NOTE: Parts are no longer available for this tool.

The manual will continue on the next page.

Form A433B
Dated 7/84
E.D. 7/84

SIOUX TOOLS INC.
2901 FLOYD BOULEVARD ■ SIOUX CITY, IOWA 51102 ■

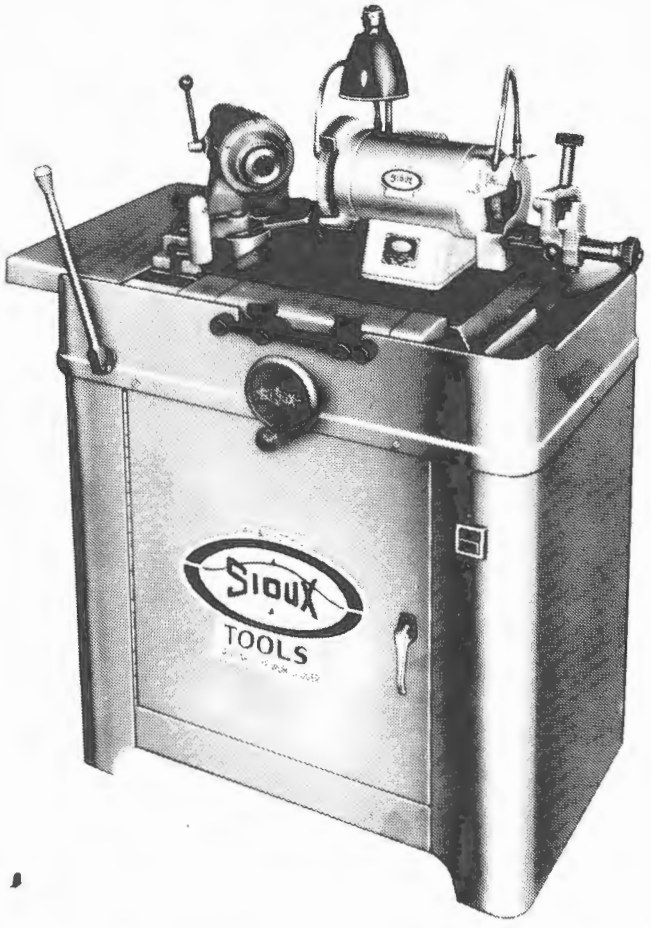
PARTS LIST

FOR SERIAL NO'S. UP TO "B" AND SERIAL NO'S. STARTING WITH "B"

INSTRUCTIONS

Sioux Valve Face Grinding Machines

No. 956-957-958



Prepare Machine For Operation

Check Motor And Line For Equal Voltage

1. Wipe off shipping grease, clean thoroughly.
2. Release carriage stops.
3. **Lubrication:** Put a few drops of SAE 20 oil in each oiler every three months or 50 hours of operation. Grinding motor is permanently lubricated and sealed. Oil pump motor every six months.
4. **Coolant:** Use Sioux grinding oil No. 250 which comes ready for use—do not dilute. Coolant tank capacity: 2½ gal.
5. Run the machine for a while, with chuck and pump motors on to warm up and distribute lubricant.
6. **Chuck Speed:** For the large chuck, (1¼" capacity) use the slower speed, with the belt on the small motor pulley. For the 11/16" chuck, use the normal speed, with belt on the larger motor pulley. See Illustration Page 6.

To produce valves with a smooth, accurate finish, wet grind all valves. Wet grinding also reduces wheel wear and the need to redress the grinding wheel.

Keep the chuck clean. It is advisable to place a rubber shield on valve stem when grinding to prevent the coolant from getting into the chuck. Avoid splashing the coolant away. A small stream is sufficient to keep the valve cool.

This is a precision built machine. To obtain best results, keep it in a shop heated to about 68°.

PRINTED IN U.S.A.

Grounding Instructions

WARNING: To protect the operator from electrical shock, this machine should be grounded.

Cord-Connected Machine

This machine may be equipped with an approved three-conductor cord and a three-prong grounding type plug to fit the proper grounding type receptacle. The green (or green and yellow) conductor in the cord is the grounding wire. Never connect the green (or green and yellow) wire to a live terminal. If your unit is for use on less than 150 volts it has a plug like that shown in Figure A. If it is for use on 150-250 volts, it has a plug like that shown in Figure D. An adapter, Figures B and C, is available for connecting Figure "A" plugs to two-prong receptacles. The green-colored rigid ear, lug, etc., extending from the adapter must be connected to a permanent ground such as a properly grounded outlet box. No adapter is available for a plug as shown in Figure D.

Use only three-wire extension cords that have three-prong grounding type plugs and three-pole receptacles that accept the tool plug.

Replace or repair damaged or worn cord immediately.

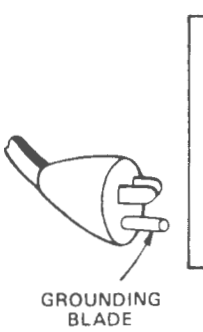


FIGURE A

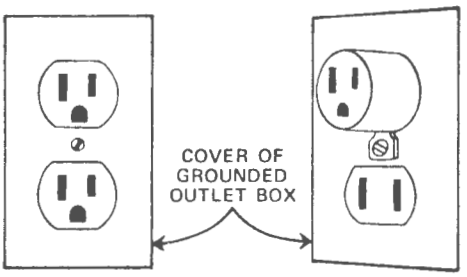


FIGURE B

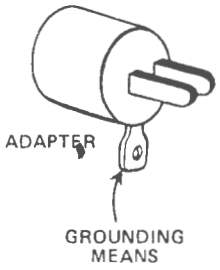


FIGURE C

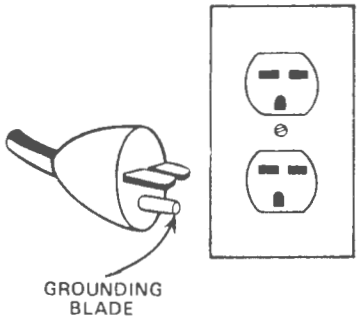


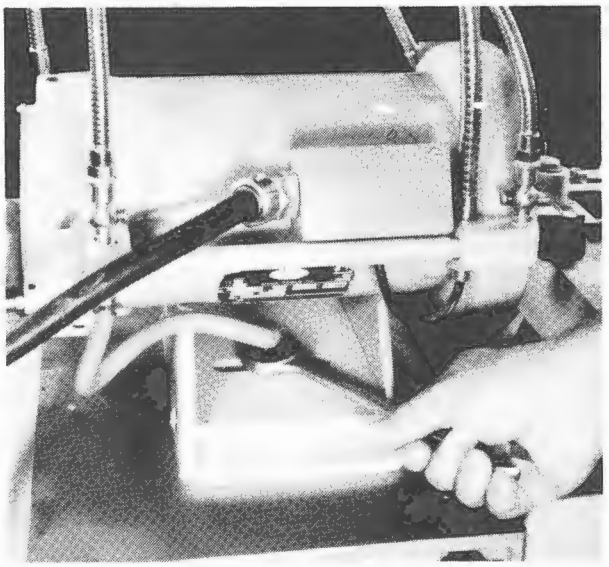
FIGURE D

Safety Instructions

1. Always handle grinding wheels carefully. Do not use a wheel which has been dropped.
2. Visually inspect all wheels for possible damage before mounting. Replace cracked wheel immediately.
3. Use only wheel flanges and flange screws furnished with this grinder: (Left flange screw has left hand thread); (Right flange screw has right hand thread).
4. Remove adjusting keys and wrenches before turning on.
5. Allow newly mounted wheels to operate at least one full minute before using. Do not stand in front of wheel during this period.
6. Use safety glasses when dressing the wheel or grinding.
7. Keep machine and work area clean. Cluttered areas invite accidents.

Dressing Left Wheel (Cat. No's. 176 & 177)

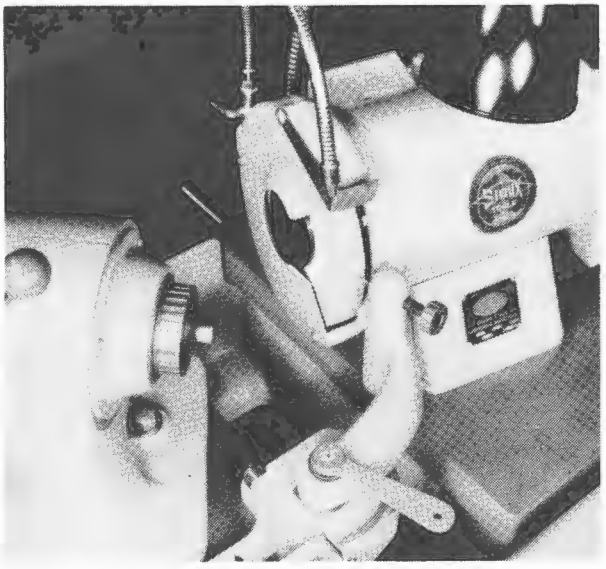
Dress wheel to clean up each time the grinding head is repositioned or when a new wheel is installed. Be sure the grinding head clamp is securely tightened before dressing or grinding. See illustration.



Position chuck carriage to extreme left. Adjust diamond holder in post so that the diamond has about 3/8" overhang in front of post. The amount of diamond overhang should be kept to a minimum in order to maintain as rigid a support as possible.

Rotate the diamond holder to the stop pin. The location of the dressing diamond should be such that excessive adjustment of the cross slide should not be required for contact with the valve after the wheel has been dressed.

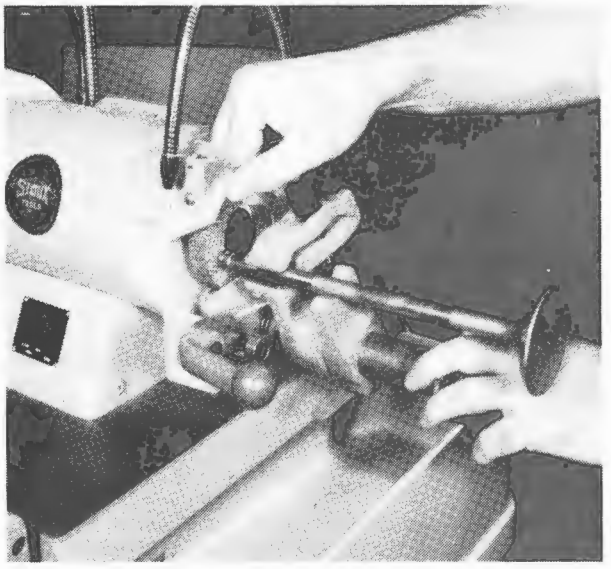
The rubber chuck shields (631B) should be used to protect the chuck from wheel grit while dressing or grinding. Start the machine and advance the grinding wheel carefully to prevent gouging. See illustration.

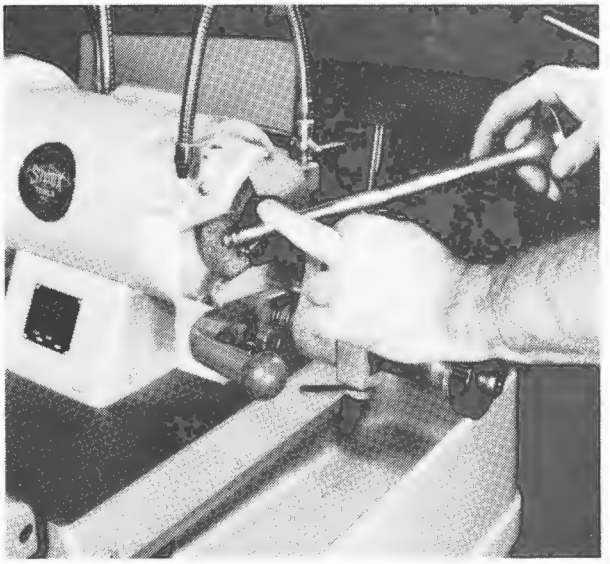


After adjusting diamond for dressing, apply coolant. Pass the diamond over the wheel while feeding cuts of .0005" or less per pass. Feed screw mirometer thimble is graduated in increments of .001". The diamond should occasionally be rotated slightly to present a new cutting edge. A rapid traverse of the diamond will result in a rough condition which is excellent for fast stock removal but poor for finish, but is sometimes used to make a hard wheel cut more freely. However, if this is continually necessary, the softer grade wheel (Cat. No. 177) should be used.

