Wheel Guard
23-4730	Elevating Screw Handwheel
23-4975	Elevating Handwheel Indicator
412-2768	Spindle Starter
461-12	Machine Lubricator

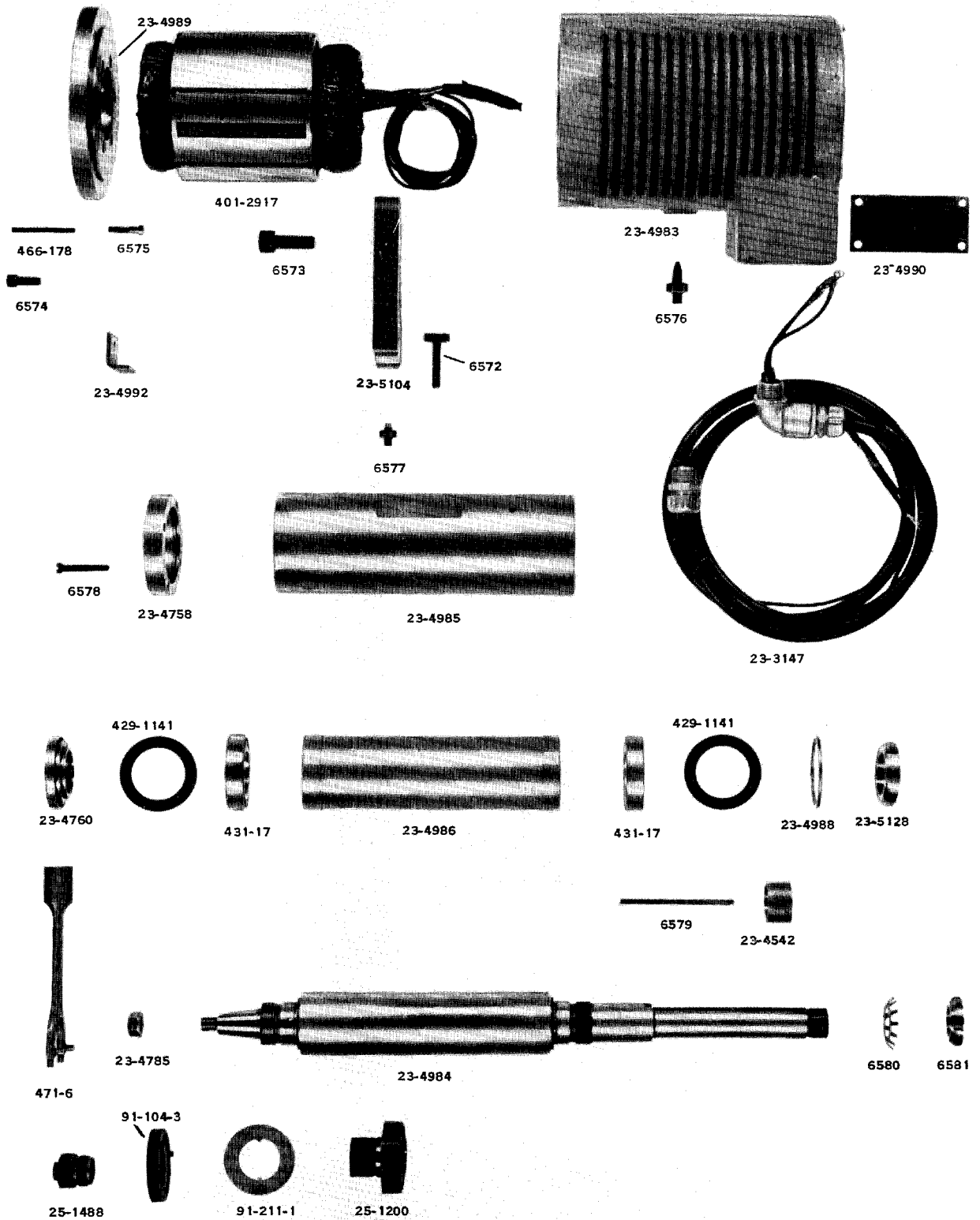


Rear View

**ORDER BY PART NUMBER AND NAME; ALSO GIVE
SIZE, STYLE AND SERIAL NUMBER OF MACHINE.
(See instructions "How to order Repair Parts" in this book.)**

Rear View

6560	Drum Band Tension Nut
6582	Table Drive Locking Knob
23-4703	Table Bed Rear Guard
23-4707	Upright
23-4715	Upright Cover, Rear
23-4739	Elevating Screw Guard
23-4740	Elevating Screw Guard Flange
412-2768	Spindle Starter



Antifriction-Bearing Spindle—Direct Drive and Wheel Sleeve Parts.

**ORDER BY PART NUMBER AND NAME; ALSO GIVE
SIZE, STYLE AND SERIAL NUMBER OF MACHINE.
(See instructions "How to order Repair Parts" in this book.)**

***Antifriction-Bearing Spindle—Direct Drive**

and Wheel Sleeve Parts.

6572	Spindle Head Screw	23-4983	Motor Housing
6573	Spindle Sleeve Support Screw	23-4984	Spindle (Includes 23-4760, 23-4985 and 23-4986)
6574	Motor Housing Cap Screw, Outer	23-4985	Spindle Sleeve
6575	Motor Housing Cap Screw, Inner	23-4986	Spindle Ball Bearing Spacer
6576	Motor Housing Screw and Nut	23-4988	Bearing Fitting Washer
6577	Adjusting Screw and Nut	23-4989	Motor Housing Mounting Cap
6578	Bearing Dust Guard Screw	23-4990	Motor Housing Cover
6579	Spindle Key	23-4992	Wheel Diameter Control Bracket
6580	Rotor Lockwasher	23-5104	Spindle Sleeve Front Support
6581	Rotor Locknut	23-5128	Ball Bearing Locknut
†23-3147	Spindle Motor Cable	‡401-2917	Spindle Motor 1 H.P.
23-4542	Rotor Spacer, Inner	429-1141	Friction Seal Washer
23-4758	Spindle Bearing Dust Guard	431-17	Spindle Ball Bearing
23-4760	Ball Bearing Retaining Nut	466-178	Felt Wicking
23-4785	Spindle Nut	NOT SHOWN	
		623-103-618	Direct Drive Spindle, Assembled

