



**NOTE: Parts are no longer available for this tool.**

**The manual will continue on the next page.**



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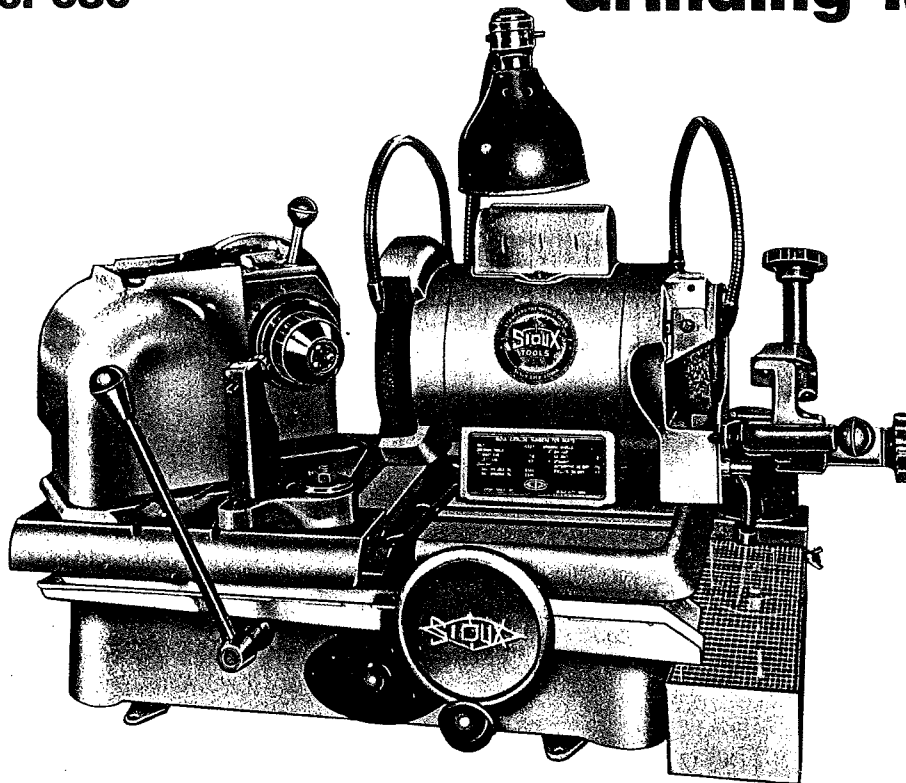
2901 FLOYD BOULEVARD ■ SIOUX CITY, IOWA 51102 ■

Form No. A360C  
Dated 5-5-77  
Supplements Form No. A360B  
Dated 1-75

## **PARTS LIST INSTRUCTIONS**

# **Sioux Valve Face No. 680 Grinding Machines**

For Serial C & Up



No. 680

### **Prepare Machine For Operation**

1. Wipe off shipping grease, clean thoroughly.
2. Remove the hex nut which locks the chuck carriage plate during shipping.
3. **Lubrication:** Put a few drops of SAE 20 oil in each oiler every three months or 50 hours of operation. See illustration for oiler locations. Grinding motor is permanently lubricated and sealed. Oil pump motor and chuck motor every six months. See illustration for location of oilers.
4. **Coolant:** Use Sioux grinding oil No. 250 which comes ready for use — do not dilute. Coolant tank capacity: 3 qts.
5. Run the machine for a while, with chuck motor and pump motor on to warm up and distribute lubricant.
6. Attach dressing tool as shown. (SEE INSTRUCTIONS FOR DRESSING WHEELS.)