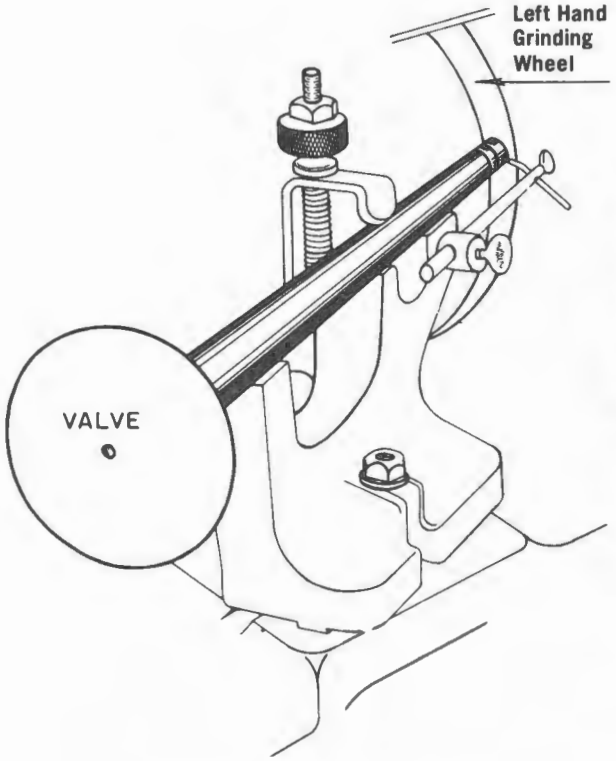
Valve Reconditioning

1. **True Valve Stem Ends:** To insure proper valve operation, square valve stem ends after dressing right grinding wheel and renew chamfer with chamfering vee. The chamfer need not exceed 1/32". See illustrations.





Small Valve Chamfering Vee



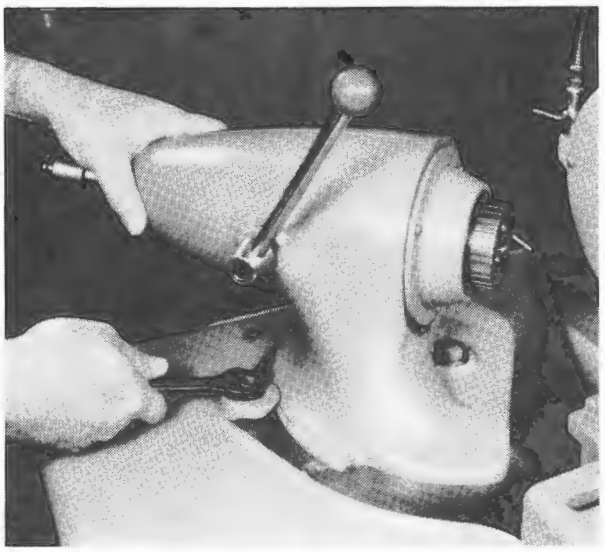
Large Valve Chamfering Vee

Mount the Vee Block on an angle and adjust the stop to the valve end.

Move the slide and grinding wheel to cut about 1/32" chamfer. Hold the valve end against the stop and turn the valve slowly.

2. Dress left grinding wheel. See instructions on Page 3 **Dressing Left Wheel.**

3. Locate chuck head at the exact angle you wish to refinish valve, then lock chuck head clamp. Chuck head is calibrated precisely from 0° to 45° including 44° and 29° interference angles. See illustration.



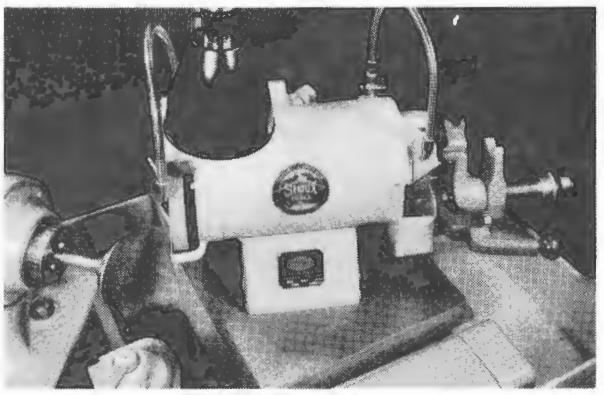
4. **Chuck Valve:** Open chuck sleeve and insert valve so that rollers will engage the stem just above the worn area. Close chuck sleeve to contact stem. Adjust aligner to contact end of stem. Pull lever back and close chuck sleeve, then back sleeve off slightly. Press valve firmly back into aligner with slight rotary motion and release lever. The chuck will now accept all valves of same size without further adjustment.

To grind valves longer than capacity of floating aligner, remove floating aligner and use bushing as shown:

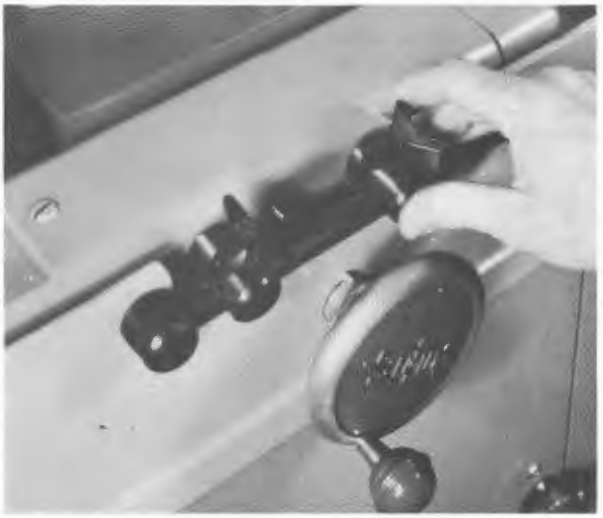
No. 682-4A-160	(24572)	7/16"	Aligner Bushing
No. 682-4A-161	(24573)	1/2"	Aligner Bushing
No. 682-4A-162	(24574)	9/16"	Aligner Bushing
No. 682-4A-163	(24575)	5/8"	Aligner Bushing
No. 682-4B-163	(24569)	5/8"	Aligner Bushing
No. 682-4B-165	(24576)	3/4"	Aligner Bushing
No. 682-4B-166	(24577)	13/16"	Aligner Bushing
No. 682-4B-167	(24578)	7/8"	Aligner Bushing
No. 682-4B-168	(24579)	15/16"	Aligner Bushing
No. 682-4B-169	(24570)	1"	Aligner Bushing
No. 682-4B-170	(24580)	1 1/16"	Aligner Bushing
No. 682-4B-171	(24581)	1 1/8"	Aligner Bushing
No. 682-4B-172	(24582)	1 1/4"	Aligner Bushing

No. 682-4A SERIES FOR 11/16" CHUCK
No. 682-4B SERIES FOR 1 1/4" CHUCK

5. **Grind Valves:** Position grinding head so that valve face will traverse the full width of the wheel. Please note that the grinding head may assume an angular position on its cross slide so that the valve face may pass to the right without touching the throat of the valve on the left side of the wheel and provide clearance between chuck sleeve and wheel guard. See illustration.



Set the chuck carriage plate stop so that the valve face will just reach the right edge of the grinding wheel but never go beyond. Dress the grinding wheel to clean up. (SEE INSTRUCTIONS FOR DRESSING). Advance grinding wheel towards the valve until wheel just touches. Set micrometer thimble at zero. Begin grinding at left side of wheel, moving valve slowly and steadily, right and left, across the wheel.

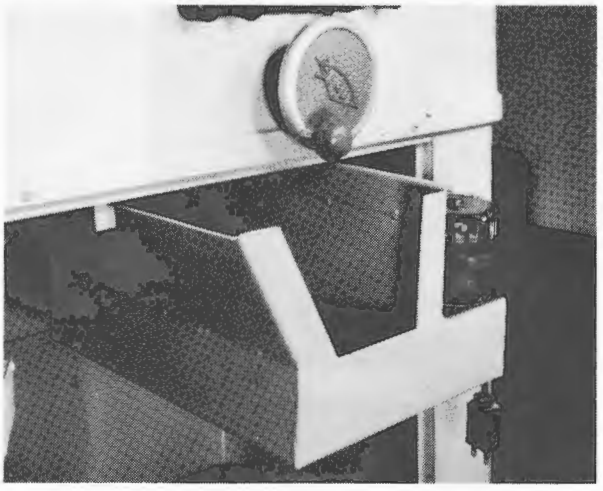


DO NOT ALLOW VALVE AT ANYTIME TO PASS BEYOND EITHER EDGE OF THE GRINDING WHEEL WHILE GRINDING. Take light cuts by feeding the wheel up to the valve about .001"-.002" at a time. Remove just enough material to make a clean smooth face. When valve face is trued, advance to right until top edge of valve is flush with right edge of grinding wheel. Pause a second, then back grinding wheel away from valve, NOT VALVE AWAY FROM WHEEL. Keep valves in numbered rack to make sure you return them to their own guides.

On large diameter and hard faced valves, it may be necessary to make a finish dress of the grinding wheel for a finish grind. **Do not remove the valve from the chuck.** Position the dressing tool between valve and wheel so that a complete traverse of the grinding wheel can be made without contact of valve to grinding wheel. Again, as noted in dressing instructions, for hard faced valves, use the softer grade wheel (Cat. No. 177).

Removable Coolant Tank

When the coolant becomes dirty it must be cleaned out. Soluble oil should be replaced. No. 250 Sioux grinding oil may be reused.



TO ADJUST DRAG ON CARRIAGE PLATE:

Loosen or tighten the round nut located behind carriage shifter lever.

The Sioux Quick Acting Roller Chuck

The rollers automatically bring valve stem back against the aligner, thus assuring a perfect alignment. They float and roll, thereby changing position on every valve chucked; this insures long life. The floating aligner with its inverted center, aligns the valve and also serves as a stop, holding the valve stem rigidly centered in the chuck. It is adjustable for valve stems of different lengths. Chuck the valve on the best part of stem just above the worn surface.

Easy to clean—The sleeve on lever chuck turns completely off for cleaning. The snap ring on rear of hand chuck sleeve jumps off when chuck is opened to maximum capacity and additional turn. Replace sleeve completely and the ring will snap in place. When replacing chuck sleeve put a few drops of oil on the thread and bearings.

Accuracy is the principal feature in the manufacture of the SIOUX ROLLER CHUCK. The 956, 957 and 958 chucks are tested within one thousandths of an inch.

Very few valve stems are perfectly straight and round; therefore, do not expect to test the accuracy of your machine by grinding and then rechucking valve, as this method of testing is not practical.

Note

Good housekeeping is essential to keep any precision tool in condition. Use the rubber shields (No. 631B) when grinding or dressing to keep grit and coolant out of chuck. The chuck on your machine has been factory adjusted to grind valves within .001" T.I.R. concentrically. Keep it that way.

Important! Read Carefully

GRINDING VALVES: Chuck the valve on the best part of the stem just above the worn surface, with end of stem resting solidly against floating aligner.

Begin grinding on left hand side of wheel face, **Grind slowly** and move the valve slowly and steadily forth and back on wheel. Large valves grind much slower than small ones.

Take light cuts by feeding the wheel up to the valve a little at a time. When the valve face is trued up, advance to the right until the top edge of valve is flush with right hand edge of wheel.

Stop a second or two, then back grinding wheel away from valve. This will give a very fine finish.

No. 176 Grinding Wheel is recommended for general grinding applications.

No. 177 Grinding Wheel for Aircraft and Stellite Valves.

No. 81 Right End Attachment Grinding Wheel.

Dressing Wheel

Take light cuts and move diamond steadily across wheel. Whenever you fail to get a good finish on valves, it is most likely the wheel needs dressing, or you are feeding the valve over the wheel too fast.

For faster grinding on hard valves, move the diamond across the wheel faster than usual and dress the wheel rough and sharp.

#1715-A Heavy Duty Diamond is used for dressing the right hand grinding wheel and the #681 diamond is used to dress the left hand grinding wheel.

Interference Angle Grinding

For better valve jobs the 45° valves can be refaced to 44° and the 30° valves to 29 degrees, while the seats are refinished to the original 45 or 30 degrees. This assures compression-tight, fully-seated valves; and the valve life and efficiency are greatly increased.