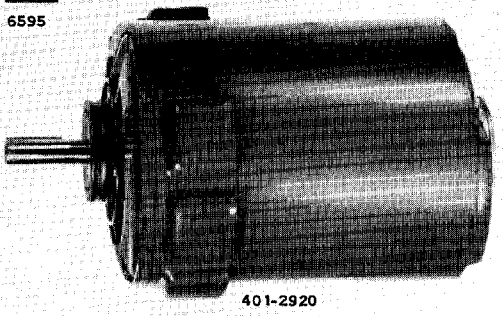
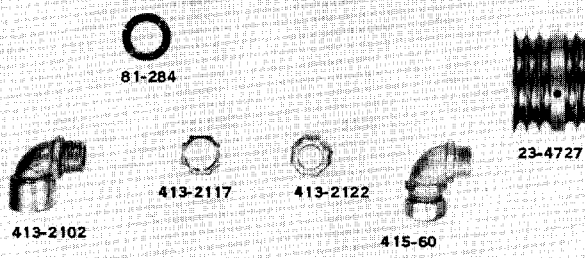
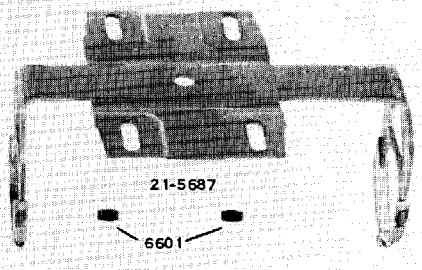
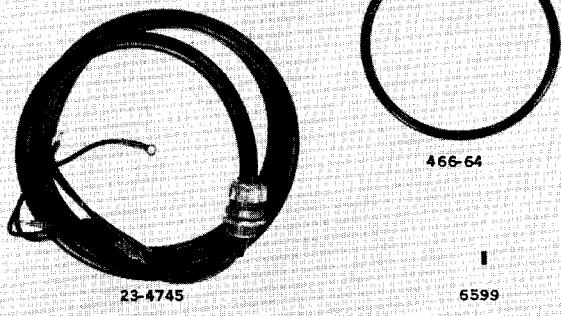
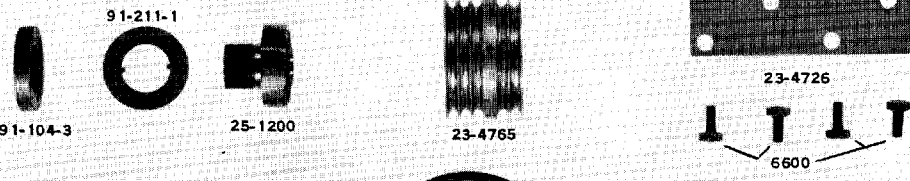
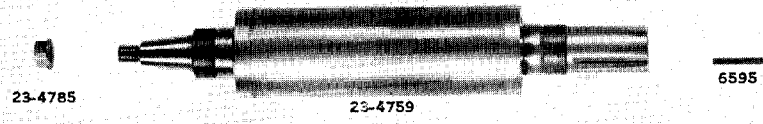
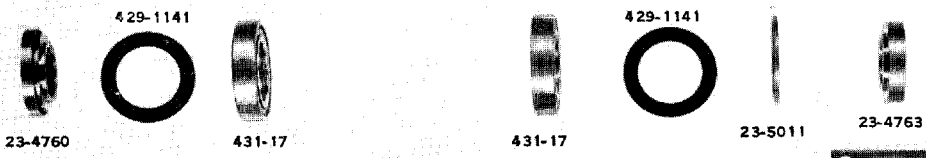
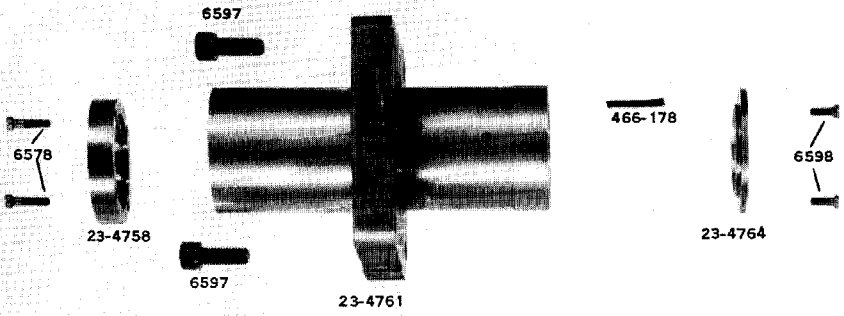
WHEEL SLEEVE PARTS

25-1200	Wheel Sleeve (Includes 91-1043 and 91-211-1)
25-1488	Wheel Sleeve Pulley
91-104-3	Wheel Sleeve Nut
91-211-1	Wheel Sleeve Washer
471-6	Wheel Sleeve Wrench

†Specify voltage, frequency and phase of power supply.

‡Give complete motor nameplate data.

*It is strongly recommended that the Complete Spindle Unit be returned to factory for reconditioning.



ORDER BY PART NUMBER AND NAME; ALSO GIVE SIZE, STYLE AND SERIAL NUMBER OF MACHINE. (See instructions "How to order Repair Parts" in this book.)

***Anti-friction- Bearing Spindle and Oriflex Drive Parts**

***Anti-friction- Bearing Spindle Parts**

6578	Bearing Dust Guard Screw	23-4785	Spindle Nut
6597	Bearing Sleeve Mounting Screw	23-5011	Spindle Rear Bearing Spacer
6598	Bearing Dust Guard Screw, Rear		
23-4758	Spindle Dust Guard	25-1200	Wheel Sleeve (Includes 91-104-3 and 91-211-1)
23-4759	Spindle (Includes 23-4760, 23-4762, 23-4763 and 23-4785)		
23-4760	Ball Bearing Retaining Nut	91-104-3	Wheel Sleeve Nut
23-4761	Spindle Bearing Sleeve	91-211-1	Wheel Sleeve Washer
23-4762	Ball Bearing Spacer	429-1141	Friction Seal Washer
23-4763	Ball Bearing Retaining Nut	431-17	Spindle Ball Bearing
23-4764	Spindle Bearing Dust Guard, Rear	466-178	Felt Wicking

NOT SHOWN

623-15-618 Anti-friction Bearing Spindle, Assembled

Oriflex Spindle Drive Parts

6595	Pulley Key	23-4765	Spindle Pulley
6599	Pulley Screw		
6600	Motor Mounting and Base Screw	81-284	Conduit Washer
6601	Motor Mounting Nuts	‡401-2920	Motor, 1 H.P.
21-5687	Internal Grinding Motor Base	413-2102	Elbow, Short, 1/2" Galv.
23-4726	Spindle Motor Mounting Plate	413-2117	Locknut, 1/2" Galv.
23-4727	Spindle Motor Pulley	413-2122	Bushing Galv.
‡23-4745	Wheel Motor Cable	415-60	Cord Connector Elbow
		466-64	"O" Ring

‡Specify voltage, frequency and phase of power supply.

‡Give complete motor nameplate data.

*It is strongly recommended that the Complete Spindle Unit be returned to factory for reconditioning.



23-2682



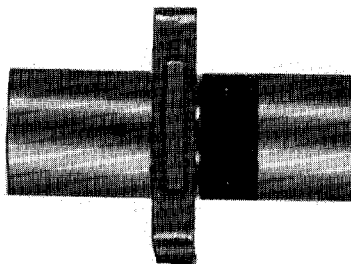
6590



23-5135



6591



23-4993



23-2703



23-5145



23-2676



23-2680



23-5137



3878



23-5138



23-5139



23-5141



23-5142



23-5143



23-2065



23-5144



6592



91-100-212



6593



6594



91-604-5



23-5136



6595



23-5146

Plain Bearing Spindle Parts

**ORDER BY PART NUMBER AND NAME; ALSO GIVE
SIZE, STYLE AND SERIAL NUMBER OF MACHINE.
(See instructions "How to order Repair Parts" in this book.)**