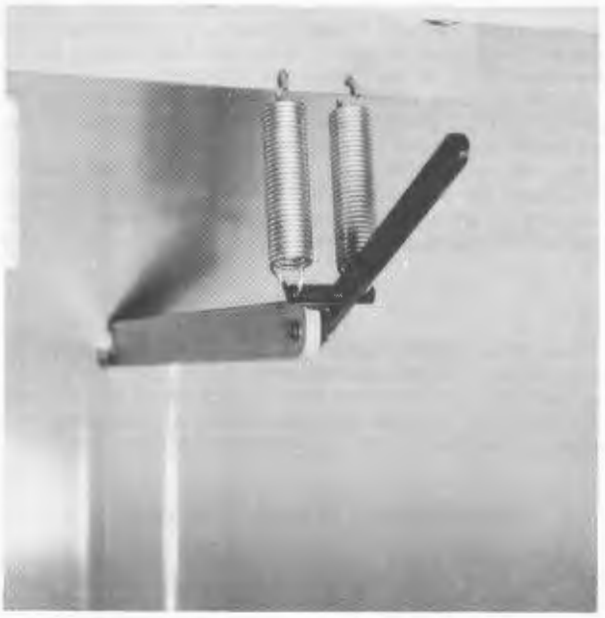
Changing Chucks

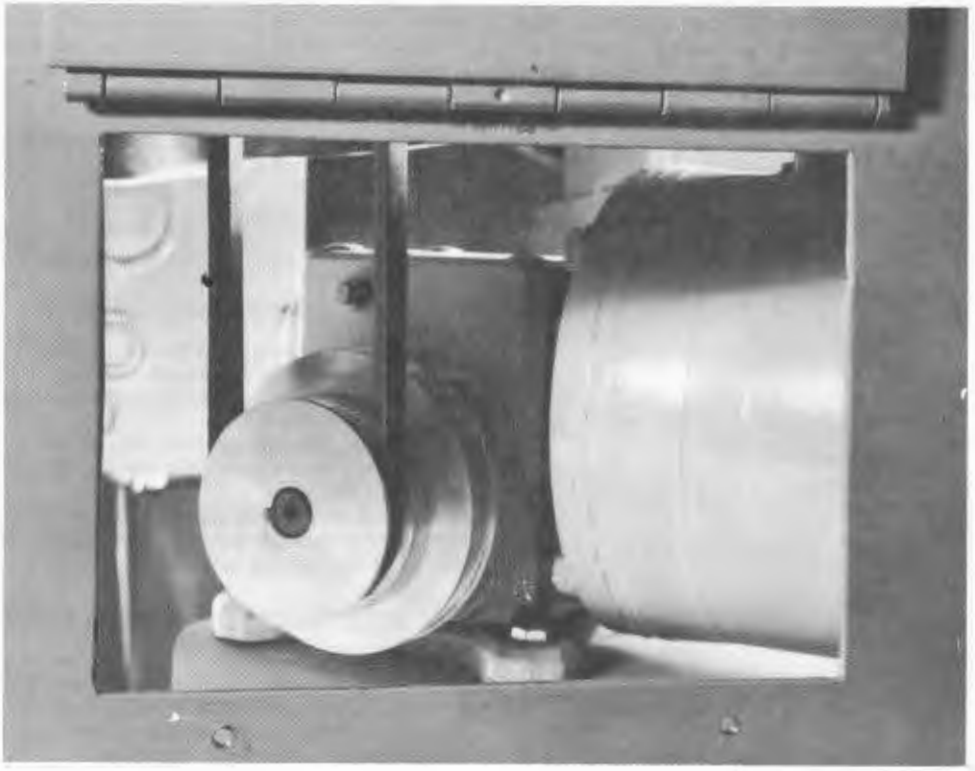
Before removing chuck, tension must be removed from the chuck belt. First remove spring tension by pulling outward on the spring handle and then raise the gear motor platform by jacking up with adjusting screw.

An access door is provided on the left hand side of the machine to aid the removal and installation of the belt.

The large capacity chuck should be driven by the small diameter pulley and the small capacity chuck should be driven by the large diameter pulley.

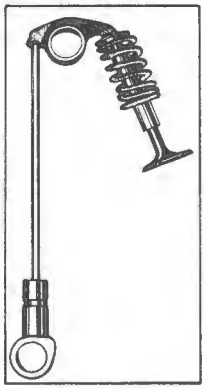
Be sure that the jacking screw has been completely released and the spring tension applied after the new chuck has been installed.





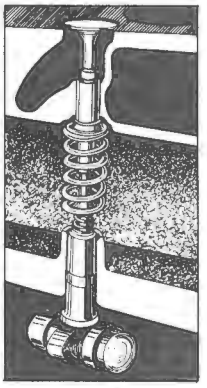
HYDRAULIC LIFTER - TAPPET SETTING

Adjusting Valve Length to Compensate for Material Removed From Valve and Seat When Grinding



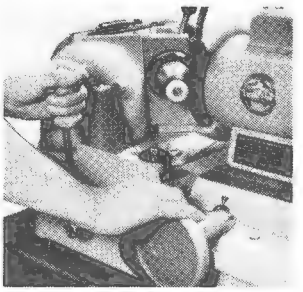
Over Head Valve Train with Hydraulic Lifter

A suggested method of maintaining Tappet Setting for Hydraulic Lifters—the usual setting is not less than .030 or more than .070 thousandths with the lifter washed clean and the plunger spring compressed to bottom.
(Follow the engine specifications)

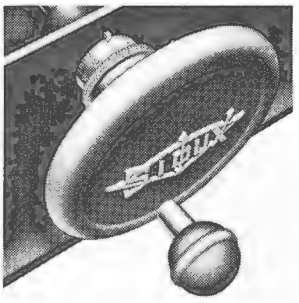


L-Head Valve with Hydraulic Lifter

Chuck the valve in machine and when valve starts to grind, set the micrometer feed to zero. When valve is finished read the micrometer for number of thousandths taken off the face of valve.



Wet Grinding Valve



Micrometer Graduated Feed

Place the No. X-825 valve set indicator over pilot and check the lowest spot on the valve seat and set dial to zero, remove indicator and grind seat.

When seat is finished, replace the indicator and read how many thousandths were removed from the seat.

X-825

Grinding Valve Seat

Add the number of thousandths removed from the valve face to number of thousandths removed from seat, and grind an equal amount off end of valve stem with the micrometer attachment on No. 956 machine.

Check factory specifications and any particular instructions governing their engines.

NOTE:—A variation from standard in the thickness of the head gasket may also affect the setting of hydraulic lifters.

Wet-Grind Valve Ends

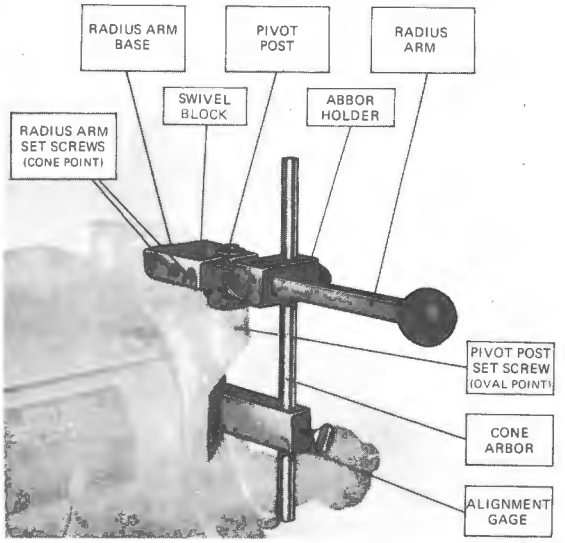
Keep Machine Clean and Well Oiled at All Times

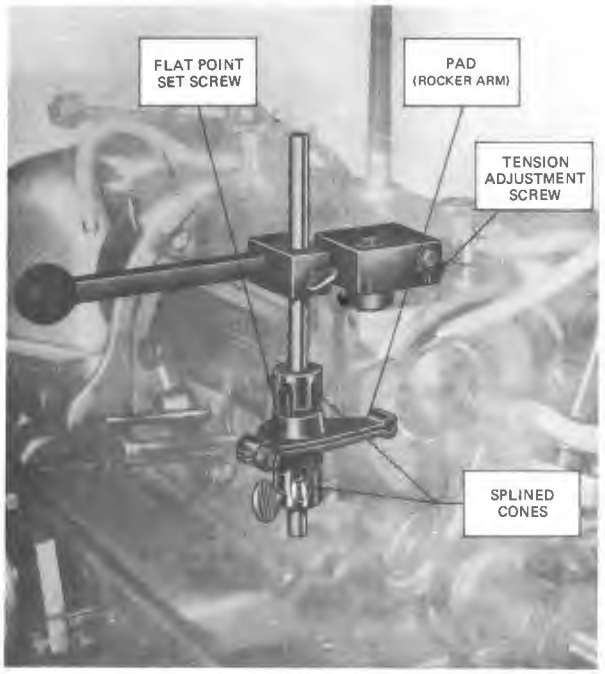
SIOUX TOOLS

No. 656 Rocker Arm Attachment. Assembly and Operating Instructions.

GRINDING ROCKER ARMS

Dress wheel with built-in dressing tool on right side of machine before mounting the SIOUX Rocker Arm Attachment.





ASSEMBLY AND OPERATION

The grinding wheel should be properly dressed before mounting the Rocker Arm Attachment.

Place the pivot post, with its swivel block base and the radius arm base, in the ⅜" diameter hole in the top of the right wheel guard, the flat on the post facing forward. Seat the post firmly and secure with the oval point set screw.

Place arbor holder on radius arm, cone arbor in the arbor holder and alignment gauge on arbor. Place radius arm in the radius arm base. *Do not tighten the two cone point set screws.* Adjust height of alignment gauge to the horizontal center of the grinding wheel and position the arbor holder to allow the recessed pad of the alignment gauge to make full contact with the face of the grinding wheel. Hold recessed pad of alignment gauge against face of grinding wheel while tightening three thumb screws. Hold alignment gauge firmly against wheel face and tighten the two cone point set screws locking the radius arm.

Remove alignment gauge.

Install the splined cone (with flat point set screw) on arbor, small end down. Place rocker arm on arbor and adjust upper cone position to bring rocker arm pad to horizontal center of wheel. Place lower cone on arbor to firmly hold rocker arm. Position arbor holder to grind full pad area.

Wet grind rocker arms by lightly pressing arm pad against grinding wheel. Swivel attachment left and right until desired surface is attained. The radius arm can be swung upward to facilitate loading and unloading. Proper adjustment of the tension screw will allow the operator to move the radius arm up or down—but not drop accidentally.

SIOUX TOOLS

Assy. - Coolant Pump for 956, 957, & 958

Furnish Machine and Serial Number When Ordering Parts

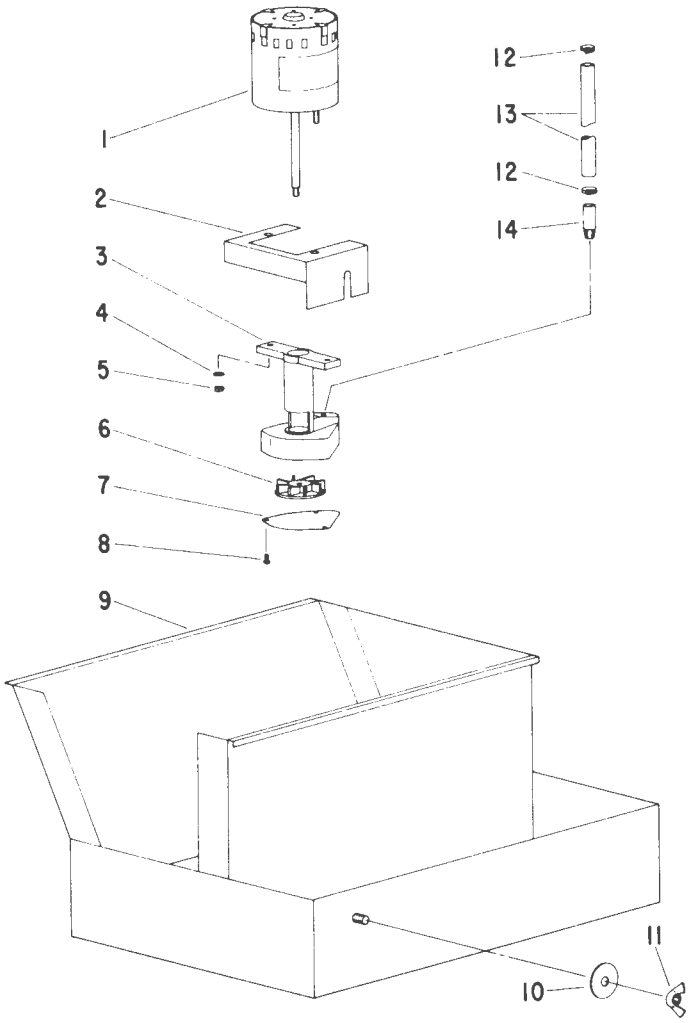


Figure	Part No.	Name
1	15124	Motor (Specify Voltage & Cycle)
2	35390	Mount—Pump
3	12385	Housing—Pump
4	09712	Washer—Lock #8 (2)*
5	09450	Nut—Hex #8 - 32 (2)*
6	12386	Impeller
7	35368	Cover—Pump
8	06235	Screw—Phil. Rd. Hd. #6 - 32x1/4" (3)*
9	53641	Assy.—Coolant Tank
10	25366	Washer
11	09571	Nut—Wing 5/16" - 18
12	30744	Clamp—Hose (2)*
13	04263	Hose—Coolant (Up to Ser. "B")
	04309	Hose—Coolant (Ser. No's. Starting w/"B")
14	30734	Tube—Adaptor
		COMPLETE ASSY.
	53689	Assy.—Pump & Bracket (Incl. Figs. 1 thru 8, 14) (Specify Voltage & Cycle)

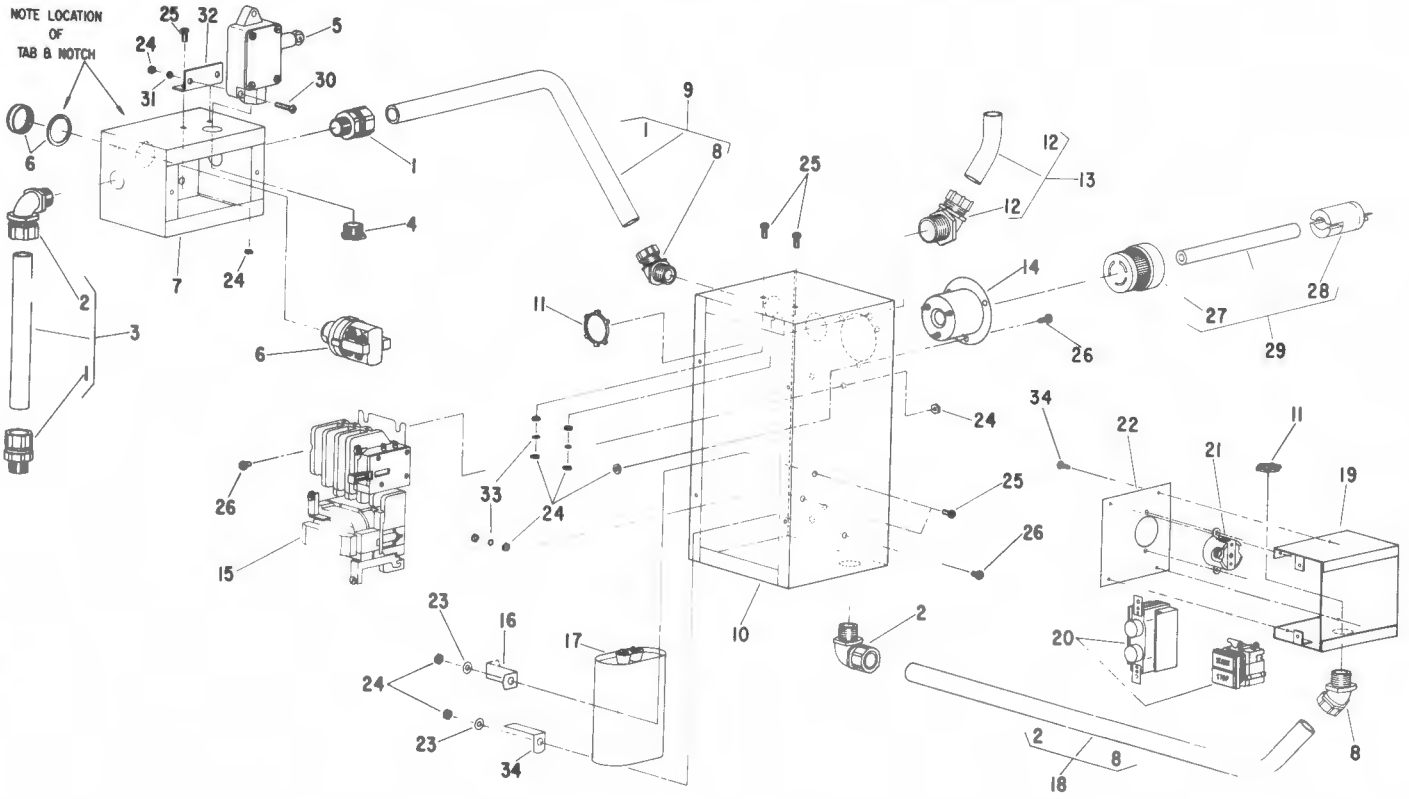
*Order Quantity As Needed

SIOUX TOOLS INC.

SIOUX CITY, IOWA, U.S.A. 51102

SIOUX TOOLS

Junction Box for 956, 957, & 958
115V. & 230V.
Single Phase



Effective Date 10/80

Furnish Machine and Serial Number When Ordering Parts

SIOUX TOOLS

Junction Box for 956, 957, & 958
115V. & 230V.
Single Phase

Furnish Machine and Serial Number When Ordering Parts

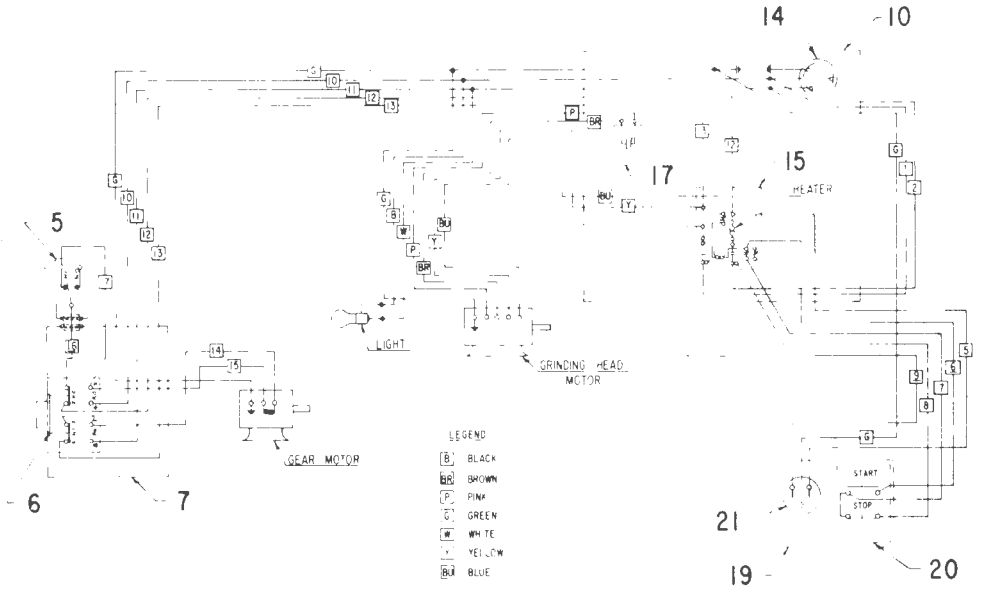


Figure	Part No.	Name
1	28001	Connector—Straight (Inc. Fig. 11) (2)*
2	28002	Connector—90° (Incl. Fig. 11) (2)*
3	28029	Assy.—Conduit (Gear Motor)
4	28015	Nipple—Chase
5	28025	Assy.—Limit Switch
6	28011	Switch—Jogging
7	28004	Box—Pull (Incl. Cover)
8	28023	Connector—45° (Incl. Fig. 11) (2)*
9	28028	Assy.—Conduit (Limit & Jogging Switch)
10	28005	Box—Pull (Incl. Cover)
11	18658	Locknut (8)*
12	28003	Relief—45° Strain (Fig. 11 NOT Incl.) (2*)
13	28030	Assy.—Cord (Grinding Head Motor) (Incl. (2) Fig. 11)
14	18985	Base—Plug
15	28049	Assy.—Magnetic Switch (Incl. Heater) (115V.) (General Electric)
	28050	Assy.—Magnetic Switch (Incl. Heater) (230V.) (General Electric)
	28051	Ass.—Magnetic Switch (Incl. Heater) (115V.) (Cutler Hammer)
	28052	Assy.—Magnetic Switch (Incl. Heater) (230V.) (Cutler Hammer)
	28008	Heater (115V.) (General Electric)
	28014	Heater (230V.) (General Electric)
	28047	Heater (115V.) (Cutler Hammer)
	28048	Heater (230V.) (Cutler Hammer)
16	28038	Strap

Figure	Part No.	Name
17	28033	Capacitor—Motor
18	28027	Assy.—Conduit (Start, Stop Switch)
19	63099	Assy.—Outlet Box
20	28009	Switch—Push Button (Round Button) } Use Proper One According To Hole In Cabinet.
	28078	Switch—Start Stop (Rectangular Button) }
21	18799	Receptacle (115V.)
	18877	Receptacle (230V.)
22	35653	Cover—Single Outlet
23	25059	Washer (2)*
24	09464	Nut—Stl. Hex. #10 - 24 (18)*
25	07210	Screw—Phil. Rd. Hd. Sems #10 - 24 x 1/2" (6)*
26	07205	Screw—Phil. Rd. Hd. Sems #10 - 24 x 3/8" (7)*
27	18984	Connector—Twist Lock
28	18894	Plug (115V.)
	18895	Plug (230V.)
29	18570	Assy.—Cord (115V.)
	18401	Assy.—Cord (230V.)
	18660	Connector—Wire (Yellow) (7)*
	18661	Connector—Wire (Red) (4)*
30	07119	Screw—Phil. Fil. Hd. #10 - 24 x 1" (2)*
31	09724	Washer—Lock #10 (2)*
32	35412	Bracket—Limit Switch
33	09722	Washer—External Tooth Lock
34	06361	Screw—Rd. Hd. #6 - 32 x 1/4" (4)*

*Order Quantity As Needed

Effective Date 10/80

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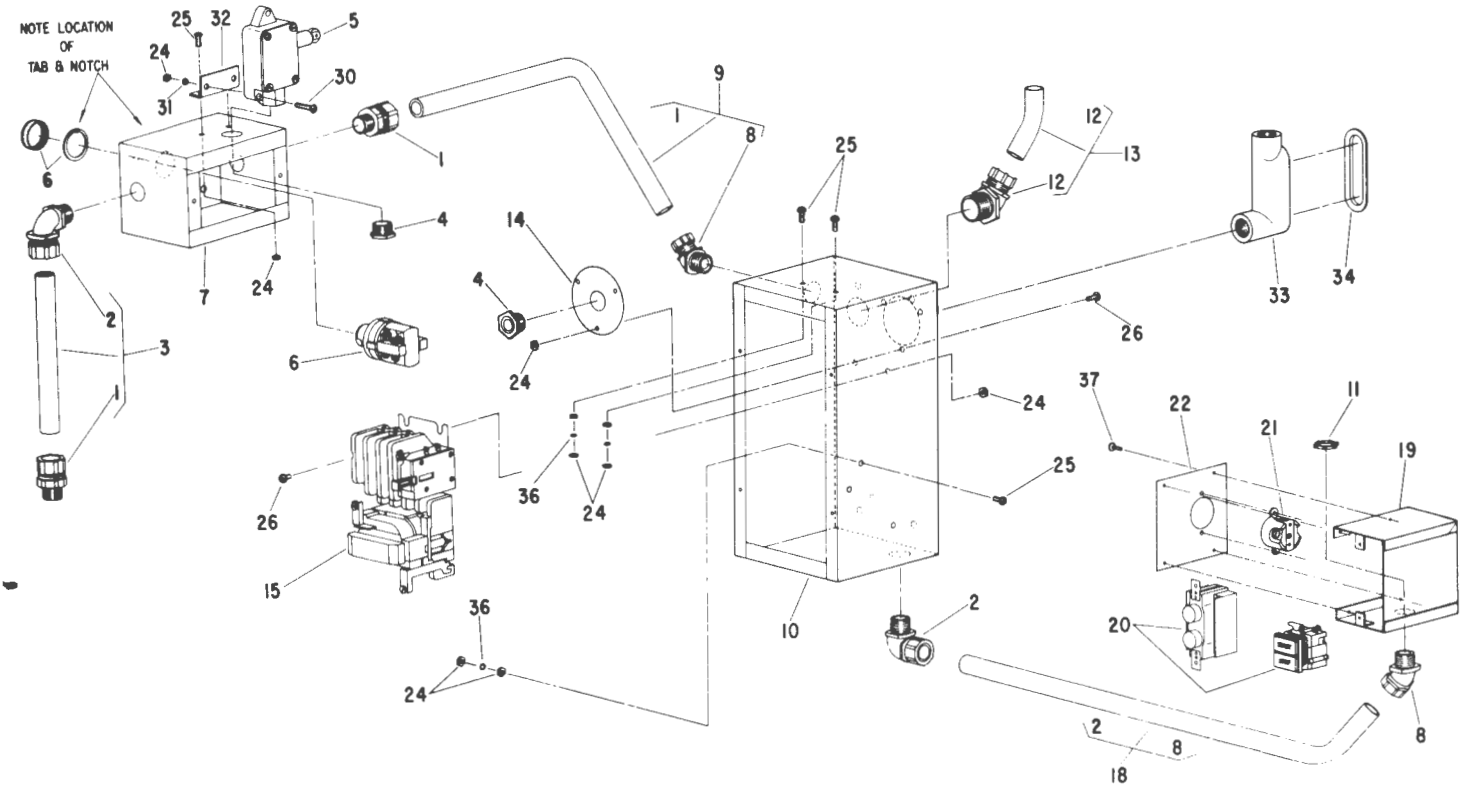
SIOUX TOOLS INC.