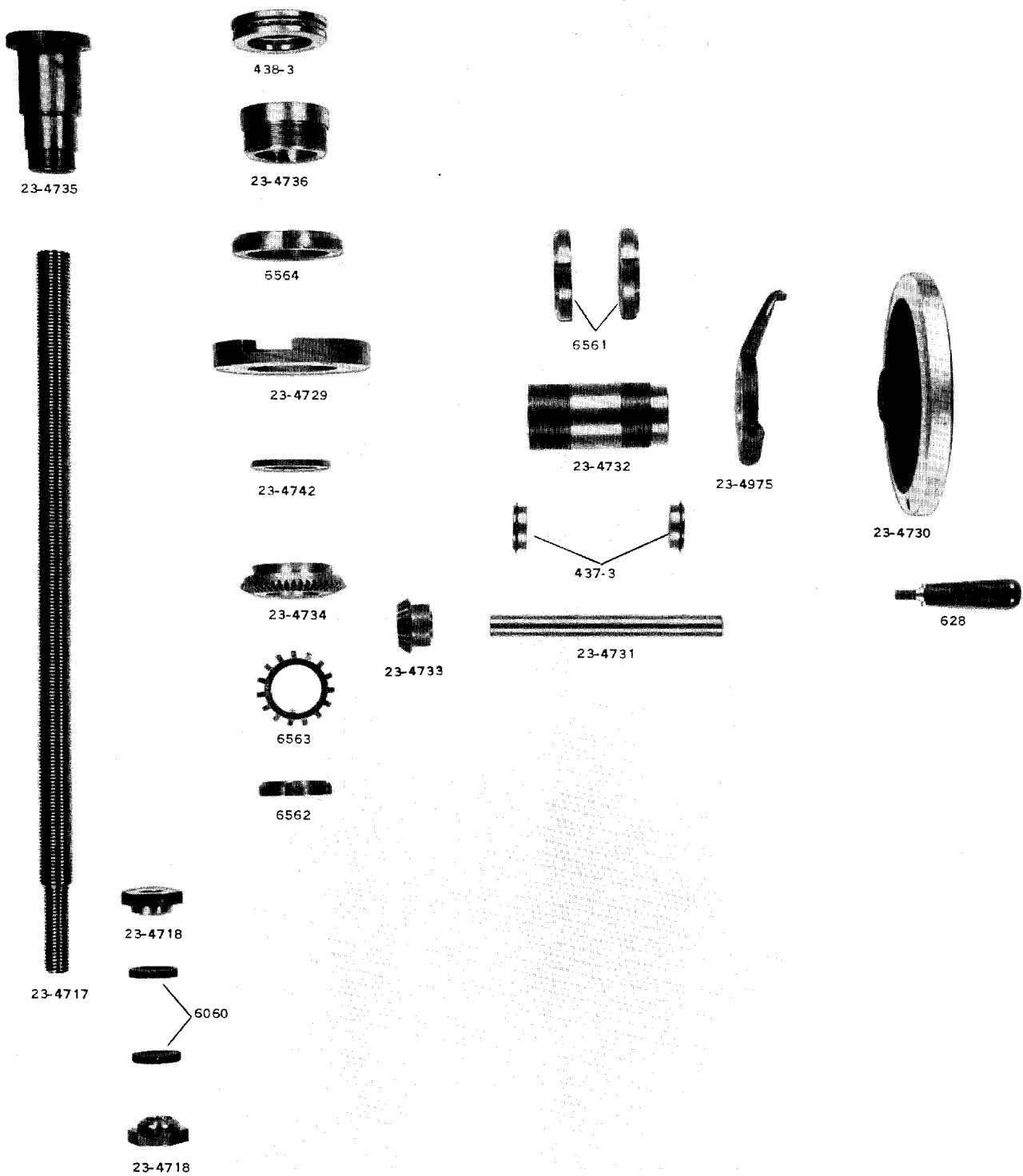
***Plain Bearing Spindle Parts
(Used with Oriflex Drive)**

3878	Thrust Spring
6590	Spindle Sleeve Shoe Screw
6591	Spindle Sleeve Shoe
6592	Spindle Stop Collar Screw
6593	Spindle Pulley Screw, Large
6594	Spindle Pulley Screw, Small
6595	Spindle Pulley Key
23-2065	Spindle Oil Slinger
23-2676	Spindle Dust Guard
23-2680	Thrust Washer, Spindle Front Box
23-2682	Spindle Oiler
23-2703	Spindle Dust Guard Gasket
23-4993	Spindle Bearing Sleeve
23-5135	Opening Cover, Spindle Bearing Sleeve
23-5136	Spindle
23-5137	Spindle Front Box
23-5138	Thrust Spring Retainer
23-5139	Thrust Collar Washer
23-5141	Spindle Thust Collar
23-5142	Spindle Stop Collar
23-5143	Spindle Rear Box
23-5144	Spindle Dust Guard, Rear
23-5145	Spindle Dust Guard Gasket, Rear
23-5146	Spindle Pulley
91-100-212	Clutch Gear Spring
91-604-5	Spindle Nut

NOT SHOWN

23-5140	Spindle Sleeve Screw Bushing
623-14-618	Plain Bearing Spindle, Assembled

*It is strongly recommended that the Complete Spindle Unit be returned to factory for reconditioning.



Elevating Mechanism Parts

**ORDER BY PART NUMBER AND NAME; ALSO GIVE
SIZE, STYLE AND SERIAL NUMBER OF MACHINE.
(See instructions "How to order Repair Parts" in this book.)**

Elevating Mechanism Parts

628	Elevating Handwheel Handle
6060	Elevating Screw Clamp Washer
6561	Handwheel Sleeve Nut
6562	Head Elevating Screw Nut
6563	Head Elevating Screw Lock Washer
6564	Elevating Support Nut
23-4717	Head Elevating Screw
23-4718	Head Elevating Screw Clamp Nut
23-4729	Elevating Mechanism Support
23-4730	Elevating Screw Handwheel
23-4731	Elevating Handwheel Shaft
23-4732	Elevating Handwheel Bearing Sleeve
23-4733	Head Elevating Screw Pinion
23-4734	Head Elevating Screw Gear
23-4735	Head Elevating Nut
23-4736	Head Elevating Nut Support
23-4742	Head Elevating Nut Spacer
23-4975	Elevating Handwheel Indicator
437-3	Snap Ring Ball Bearing
438-3	Ball Thurst Bearing

6565

23-4725

23-4672

6566

6567

23-4724

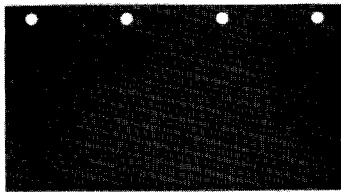
6568



23-4723

6569

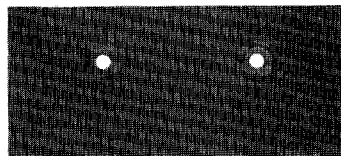
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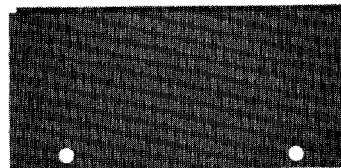
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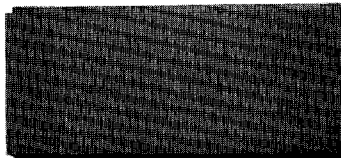
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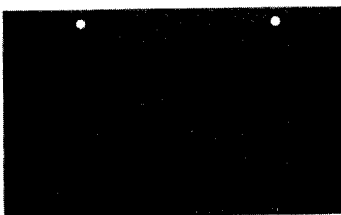
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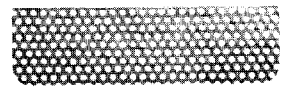
23-4711



23-4709



23-4712



23-5112



6570

479-111

479-70

23-4956

6569

6571



23-4719



23-4719

Spindle Head and Upright Parts

**ORDER BY PART NUMBER AND NAME; ALSO GIVE
SIZE, STYLE AND SERIAL NUMBER OF MACHINE.
(See instructions "How to order Repair Parts" in this book.)**

Spindle Head and Upright Parts

- 6565 Felt Retainer Screw
- 6566 Spindle Head Set Screw
- 6567 Spindle Head Shoe
- 6568 Spindle Head Gib Pin
- 6569 Stabilizer Button Spring
- 6570 Spindle Head Rod Nut
- 6571 Upright Strap Screw

- 23-4672 Felt Wiper, Spindle Head Ways
- 23-4708 Head Elevating Screw Guard, Upper
- 23-4709 Head Elevating Screw Guard, Intermediate
- 23-4710 Head Elevating Screw Guard, Lower
- 23-4711 Front Outer Dust Guard
- 23-4712 Intermediate Dust Guard
- 23-4719 Upright Strap
- 23-4723 Spindle Head Gib
- 23-4724 Adjusting Screw, Spindle Head
- 23-4725 Felt Retainer, Spindle Head Ways
- 23-4956 Spindle Head Stabilizer Button
- 23-5112 Upright Outlet Vent Cover