SIOUX CITY, IOWA, U.S.A. 51102

SIOUX TOOLS

Junction Box for 956, 957 & 958
208-220V.
3 Phase



Effective Date 10/80

Furnish Machine and Serial Number When Ordering Parts

SIOUX TOOLS

Junction Box for 956, 957 & 958
208-220V.
3 Phase

Furnish Machine and Serial Number When Ordering Parts

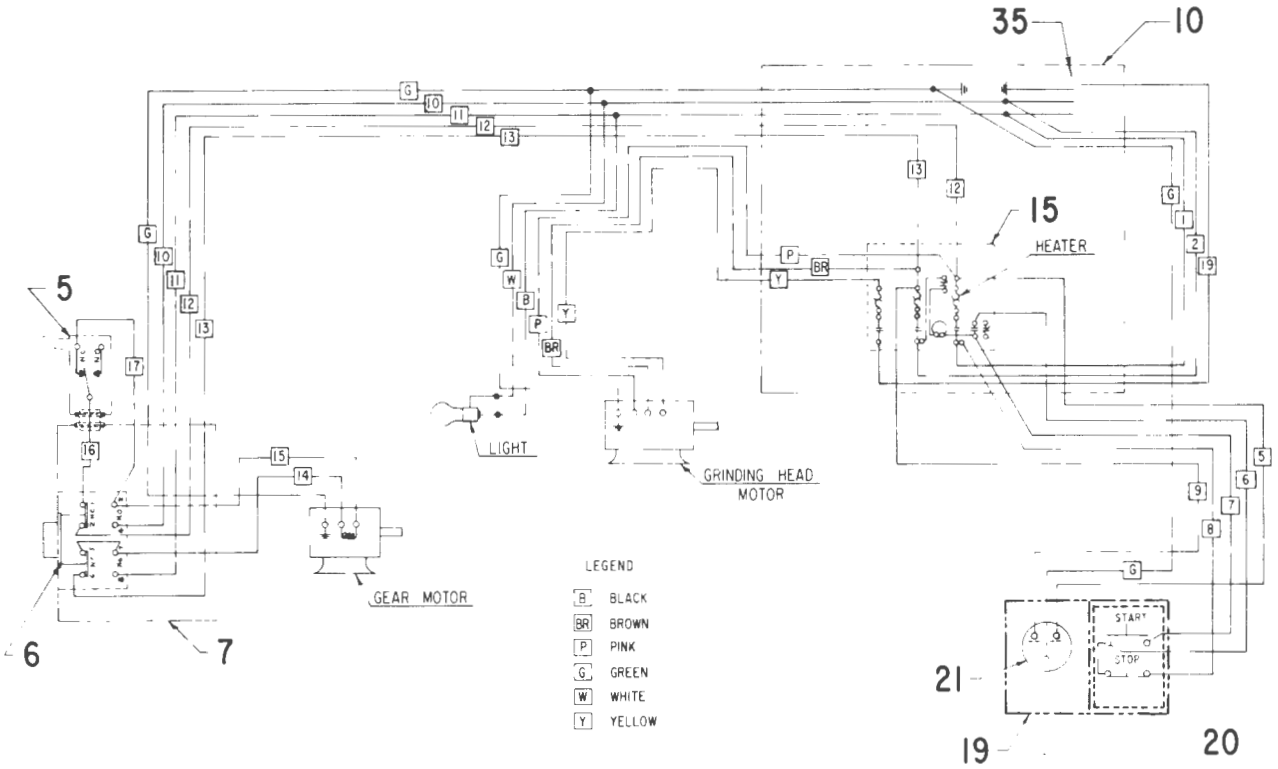


Figure	Part No.	Name
1	28001	Connector—Straight (Incl. Fig. 11) (2)*
2	28002	Connector—90° (Incl. Fig. 11) (2)*
3	28029	Assy.—Conduit (Gear Motor)
4	28015	Nipple—Chase (2)*
5	28025	Assy.—Limit Switch
6	28011	Switch—Jogging
7	28004	Box—Pull (Incl. Cover)
8	28023	Connector—45° (Incl. Fig. 11) (2)*
9	28028	Assy.—Conduit (Limit & Jogging Switch)
10	28005	Box—Pull (Incl. Cover)
11	18658	Locknut (8)*
12	28003	Relief—45° Strain (Fig. 11 NOT Incl.) (2)*
13	28036	Assy.—Cord (Grinding Head Motor) (Incl. (2) Fig. 11)
14	25686 or 53745	Plate—Mounting Assy.—Wiring Hook-up (Incl. Figs. 4, 33, 34, 35 & Mounting Plate)
15	28053	Assy.—Magnetic Switch (Incl. Heaters)
	28035	Heater (3)*

Figure	Part No.	Name
18	28027	Assy.—Conduit (Start, Stop Switch)
19	63099	Assy.—Outlet Box
20	28009	Switch—Push Button (Round Button) } Use Proper One According
	28078	Switch—Start Stop (Rectangular Button) } To Hole In Cabinet.
21	18877	Receptacle
22	35653	Cover—Single Outlet
24	09464	Nut—Stl. Hex #10 - 24 (12)*
25	07210	Screw—Phil. Rd. Hd. Sems #10 - 24x1/2" (3)*
26	07205	Screw—Phil. Rd. Hd. Sems #10 - 24x3/8" (6)*
33	28064	Elbow—90° Elec.
34	28065	Cover
35	28068	Assy.—Wire (3 Ph.)
36	09722	Washer—External Tooth Lock #10 x .025 (3)*
	18660	Connector—Wire (Yellow) (6)*
	18661	Connector—Wire (Red) (4)*
37	06361	Screw—Rd. Hd. #6 - 32 x 1/4" (4)*

*Order Quantity As Needed

Effective Date 10/80

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SIOUX TOOLS INC.

SIOUX CITY, IOWA, U.S.A. 51102

11/76

SIOUX TOOLS

Parts List for Cabinet Assembly and Chuck Motor For 956, 957, & 958

Furnish Machine and Serial Number When Ordering Parts

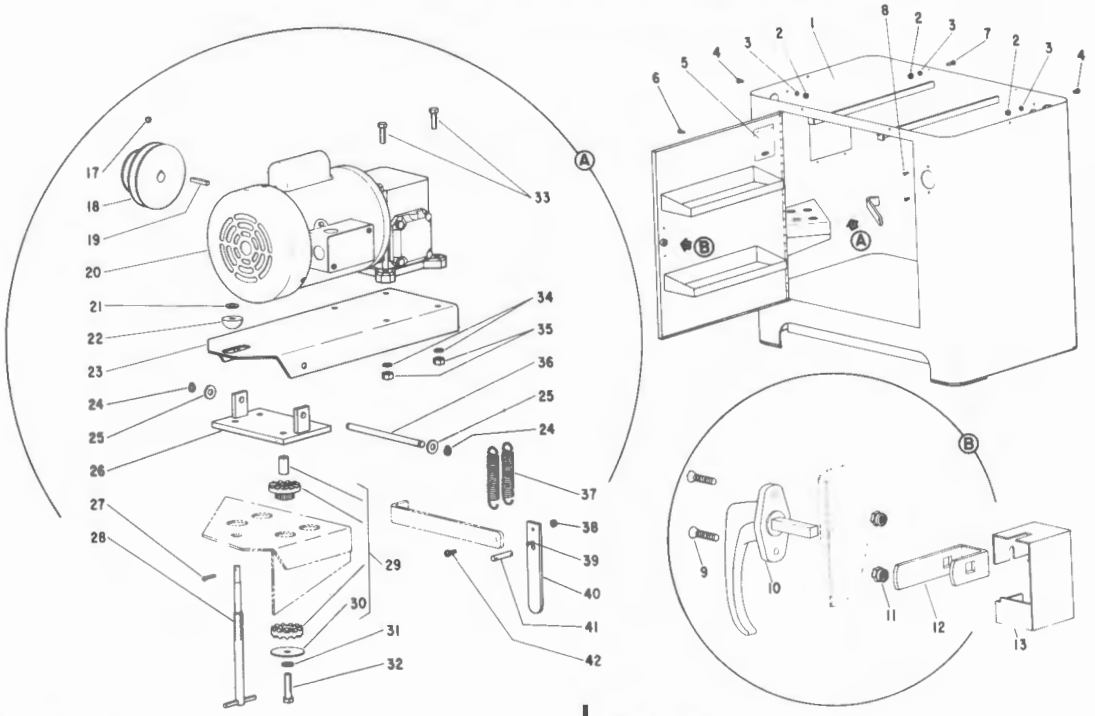


Figure	Part No.	Name
1	53671	Assy.–Cabinet (incl's. Fig. 3 (2), 5 & 9 thru 16)
2	09500	Nut–Hex (1/4" - 20) (11)*
3	09151	Washer–Lock (1/4") (13")*
4	08120	Screw–Truss Hd. (1/4" - 20 x 1/2") (5)*
5	20931	Plate–Parts List
6	07222	Screw –Pan Hd. (#10 x 5/8") (2)*
7	08044	Screw–Rd. Hd. (1/4" - 20 x 1") (6)*
8	07232	Screw–Rd.Hd. (#10-24 x ½") (2)*
9	07036	Screw–Tamper Proof Rd. Hd. (#10–32 x 3/4")
10	44083	Hhandle Locking
11	09463	Not–Steel Elastic Stop (#10–32)
12	40084	Latch–Adjustable
13	35592	Plate–Cover
17	08580	Screw–Set (5/16" - 18 x 1/4")
18	54516	Pulley
19	24675	Key
20	53640	Assy.–Gear Motor
21	25053	Washer
22	54512	Washer–Bevel
23	35394	Base–Gear Motor
24	21534	Ring–Retaining (2)*
25	25386	Washer (2)*
26	53653	Assy.– Gear Motor Sub Base
27	30119	Pin– Cotter
28	54517	Screw– Jack
29	53698	Assy.–Motor Mount (Set of 4)
30	35401	Washer (4)*
31	09789	Washer–Lock (3/8") (4)*
32	09106	Screw–Hex Hd. Cap (3/8" - 16 x1 1/2") (4)*
33	08776	Screw–Hex Hd. Cap (5/16" - 18 x 1 1/8") (4)*
34	09770	Washer–Lock (5/16") (4)*
35	09545	Nut–Hex (5/16" - 18) (4)*
36	54513	Rod–Swivel
37	21335	Spring (2)*
38	09464	Nut–Hex (#10 - 24)
39	30236	Pin–Roll (1/8" x 1/2")
40	35402	Lever–Chuck Belt Loading (Incl's. Fig. 39)
41	54519	Pin–Spring Mount
42	07223	Screw–Pan Hd. (#10 - 24 x 5/8")

*Order Quanty As Needed

SIOUX TOOLS, INC.