- 479-70 Upright Strap Plug Button
- 479-111 Spindle Head Threaded Rod

- NOT SHOWN
- 23-4720 Spindle Head

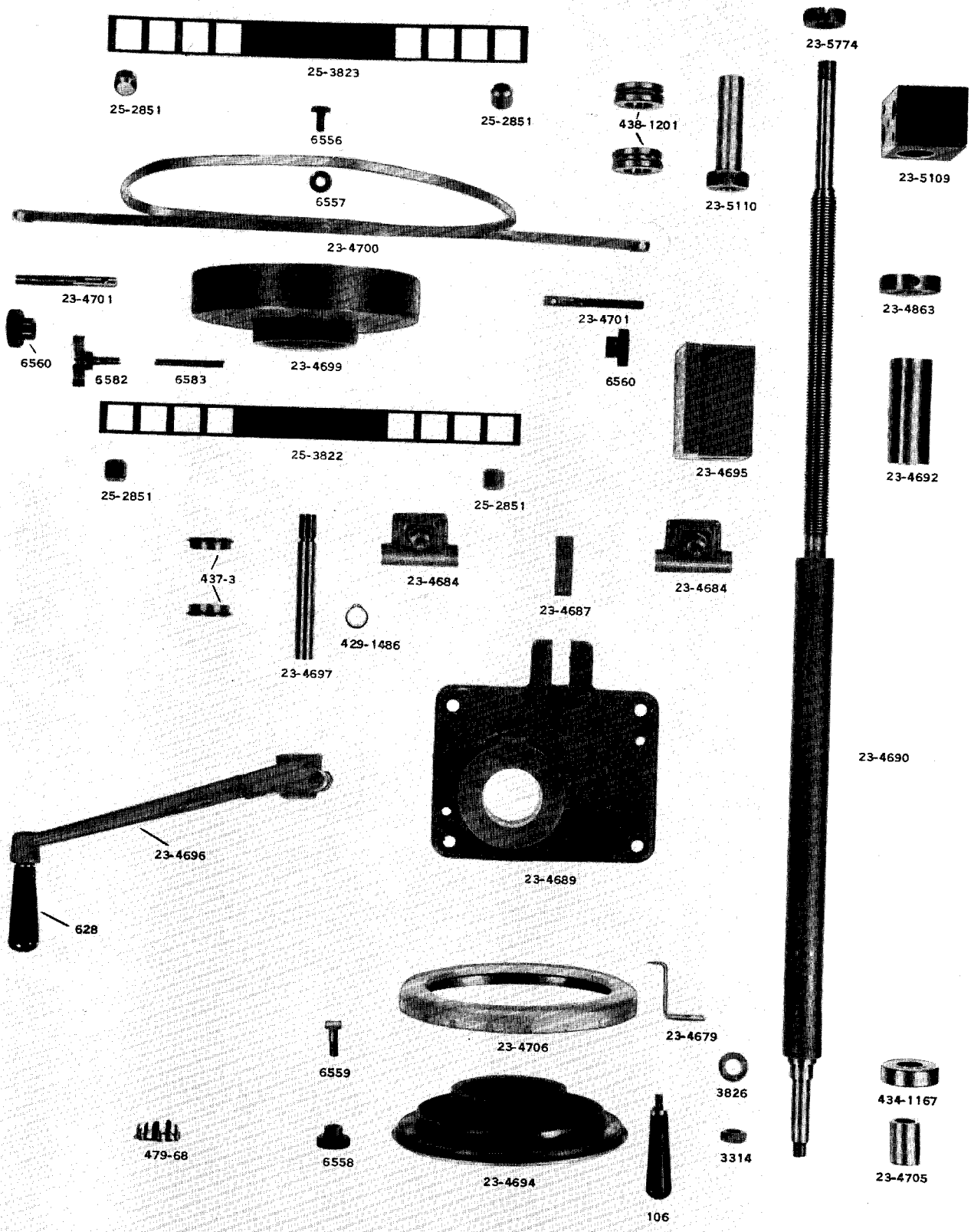
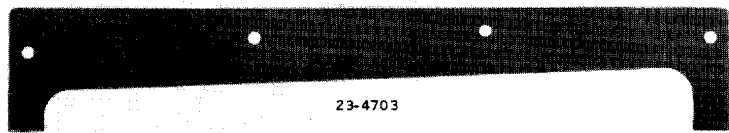
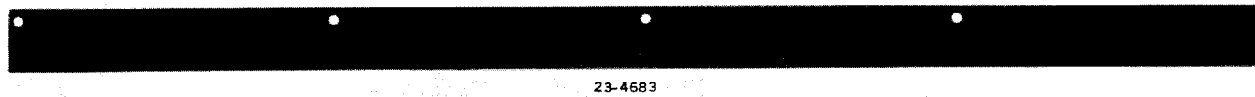
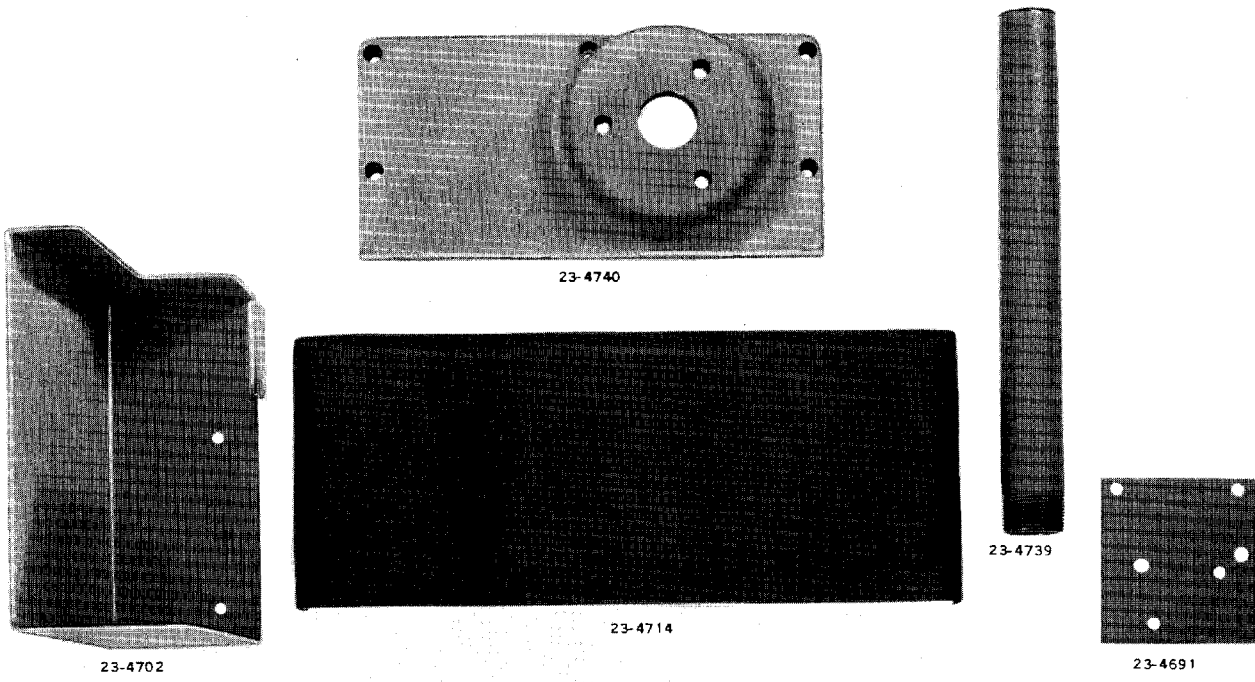


Table and Cross Feed Mechanism

**ORDER BY PART NUMBER AND NAME; ALSO GIVE
SIZE, STYLE AND SERIAL NUMBER OF MACHINE.
(See instructions "How to order Repair Parts" in this book.)**

Table and Cross Feed Mechanism

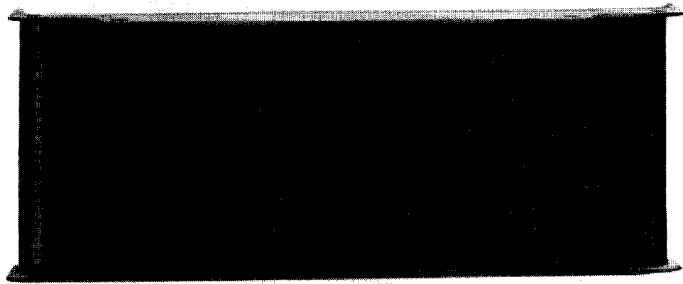
106	Cross Feed Handwheel Handle
628	Table Travel Lever Handle
3314	Cross Feed Screw Check Nut
3826	Check Nut Washer
6556	Lever Shaft Screw
6557	Lever Shaft Washer
6558	Indicator Ring Clamp Nut
6559	Indicator Ring Clamp Nut
6560	Drum Band Tension Nut
6582	Table Drive Locking Knob
6583	Table Drive Locking Shoe
23-4679	Cross Feed Handwheel Finger
23-4684	Table Dog
23-4687	Table Dog Stop
23-4689	Cross Feed Bracket
23-4690	Cross Feed Screw
23-4692	Cross Feed Nut
23-4694	Cross Feed Handwheel
23-4695	Cross Feed Nut Support (Includes 23-4692)
23-4696	Table Travel Lever
23-4697	Table Travel Lever Shaft
23-4699	Table Travel Drum
23-4700	Table Drum Band
23-4701	Table Drum Band Holder
23-4705	Cross Feed Screw Bearing Spacer
23-4705	Cross Feed Indicator Ring
23-4863	Cross Feed Stop Collar
23-5109	Cross Feed Screw Support, Rear
23-5110	Cross Feed Screw Bearing Sleeve
23-5774	Cross Feed Screw Bearing Nut
25-2851	Roller
25-3822	Table Roll Cage, Flatway
25-3823	Table Roll Cage, Vee Way
429-1486	External Retaining Ring
434-1167	Double Seal Ball Bearing
437-3	Snap Ring Ball Bearing
438-1201	Ball Thrust Bearing
479-68	Plug Button



23-4681



25-3107



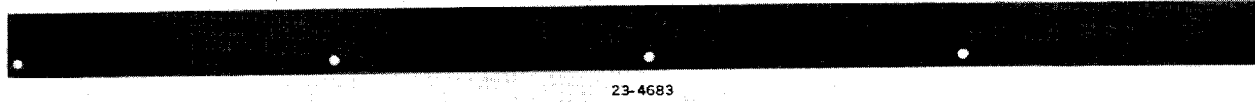
23-5088



25-3107



23-4681



Miscellaneous Guards and Covers

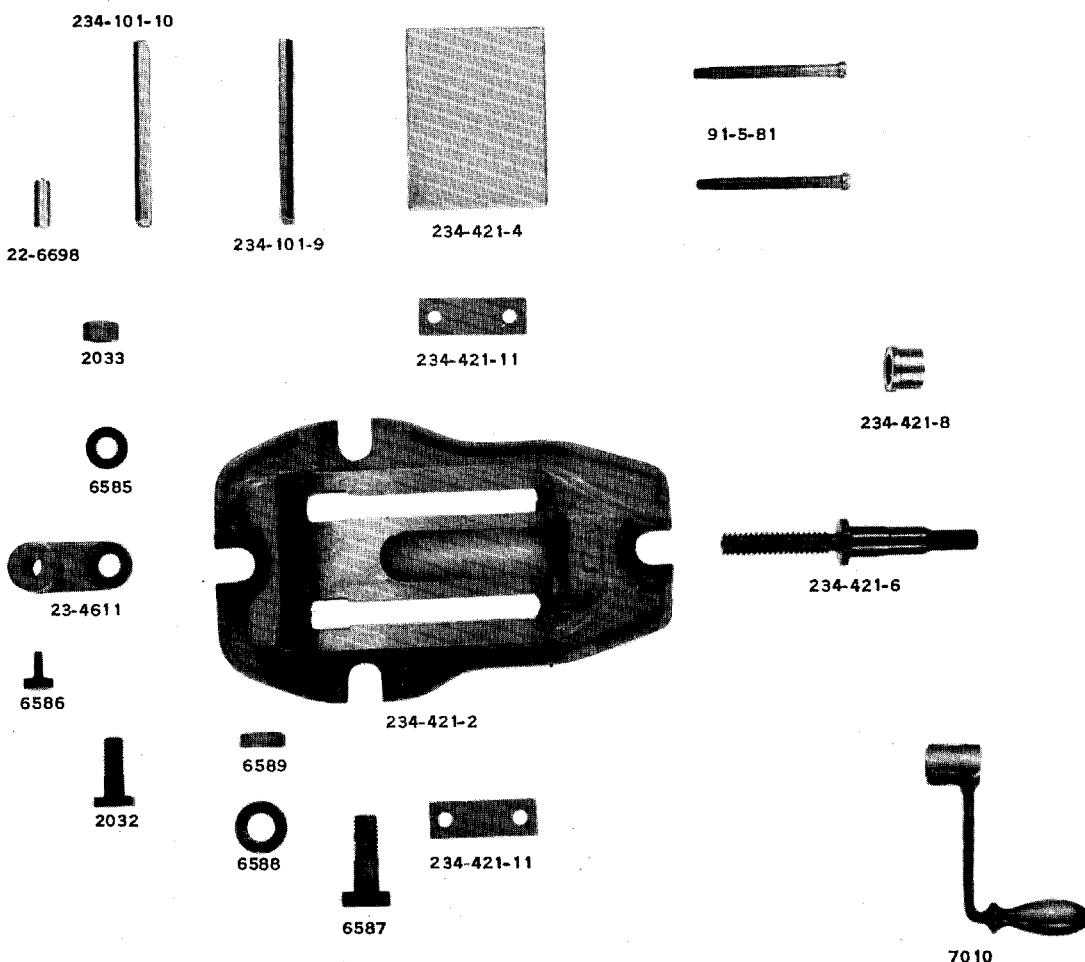
**ORDER BY PART NUMBER AND NAME; ALSO GIVE
SIZE, STYLE AND SERIAL NUMBER OF MACHINE.
(See instructions "How to order Repair Parts" in this book.)**

Miscellaneous Guards and Covers

23-4681	Table End Plate
23-4683	Table Guard (Front and Rear)
23-4691	Junction Bar Mounting Plate
23-4702	Table Dust Guard
23-4703	Table Bed Rear Guard
23-4714	Upright Splash Guard
23-4739	Elevating Screw Guard
23-4740	Elevating Screw Guard Flange
23-5088	Base Ways Guard
25-3107	Bed End Plate

ORDER BY PART NUMBER AND NAME; ALSO GIVE SIZE, STYLE AND SERIAL NUMBER OF BOTH MACHINE AND ATTACHMENT.
 (See instructions "How to order Repair Parts" in this book.)