SIOUX CITY, IOWA, U.S.A. 51102

Carriage Plate Assembly for 956, 957 & 958

Furnish Machine and Serial Number When Ordering Parts

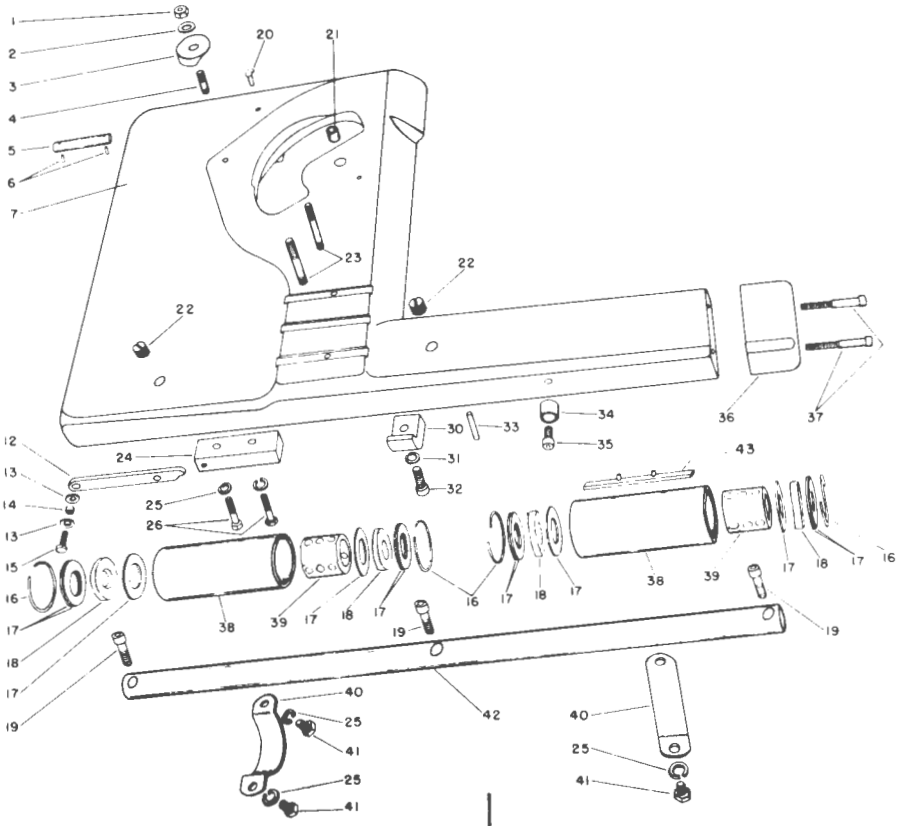
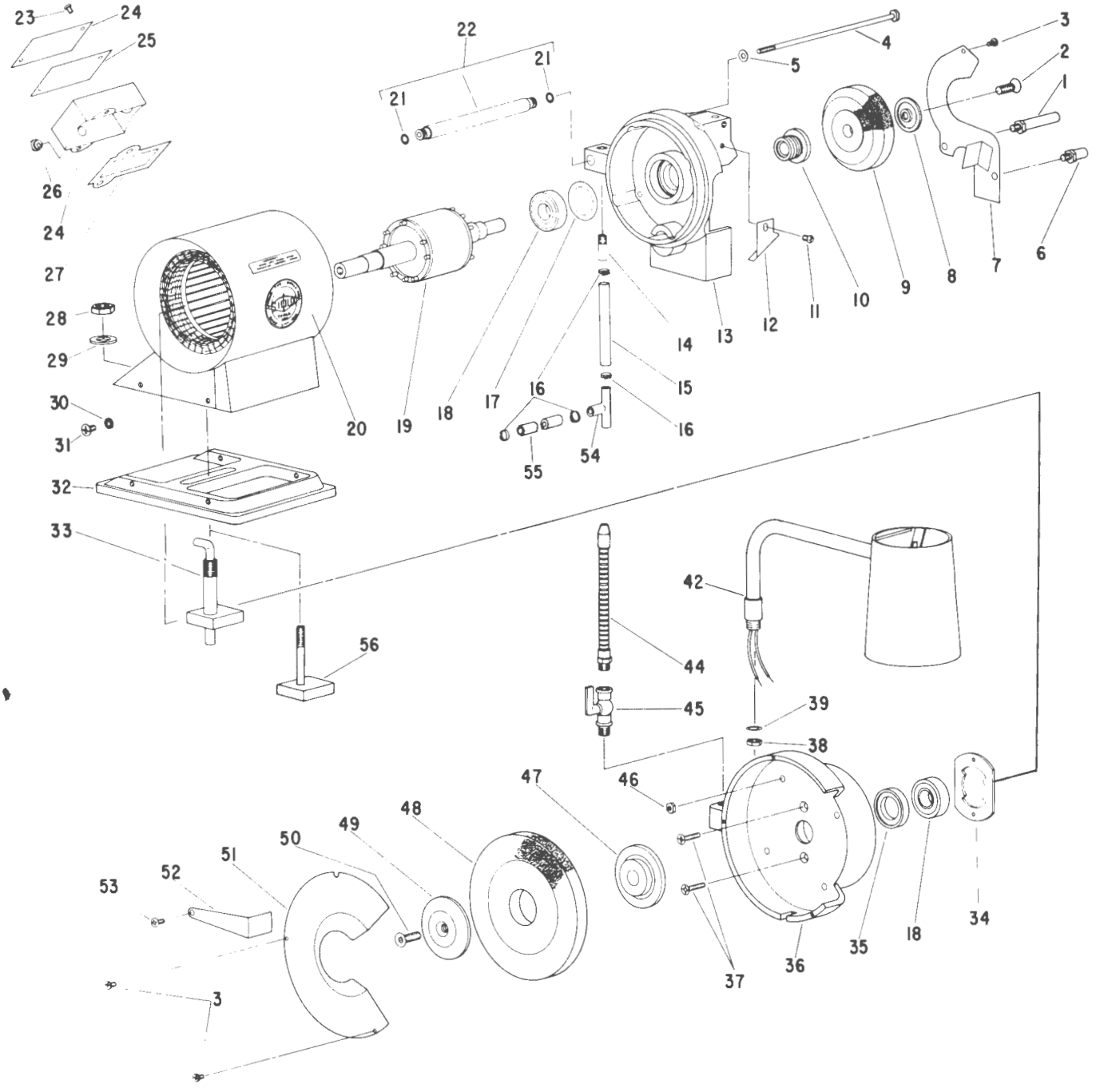


Figure	Part No.	Name
1	09590	Nut–Hex (3/8" - 16)
2	25403	Washer
3	11058	Lock–Chuck Head
4	24196	Stud–Carriage
5	34214	Bar–Carriage Plate
6	30219	Pin–Roll (3/32" x 1") (2)*
7	11241	Plate–Carriage
12	24407	Link– Shifter
13	25069	Washer (2)*
14	24311	Sleeve
15	08247	Screw–Hex Hd. (1/4" - 20 x 3/4")
16	30120	Ring–Wire Snap (4)*
17	25370	Washer–Retainer (12)*
18	14642	Washer–Felt Seal (4)*
19	08841	Screw–Soc. Hd. Cap (5/16" - 18 x 1 3/4") (3)*
20	30052	Cup–Oil
21	24217	Sleeve–Chuck Swivel
22	30121	Plug (2)*
23	24568	Stud–Dressing Tool Clamp (2)*
24	24452	Block-Mounting
25	09770	Washer–Lock (5/16") (6)*
26	08779	Screw–Hex Hed. (5/16" - 18 x 1 1/2 (2)*
30	11090	Clamp–Carriage Plate
31	09789	Washer–Lock (3/8")
32	09081	Screw–Soc. Hd. Cap (3/8" - 16 x 1 1/4")
33	30221	Pin–Roll (1/4" x 2 1/2")
34	24472	Stop
35	08835	Screw–Soc. Hd. Cap (5/16 - 18 x 5/8")
36	11095	Toe
37	08799	Screw–Soc. Hd. Cap (5/16" - 18 x 2") (2)*
38	24498	Sleeve (2)*
39	23385	Assy.–Bearing Retainer & Balls (2)*
40	25306	Clamp–Bearing Cage (2)*
41	08771	Screw–Hex Hed. (5/16" - 18 x 5/8" (4)*
42	24512	Bar–Way
43	43250	Assy.–Key & Roll Pins

* Order Quantity As Needed

SIOUX TOOLS

Grinding Head for 956, 957 & 958



Furnish Catalog, Serial and Model Number When Ordering Parts

SIOUX TOOLS

Grinding Head for 956, 957 & 958

Furnish Machine and Serial Number When Ordering Parts

Figure	Part No.	Name
1	54437	Stop—Long
2	09095	Screw—Flat Hd. Socket 3/8''-16x1''
3	07225	Screw—Phil. Pan Hd. #10-32x3/8'' (3)*
4	07190	Bolt—Thru (4)*
5	35234	Washer (4)*
6	54438	Stop—Short
7	35350	Cover—Right End
8	24171	Flange—Grinding Wheel
9	81	Wheel—Grinding
10	54530	Flange—Inner
11	08275	Screw—Phil. Rd. Hd. 1/4''-20x3/8''
12	35357	Deflector
13	11422	End Shield (Right End)(Up to Ser. ''B'')
	11462	(Ser. No's. Starting w/''B'')
14	30734	Adaptor—Tube (2)*
15	04248	Hose—Coolant (Up to Ser. ''B'')
	04300	(Ser. No's. Starting w/''B'')
16	30744	Clamp—Hose (4)*
17	41298	Washer—Thrust
18	10281	Bearing—Ball (2)*
19		Rotor & Shaft (Information Available Upon Request)
20		Assy.—Stator & Base (Information Available Upon Request)
21	04252	Ring—''O'' (2)* (Up to Ser. ''B'')
22	53692	Assy.—Coolant Tube (Up to Ser. ''B'')
23	06673	Screw (#8-32x3/8'') (2)*
24	35316	Box—Conduit
25	05014	Gasket—Conduit Cover
26	14856	Bushing—Strain Relief (Up to Ser. ''B'')
27	05012	Gasket—Conduit Box
28	09656R	Nut—Hex. Jam 5/8''-18 (Up to Ser. ''B'')
	09590	Nut—(Ser. No's. Starting w/''B'')
29	25894	Washer 21/32''x1-1/4''x3/32'' (Up to Ser. ''B'')
00	25158	Washer (Ser. No's. Starting w/''B'')
30	09830	Washer—Shakeproof Lock 1/4'' (4)*
31	08120	Screw—Truss Hd. 1/4''-20x1/2'' (4)*
32	11439	Plate—Base
33	53643	Assy.—Clamp Post & Plate (Up to Ser. ''B'')

Fugure	Part No.	Name
34	35373	Lockplate
35	54532	Spacer—Outer (Early Models)
36	11423	End Sheild (Left End) (Up to Ser. ''B'')
	11461	(Ser. No's. Starting w/''B'')
37	08176	Screw—Flat Hd. 1/4''-20x1-1/2'' (2)*
38	09635	Nut—Hex Jam 1/2'' - 20 (Up to Serial ''B'')
	09656R	Nut—Hex 5/8-18 (Start w/''B'')
42	18798	Assy.—Flexible Light (Up to Serial ''B'') (Incl. Fig. 38)
	14854	Tubing—Insulation (Up to Ser. ''B'')
	28153	Light (Ser. Start with ''B'')
44	54983-1	Coolant Tube (Right)
	54983-2	Coolant Tube (Left)
45	30731	Valve (2)*
46	09462	Nut #10 - 32 (4)*
47	54531	Flange—Inner
48	176	Wheel—7'' Grinding (For General Grinding)
	177	Wheel—7'' Grinding (For Grinding Stellite)
49	54407	Flange—Outer
50	09096	Screw—Flat Hd. Socket 3/8'' - 16x1'' L.H. Thd.
51	35351	Cover—Left End
52	35352	Shield—Air
53	08279	Screw—Phil. Rd. Hd. 1/4''-20x1/2''
54	04000	Tee—Coolant (Ser. No's. Starting w/''B'')
55	04248	Hose—Coolant (Ser. No's. Starting w/''B'')
	18988	Bulb—Light (230V)
	18911	Bulb—Light (115V)
56	63341	Assy.—Clamp Post & Plate (Ser. No's. Starting with ''B'')
		COMPLETE ASSY.
	53686	Assy.—Grinding Head (Everything except 15, 16,28,29,33 & Light Bulb) (Specify Voltage & Phase) (Up to Ser. ''B'')
	63347	(Ser. No's. Starting w/''B'')
	53693	Assy.—Grinding Head (Incl. Figs. 4,5, 13, 17-25, 27, 30-32, 34-37 & 46.)

*Order Quantity As Needed

SIOUX TOOLS INC.

SIOUX CITY, IOWA, U.S.A. 51102

PRINTED IN U.S.A.

SIOUX TOOLS

Chuck & Head Assembly (.230'' To 11/16'' Capacity) For 956, 957

Furnish Machine and Serial Number When Ordering Parts

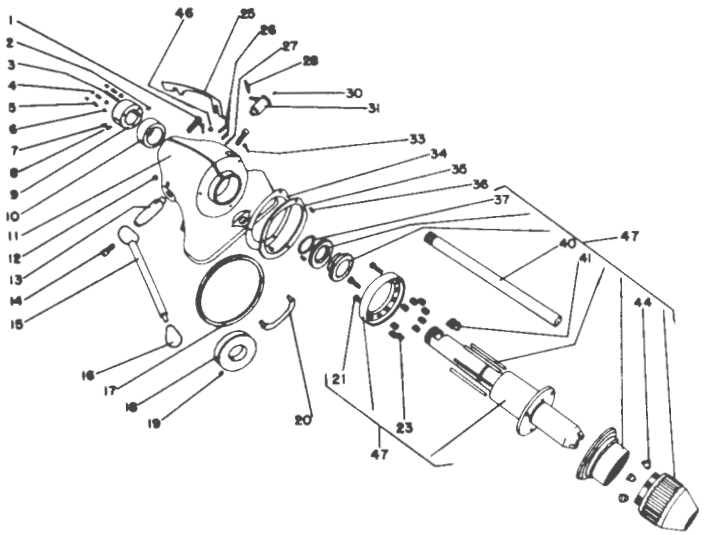


Figure	Part No.	Name
1	08795	Screw—Soc. Hd. Cap (5/16''-18x1'') (2)*
2	08021	Screw—Soc. Cup Pt. Set (1/4''-20x1/4'')
3	24829	Key—Chuck Collar
4	08596	Screw—Soc. Flat Pt. Set (5/16''-18x1/4'') (3)*
5	21315	Spring (3)*
6	24956	Button—Push (3)*
7	08605	Screw—Soc. Hd. Half Dog Set (5/16''-18x1/2'')
8	08032	Screw—Soc. Hd. Full Dog Set (1/4''-20x1/2'')
9	24954	Knob—Chuck
10	24955	Collar—Adjustment
11	11228	Assy.—Chuck Head (Incl's. Fig's. 1, 12, 25, 26, 27, 33, 46)
12	30073	Cup—Oil (3)*
13	24975	Dog—Front
14	08835	Screw—Soc. Hd. Cap (5/16''-18x5/8'')
	08832	Screw—Soc. Button Hd. (5/16''-18x5/8'')
15	23722	Assy.—Handle & Head
16	04006	Ball—Lever
17	14468	Belt—''V''
18	24995	Pulley—Chuck Spindle
19	08604	Screw—Soc. Half Dog Set (5/16''-18x3/8'')
20	24963	Fork—Coupling
21	08232	Screw—Soc. Hd. Cap (1/4''-20x5/8'') (3)*
23	53615	Spring (Set of 9)
25	14679	Shim—Chuck Head
26	30179	Post—Stop (2)*
27	34153	Post—Spring
28	21325	Spring
30	08584	Screw—Lock (5/16''-18x5/32'')
31	23779	Assy.—Dog & Pin
33	14685	Wick—Felt (2)*
34	14263	Ring—Rubber
35	25763	Ring—Dust Shield Retainer
36	06673	Screw—Rd. Hd. (#8-32x3/8'') (3)*
37	21468	Ring—Retainer
40	24953	Aligner
41	24957	Key—Thrust
44	24185	Roller—Chuck (Set of 3)
46	30069	Oiler—Elbow
47	33097	Assy.—Complete Spindle (Incl's. Fig's. 21, 23 & 37 thru 44)

*Order Quantity As Needed

SIOUX TOOLS INC.

SIOUX CITY, IOWA, U.S.A. 51102

SIOUX TOOLS

Chuck & Head Assembly (9/16'' To 1 1/4'' Capacity) For 956, 958

Furnish Machine and Serial Number When Ordering Parts

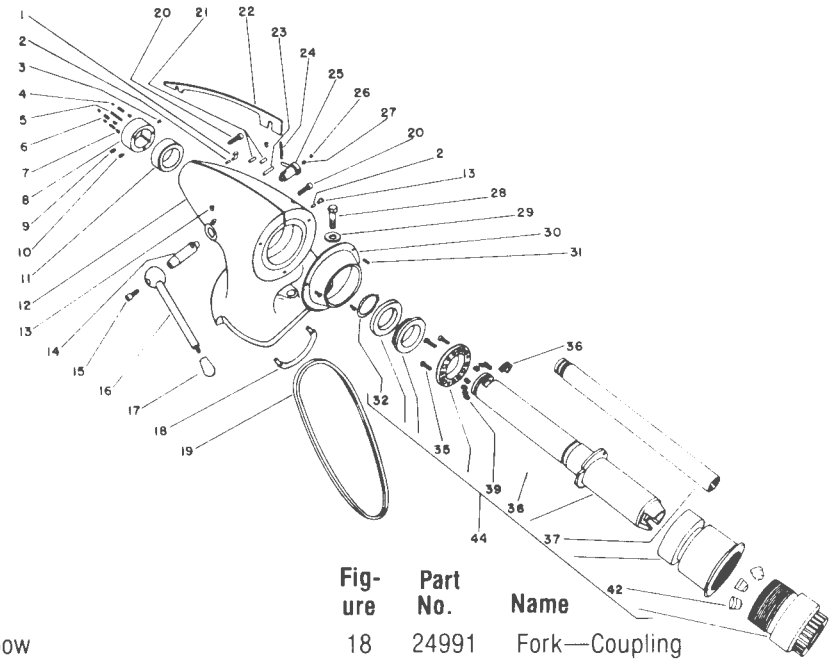


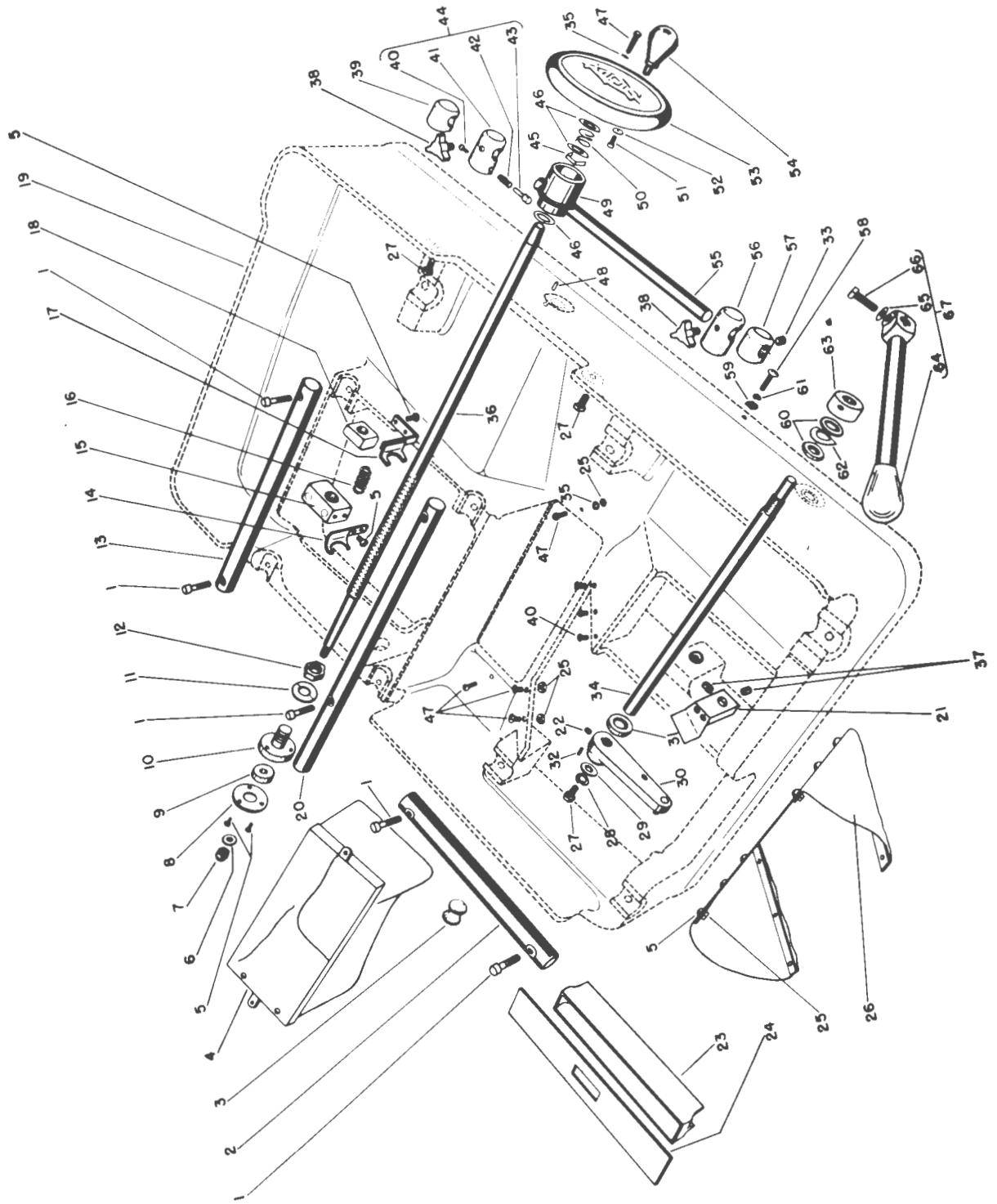
Figure	Part No.	Name
1	30069	Oiler—Elbow
2	14685	Wick—Felt (2)
3	08021	Screw—Soc. Flat Pt. Set (1/4''-20x1/4'')
4	08596	Screw—Soc. Flat Pt. Set (5/16''-18x1/4'') (3)*
5	24829	Key—Chuck Collar
6	21315	Spring (3)*
7	24956	Button—Push (3)*
8	24990	Knob—Chuck
9	08032	Screw—Soc. Full Dog Set (1/4''-20x1/2'')
10	08605	Screw—Soc. Half Dog Set (5/16''-18x1/2'')
11	24989	Collar—Adjustment
12	33183	Assy.—Chuck Head (Incl's. Fig's. 1, 2, 13, 20, 21, 22, 23)
13	30073	Cup—Oil (3)*
14	24975	Dog—Front
15	08835	Screw—Soc. Hd. Cap (5/16''-18x5/8'')
	08832	Screw—Soc. Button Hd. (5/16''-18x5/8'')
16	23722	Assy.—Handle & Head
17	04006	Ball—Lever
18	24991	Fork—Coupling
19	14469	Belt—''V''
20	08798	Screw—Soc. Hd. Cap (5/16''-18x1/4'') (2)*
21	30179	Pin—Roll (2)*
22	14670	Shim—Chuck Head
23	34008	Post—Spring
24	21338	Spring
25	23795	Assy.—Dog & Pin
26	08584	Screw—Lock (5/16''-18x5/32'')
27	08582	Screw—Soc. Cut Pt. Set (5/16''-18x5/16'')
28	09421	Bolt—Swivel Lock (1/2''-13)
29	25996	Washer
30	12177	Shield—Dust
31	07232	Screw—Rd. Hd. (#10-24x1/2'') (3)*
32	21472	Ring—Retainer
35	08232	Screw—Soc. Hd. Cap (1/4''-20x5/8'') (3)*
36	24319	Key—Thrust
37	24328	Aligner—Valve
39	53701	Spring (Set of 12)
42	24321	Roller—Chuck (Set of 3)
44	33104	Assy.—Complete Spindle

*Order Quantity As Needed

SIOUX TOOLS INC.

SIOUX CITY, IOWA, U.S.A. 51102

Base Assembly For 956, 957, & 958



When Ordering Parts Specify the Machine Number and Serial Number

SIOUX TOOLS

Base Assembly For 956, 957, & 958

Furnish Machine and Serial Number When Ordering Parts

Figure	Part No.	Name
1	08842	Screw—Socket Hd. Cap (5/16" - 18x1 1/2") (6)*
2	34059	Bar—Way
3	34215	Roller—Carriage
4	23329	Assy.—Splash Apron & Frame
5	07205	Screw—Rd. Hd. (#10 - 24x3/8") (13)*
6	25075	Washer—Thrust
7	09581	Nut—Elastic Stop (3/8" - 16)
8	25148	Plate—Thrust
9	10161	Bearing—Ball
10	24128	Cage—Thrust Bearing
11	25218	Washer—Spring
12	09685	Nut—Hex (3/4" - 16)
13	24005	Bar—Cross Slide Way
14	23378	Assy.—Main Bracket
15	11153	Dog—Main
16	21245	Spring—Tension
17	53667	Assy.—Auxiliary Guide
18	11125	Dog—Auxiliary
19	11041	Base
20	24400	Bar—Cross Slide Way
21	53726	Assy.—Cam [Incl's. (2) Fig. 37]
22	08581	Screw—Soc. Cup Pt. Set (5/16" - 18x3/8")
23	12192	Guard—Way Bearing
24	25761	Plate—Dust Shield
25	09464	Nut—Hex (#10 - 24) (12)*
26	53665	Assy.—Bellows
27	08771	Screw—Hex Hd. (5/16" - 18x5/8") (3)*
28	09770	Washer—Lock
29	25327	Washer
30	23914	Assy.—Shifter Arm (Incl's. Fig. 22)
31	24392	Spacer—Shifter Arm
32	34359	Key—Shifter Lever
33	08580	Screw—Soc. Cup Pt. Set (5/16" - 18x1/4")
34	24396	Shaft—Shifter
35	09724	Washer—Lock (#10) (3)*
36	24395A	Screw—Feed
37	08003	Screw—Soc. Cup Pt. Set (2)
38	23959	Knob
39	24500	Stop—End
40	07232	Screw—Rd. Hd. (#10 - 24x1/2") (2)*
41	24895	Stop—Adjustable
42	21252	Spring—Stop Button
43	24772	Button—Shock Absorber
44	23783	Assy.—Adjustable Stop
45	21233	Spring—Friction
46	25217	Washer (3)*
47	07114	Screw—Fil. Hd. (#10 - 24x3/4") (7)*
48	24268	Pin—Index
49	24192	Indicator—Feed Screw
50	41241	Spring
51	06608	Screw—Soc. Hd. Cap Self Locking (#8 - 32x3/8")
52	25196	Washer
53	12093	Wheel—Hand
54	53853	Handle
55	24499	Rod—Stop
56	24502	Stop—Adjustable
57	24501	Stop—Fixed
58	08044	Screw—Rd. Hd. (1/4" - 20x1") (6)*
59	09500	Nut—Hex (1/4" - 20) (6)*
60	25206	Washer (3)
61	09751	Washer—Lock (1/4") (6)*
62	25379	Washer—Spring
63	24543	Nut—Brake
64	04005	Grip—Ball
65	25127	Washer
66	08775	Screw—Hex Hd. (5/16" - 18x1")
67	23374	Assy.—Shifter Handle

*Order Quantity As Needed

SIOUX TOOLS INC.