Wheel Truing Fixture and Vise Parts



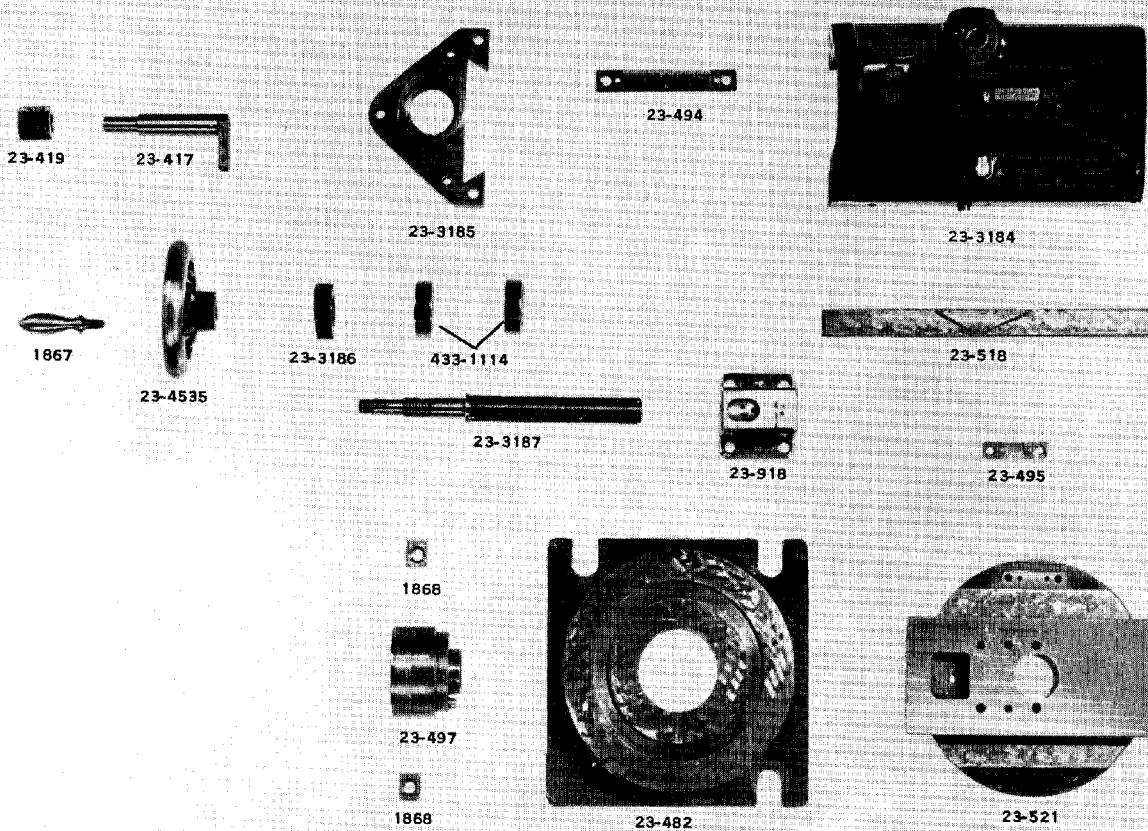
2032	Truing Fixture Clamp Bolt	91-5-81	Vise Jaw Screw
2033	Truing Fixture Clamp Nut	234-101-9	Vise Loose Jaw
6585	Truing Fixture Clamp Washer	234-101-10	Vise Fixed Jaw
6586	Truing Fixture Set Screw	234-421-2	Vise Bed
6587	Vise Clamp Bolt	234-421-4	Vise Slide
6588	Vise Clamp Washer	234-421-6	Vise Screw
6589	Vise Clamp Nut	234-421-8	Vise Screw Collar
7010	Vise Crank	234-421-11	Vise Strap
*22-6698	Diamond Tool		
23-4611	Wheel Truing Fixture (Includes 2032, 2033, 6585 and 6586)		

*Standard equipment furnished with machine.

**ORDER BY PART NUMBER AND NAME; ALSO GIVE *SIZE, STYLE*
AND *SERIAL NUMBER* OF BOTH MACHINE AND ATTACHMENT.**

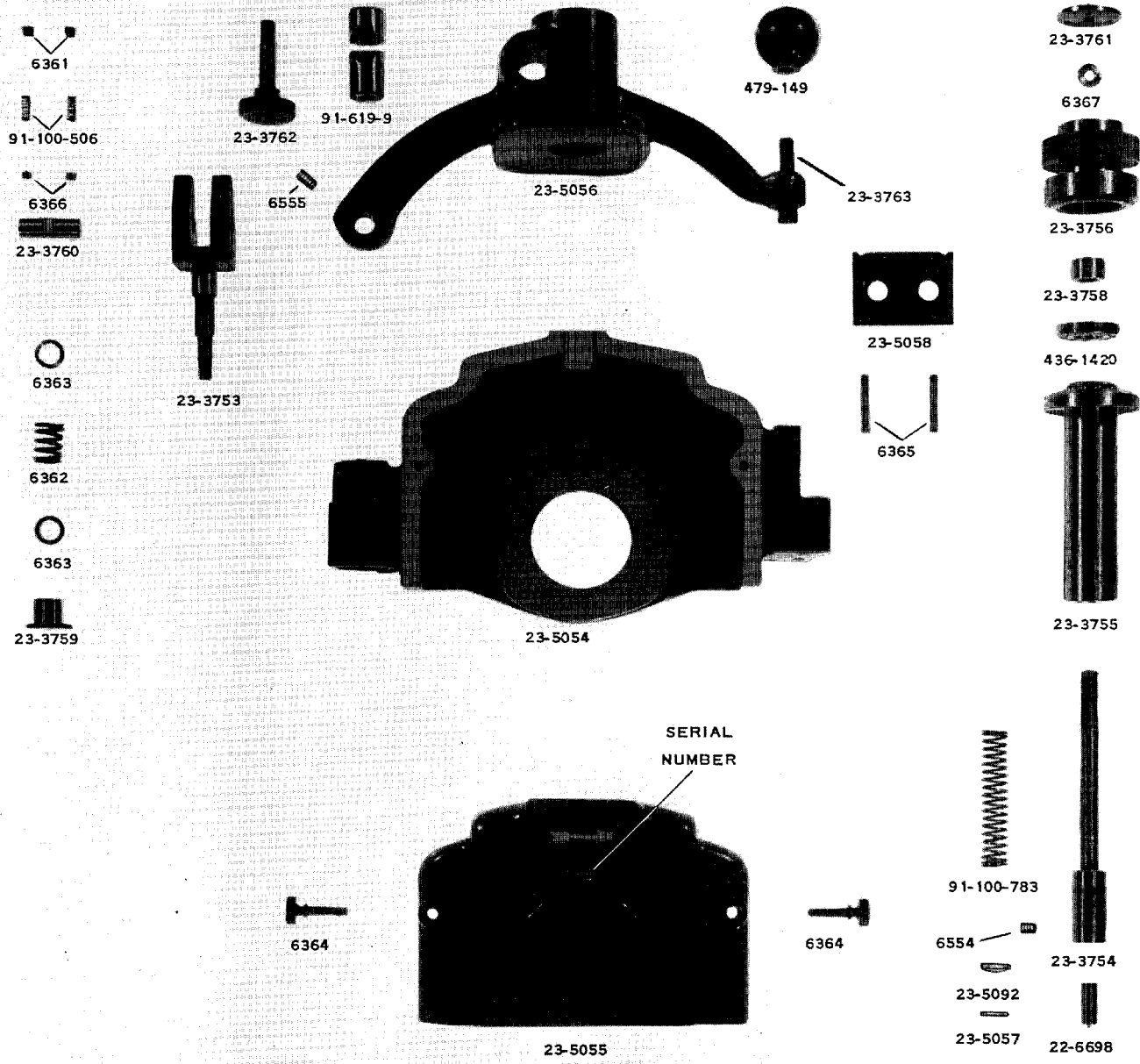
(See instructions "How to order Repair Parts" in this book.)

Radius and Angular Wheel Truing Attachment



- | | | | |
|--------|---------------------------|----------|-----------------------------|
| 1867 | Handwheel Handle | 23-518 | Slide Gib |
| 1868 | Base Tongue | 23-521 | Swivel |
| | | 23-918 | Adjusting Nut |
| 23-417 | Diamond Setting Gage | *23-3184 | Slide (Includes 23-3185) |
| 23-419 | Diamond Setting Gage Knob | 23-3185 | Adjusting Screw Bearing Cap |
| 23-482 | Base | 23-3186 | Adjusting Screw Bearing Nut |
| 23-494 | Slide Scale | 23-3187 | Adjusting Screw |
| 23-495 | Slide Plate | 23-4535 | Handwheel |
| 23-497 | Swivel Pivot | SPX1114 | Adjusting Screw Bearing |

*Serial number stamped on this part.



Over-The-Wheel Truing Attachment

**ORDER BY PART NUMBER AND NAME; ALSO GIVE
SIZE, STYLE AND SERIAL NUMBER OF MACHINE.
(See instructions "How to order Repair Parts" in this book.)**

Over-The-Wheel Truing Attachment

- 6361 Compression Spring Retainer Screw
- 6362 Lever Swivel Spring
- 6363 Swivel Spring Washer
- 6364 Wheel Guard Cover Screw
- 6365 Guide Plate Adjusting Screw
- 6366 Compression Shoe
- 6367 Tool Holder Stopping Washer
- 6554 Diamond Tool Set Screw
- 6555 Lever Fulcrum Set Screw

- *22-6698 Diamond Tool

- 23-3753 Lever Swivel
- 23-3754 Diamond Tool Holder
- 23-3755 Diamond Tool Holder Sleeve
- 23-3756 Diamond Tool Holder Adjusting Dial
- 23-3758 Diamond Tool Holder Adjusting Nut
- 23-3759 Lever Swivel Collar
- 23-3760 Lever Fulcrum
- 23-3761 Adjusting Dial Cover
- 23-3762 Sleeve Clamp Screw
- 23-3763 Lever Rest
- 23-5054 Wheel Guard (Includes 6364, 6365 and 23-5055)
- 23-5055 Wheel Guard Cover
- 23-5056 Diamond Tool Operating Lever (Includes 6555, 23-3762 and 91-619-9)
- 23-5057 Ring Retainer, Piston Rod Scraper
- 23-5058 Lever Guide Plate
- 23-5092 Ring, Piston Rod Scraper

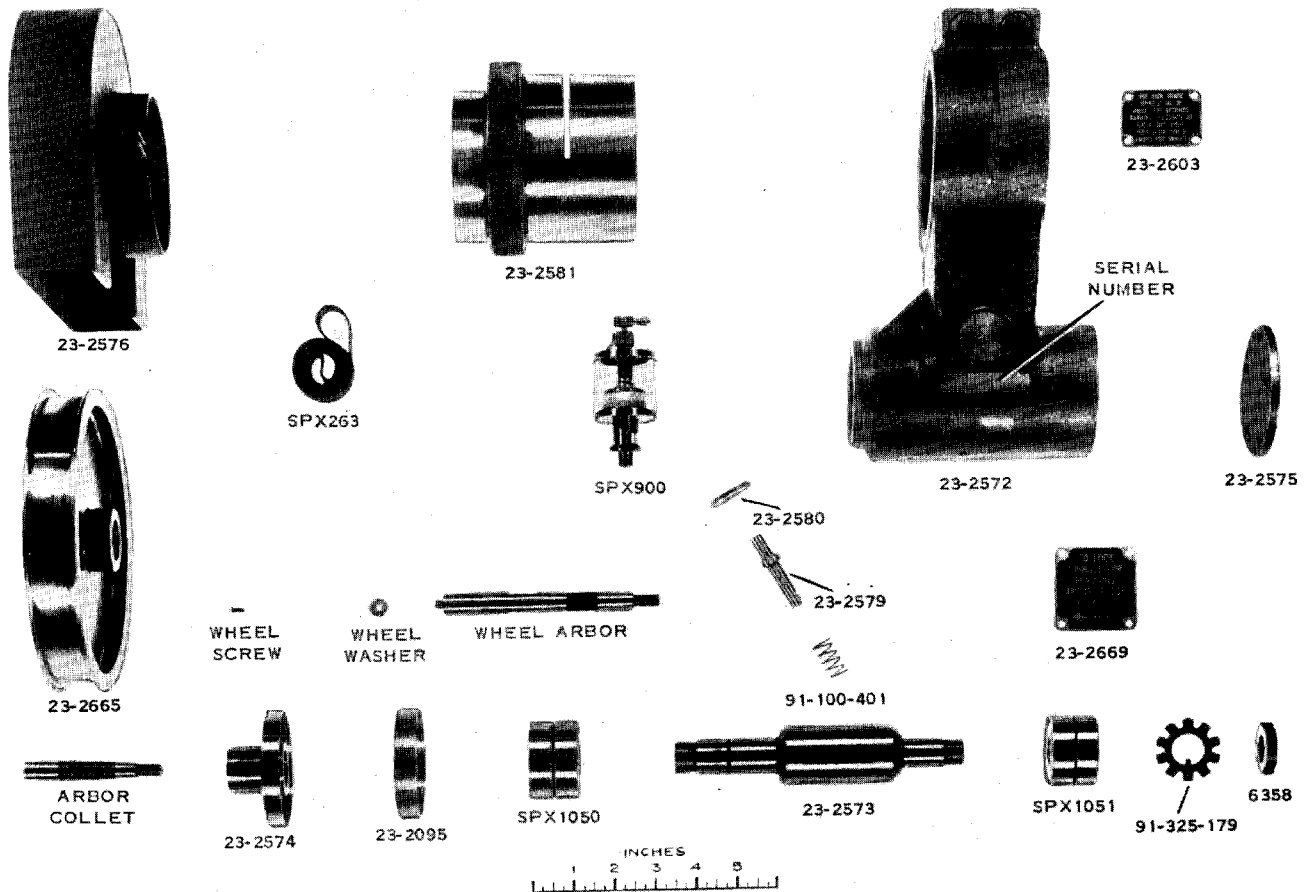
- 91-100-506 Shoe Compression Spring
- 91-100-783 Tool Holder Spring
- 91-619-9 Sleeve Clamp Bushing, Tool Holder

- 436-1420 Adjusting Dial Ball Bearing
- 479-149 Gear Shift Ball

- NOT SHOWN
- 23-3775 Diamond Holder, Assembled
(Includes 23-3754, 23-3755, 23-3756, 23-3758, 23-3761,
23-5057, 23-5092, 91-100-783 and 436-1420)

ORDER BY PART NUMBER AND NAME; ALSO GIVE SIZE, STYLE AND SERIAL NUMBER OF BOTH MACHINE AND ATTACHMENT.
(See instructions "How to order Repair Parts" in this book.)

High Speed Surface Grinding Attachment

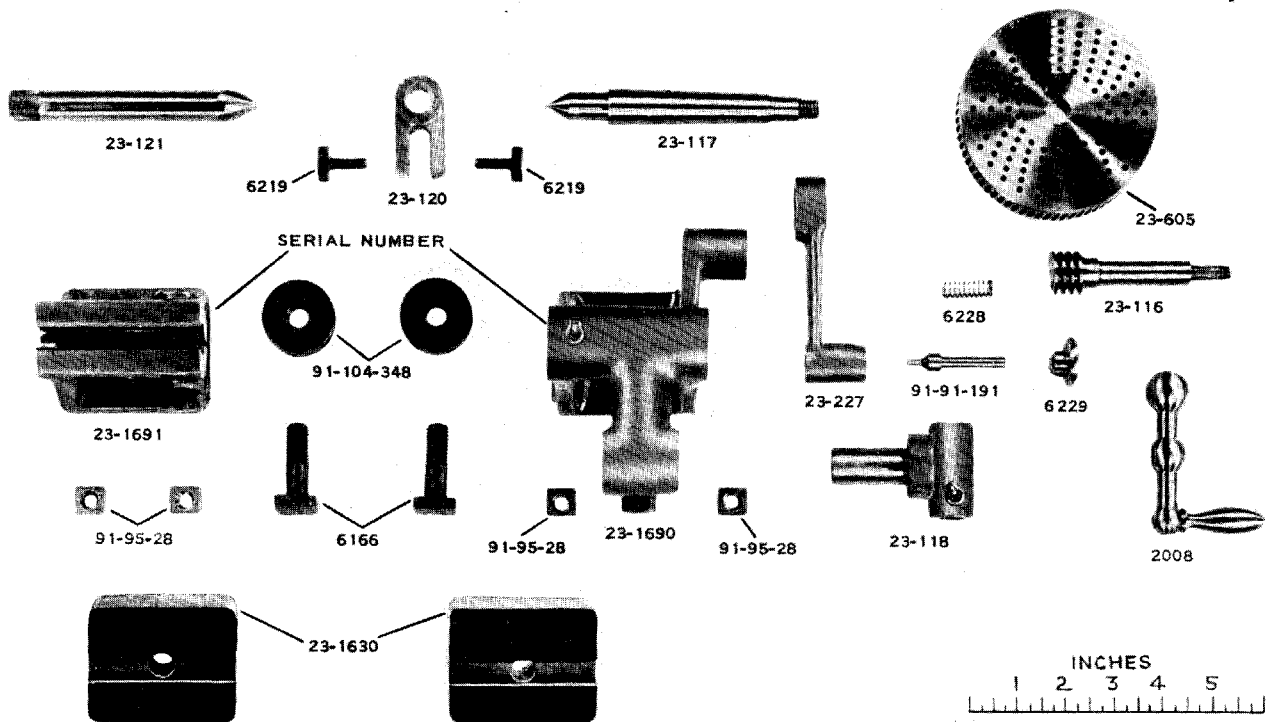


- | | | | |
|------------|------------------------------|---------|--|
| 23-2095 | Front Bearing Retainer | SPX900 | Sight Feed Oiler |
| *23-2572 | Spindle Housing | SPX1050 | Spindle Ball Bearing, Front (Matched Pair) |
| 23-2573 | Spindle | SPX1051 | Spindle Ball Bearing, Rear (Matched Pair) |
| 23-2574 | Spindle Pulley | | |
| 23-2575 | Spindle Housing Cover | | |
| 23-2576 | Driving Pulley Belt Guard | | |
| 23-2579 | Spindle Locking Pin | | |
| 23-2580 | Spindle Locking Pin Guide | | |
| 23-2581 | Belt Take-Up Eccentric | | |
| 23-2603 | Oiler Instruction Plate | | |
| 23-2665 | Driving Pulley | | |
| 23-2669 | Spindle Plunger Notice Plate | | |
| 91-325-179 | Spindle Nut Lockwasher | | |
| †SPX263 | Driving Belt | | |