SIOUX CITY, IOWA, U.S.A. 51102

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SIOUX TOOLS

Cross Slide Assembly For 956, 957, & 958

Furnish Machine and Serial Number When Ordering Parts

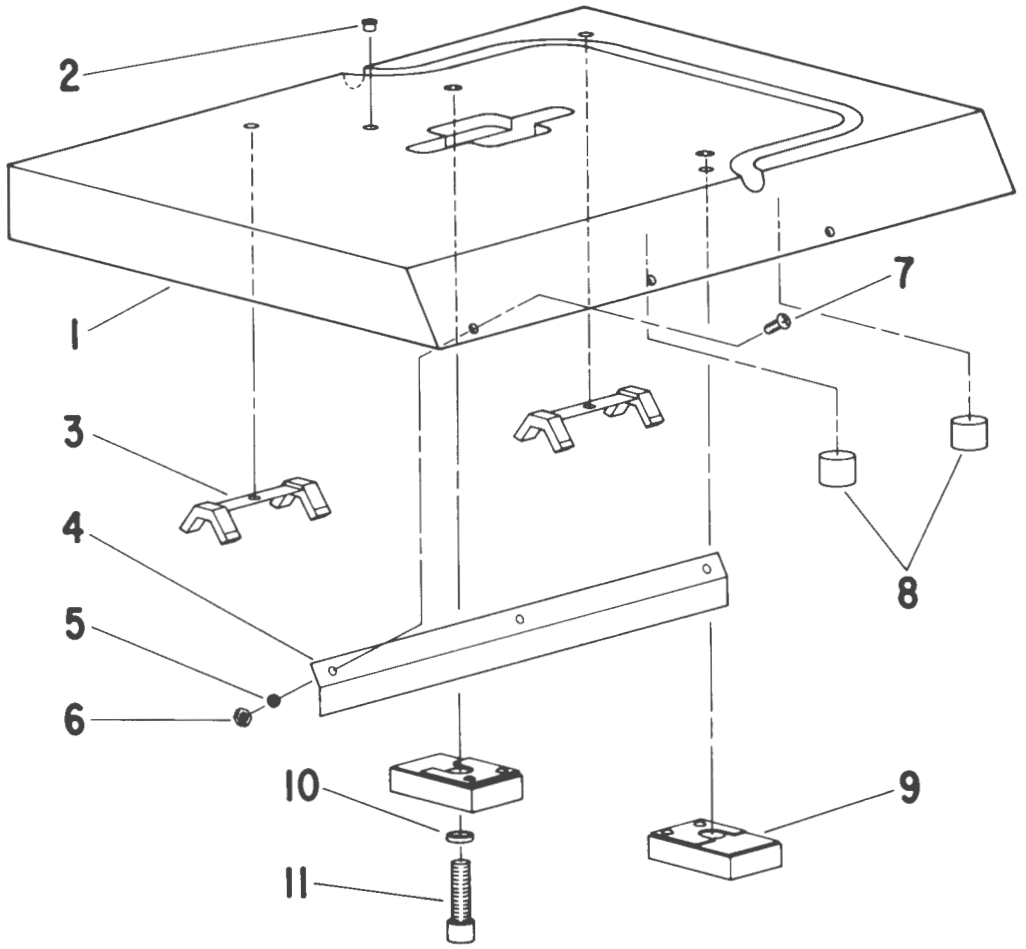

Figure	Part No.	Name
1	11438	Slide—Cross (Incl. Figs. 2 thru 8).
2	30073	Oiler (4)*
3	23650	Assy.—Felt Retainer (2)*
4	25299	Stop—Water (Up to Ser. "B")
5	09724	Washer—Lock (Up to Ser. "B") #10-3/64x3/64" (3)*
6	09464	Nut—Hex. #10-24 (3)*(Up to Ser. "B")
7	07232	Screw—Phil. Rd. Hd. (Up to Ser. "B") #10-24x1/2" (3)*
8	14650	Pad—Felt Oil (2)*
9	53528	Assy.—Cross Slide Clamp (2)*
10	09789	Washer—Lock 3/8"x1/8"x3/32" (2)*
11	09081	Screw—Soc. Hd. Cap 3/8"-16x1 1/4" (2)*

*Order Quantity As Needed

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Valve End Attachment For 956, 957, & 958 Valve Face Grinding Machines

Furnish Catalog, Serial and Model Number When Ordering Parts

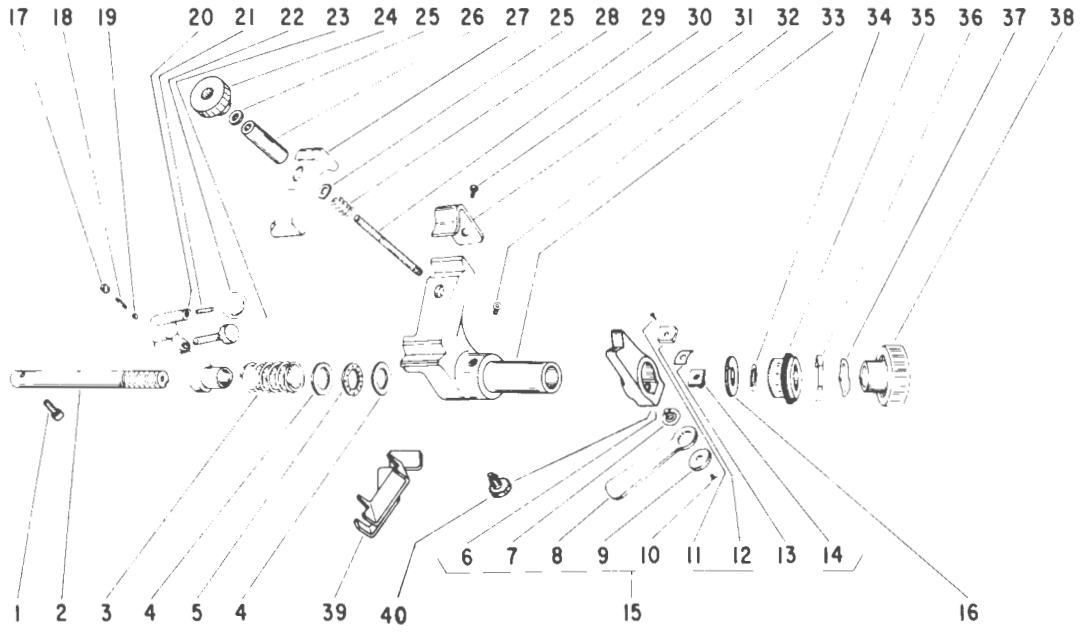

Figure	Part No.	Name
1	08836	Screw—Socket Hd. Cap (5/16- 18x1'')
2	54535	Stud—Swivel
3	21220	Spring
4	25871	Washer—Thrust (2)*
5	10321	Bearing—Thrust (Up to Ser. ''B'')
6	11437A	Rest—Butt Grinding(Includes Fig. 40)
7	23260	Assy.—Screw & Washer (Up to Ser. ''B'')
8	25885	Wrench (Up to Ser. ''B'')
9	25205	Washer—Wrench Retainer (Up to Ser. ''B'')
10	06930	Screw—Oval Hd. C'Sunk (Up to Ser. ''B'')
11	13068	Pin—Lock (Up to Ser. ''B'')
12	13058	Member—Lock (Up to Ser. ''B'')
13	21237	Spring—Tension (Up to Ser. ''B'')
14	24408	Nut—Flange (Up to Ser. ''B'')
†15		Assy.—Grinding Attachment Rest & Wrench
16	25657	Washer—Thrust
17	09275	Screw—Soc. Cup Pt. Set (7/16'' - 14x3/8'')
18	21219	Spring—Friction Slug
19	13020	Slug—Friction
20	11428	Arm—Dressing (Old Style)
	11442	Arm—Dressing (New Style)
21	24280	Stud—Ball ▲
22	14008	Ball—Handle ▲
23	1715A	Diamond—Dressing
24	14198	Knob
25	25154	Washer (2)*
26	34407	Sleeve—Handle
27	11308	Clamp—Valve
28	21344	Spring
29	34406	Stud—Handle
30	06672	Screw—Rd. Hd. (#8 - 32x1/4'')
31	25874	Clip—Valve Clamp
32	30073	Cup—Oil
33	33067	Assy.—Valve Holder & Plates (Incl's. Fig. 32)
34	25155	Washer—Bearing
35	24162	Thimble
36	21224	Spring—Friction
37	25153	Washer—Crimped
38	24163	Knob—Adjusting
39	53589	Assy.—Chamfering Vee
40	63340	Assy.—Thumb Screw

*Order Quantity As Needed

▲ Not required when ordering New Style Dressing Arm Part No. 11442

† No Longer Available—See Fig. 6

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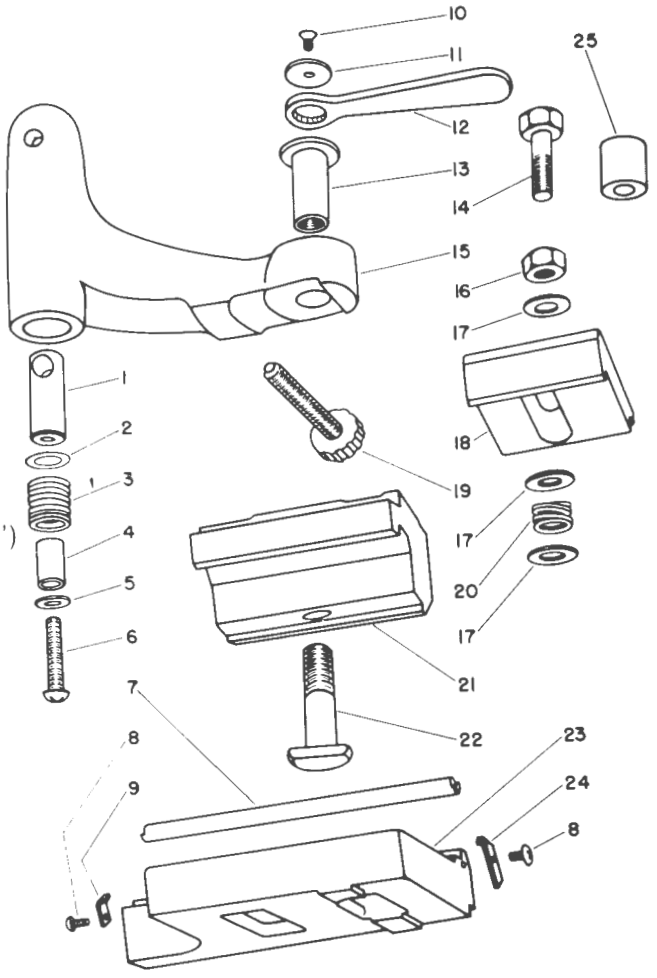
Dressing Tool Assembly For 956, 957 & 958

Furnish Machine and Serial Number When Ordering Parts

Figure	Part No.	Name
1	13035	Bar—Tension
2	25207	Washer
3	21234	Spring—Tension
4	13033	Spacer
5	25069	Washer
6	08045	Screw—Rd. Hd. (1/4''-20x1 3/8'')
7	24241	Rod—Clamp Bearing
8	06235	Screw—Rd. Hd. (#6-32x1/4'') (2)*
9	25002	Clip—Retainer
10	06930	Screw—Oval Hd. C'sunk (#8-32x5/16'')
11	25205	Washer—Wrench Retainer
12	25296	Wrench
13	24387	Nut—Swivel Lock
14	34142	Bolt—Hex Hd.
15	11101	Post
16	09590	Nut—Hex (3/8''-16)
17	25154	Washer (3)*
18	11156	Clamp—Dressing Tool
00	Cat. #	
19	681	Diamond—Dressing
20	21276	Spring—Clamp Tension
21	23301	Assy.—Slide & Pin
22	24388	Screw—Clamp
23	11100	Base
24	25202	Clip—Retainer
25	34141	Spacer



*Order Quantity As Needed

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This pdf incorporates the following model numbers:

956, 957, 958