‡Smooth running, oil-resistant, endless flat belt; 3/4" wide x 25 1/2" inside circumference.
 *Serial number stamped on this part.

**ORDER BY PART NUMBER AND NAME; ALSO GIVE *SIZE, STYLE*
AND *SERIAL NUMBER* OF BOTH MACHINE AND ATTACHMENT.
(See instructions "How to order Repair Parts" in this book.)**

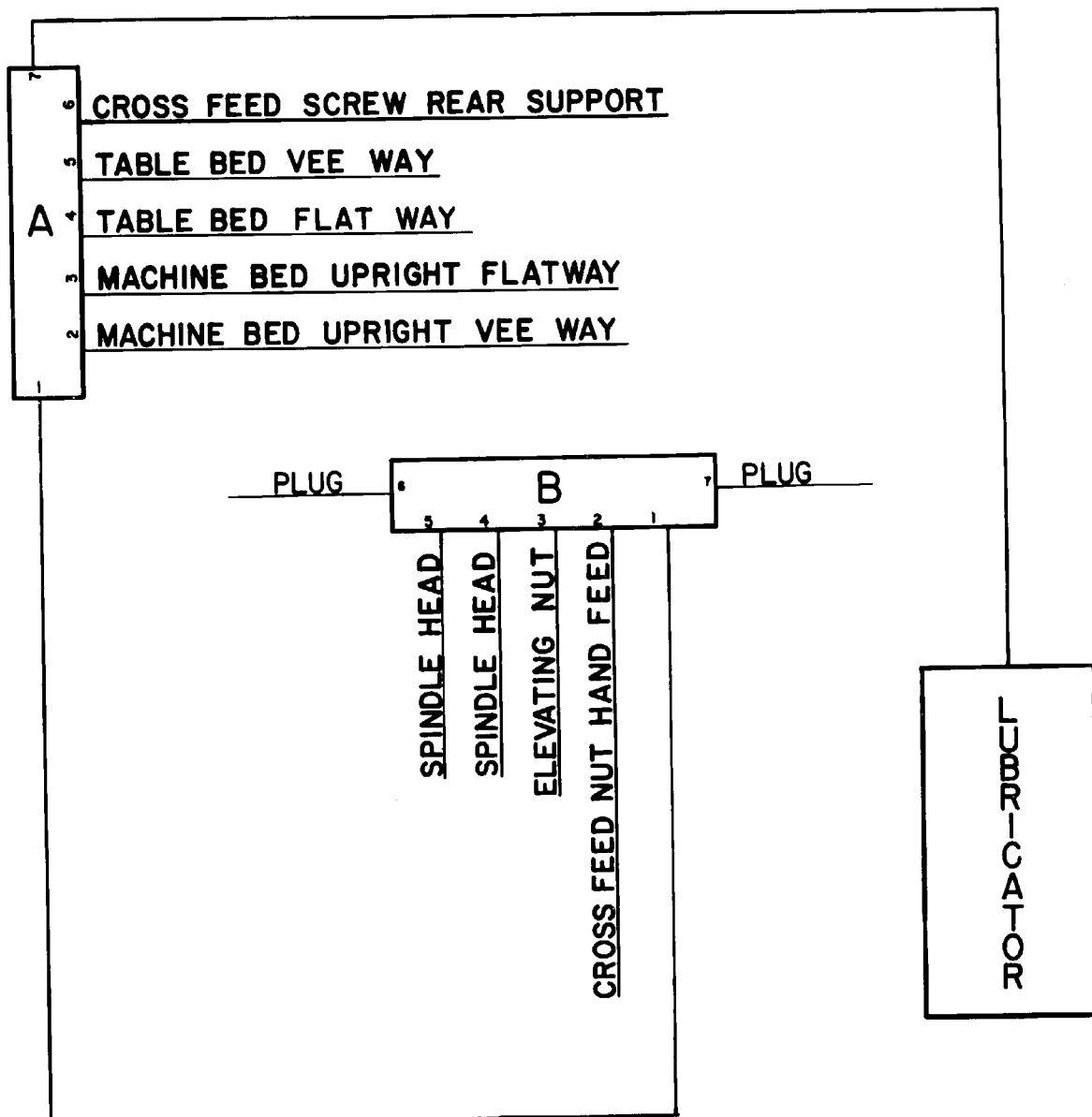
Index Centers



- | | | | |
|--------|---|------------|--------------------------------|
| 2008 | Index Worm Handle | 23-121 | Footstock Center |
| 6166 | Headstock and Footstock Clamp Bolt | 23-227 | Index Finger |
| 6219 | Work Driving Dog Clamp Screw | 23-605 | Index Worm Wheel |
| 6228 | Index Pin Spring | | |
| 6229 | Index Pin Knob | 23-1630 | Raising Block |
| 23-116 | Index Worm | *23-1690 | Headstock (Includes 91-95-28) |
| 23-117 | Headstock Center | *23-1691 | Footstock (Includes 91-95-28) |
| 23-118 | Index Worm Bearing | 91-91-191 | Index Pin |
| 23-120 | Headstock Center Driver (Includes 6219) | 91-95-28 | Headstock and Footstock Tongue |
| | | 91-104-348 | T-Clamp Bolt Nut |

*Serial Number Stamped on This Part.

Lubrication
Schematic Diagram
Piping, Fittings, Tubing, etc.



**ORDER BY PART NUMBER AND NAME; ALSO GIVE
SIZE, STYLE AND SERIAL NUMBER OF MACHINE.
(See instructions "How to order Repair Parts" in this book.)**

How to Order Lubrication Fittings

1. Give size, style and serial number of machine.
2. When ordering Junction bar, specify letter.
3. When ordering fittings located at Junction bars, specify the Junction bar by letter and the line by number. Example: Fitting required for Junction bar A, Line 1.
4. Order fittings at end of open lines by naming Junction bar with letter and line number.—Specify for "open end" of line. Example: Fitting required for open end of line 7, Junction bar A.
5. When ordering specify if the compression sleeve, nut or bushing to complete the fitting is wanted.

The Brown & Sharpe line includes the following:

Milling Machines — Universal, Plain and Vertical (including 3 Horsepower, 5 Horsepower) and the Omniversal; Manufacturing Type.

Attachments; Milling Cutters; Arbors; Adapters and Collets.

Grinding Machines — Universal; Plain; Face; Surface; Cutter and Tool; Universal and Tool. Attachments and Grinding Equipment.

Screw Machines — Automatic Screw and Automatic Cutting Off; Hand (semi-automatic); Polishing and Finishing Machine.

Attachments; Spring Collets; Feeding Fingers; Screw Machine Tools and Cams.

Other Brown & Sharpe Products:

Machinists' Tools; Electronic Measuring Equipment; Johansson Gage Blocks; Vises; Magnetic Chucks; Pumps; and other useful shop equipment.

BROWN & SHARPE MFG. CO.
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