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## INSTRUCTIONS

### Grounding Instructions

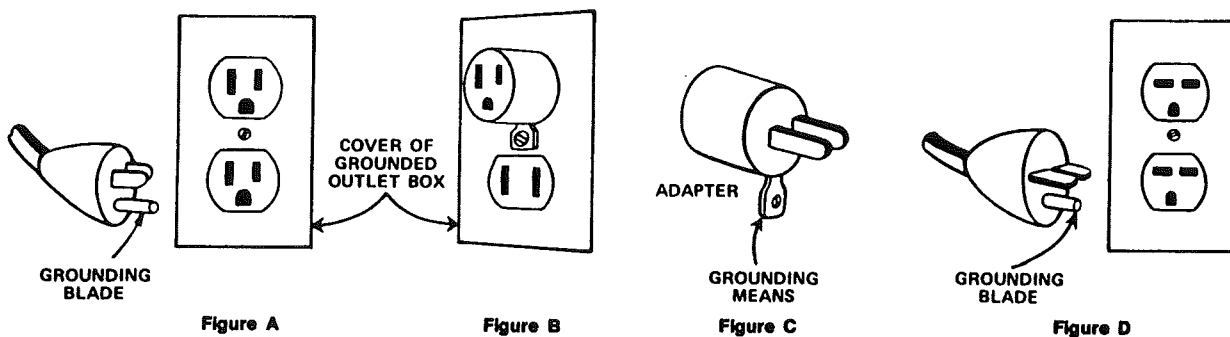
This tool should be grounded while in use to protect the operator from electric shock.

#### 1. Cord-Connected Tools

The tool is 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.



**ADAPTER FOR THREE-PRONG GROUNDING TYPE PLUG, AS SHOWN IN FIGURES "B" AND "C", IS NOT APPLICABLE IN CANADA.**

### 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. Do not operate the machine without belt guard.
8. Keep machine and work area clean. Cluttered areas invite accidents.



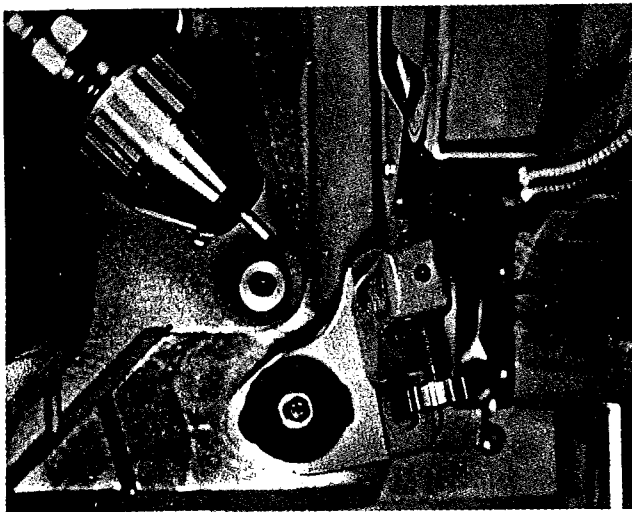
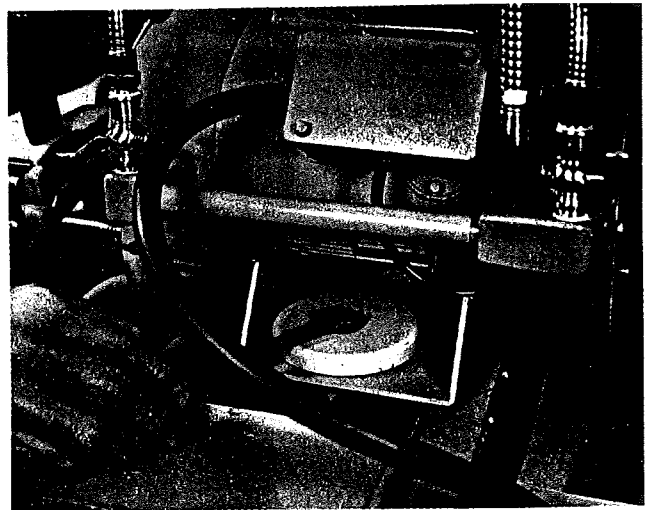
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## INSTRUCTIONS

### Dressing Left Wheel (Cat. No's. 182 & 177)

Position chuck carriage to extreme left. Adjust diamond holder in post so that the diamond has about 3/8" overhang in front of post. Place attachment with diamond slightly clearing the wheel periphery, pointing at a slight angle to the wheel face and about 1/8" to the left of the wheel. Firmly tighten the attachment to the chuck carriage plate. The amount of diamond overhang should be kept to a minimum in order to maintain as rigid a support as possible. 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.

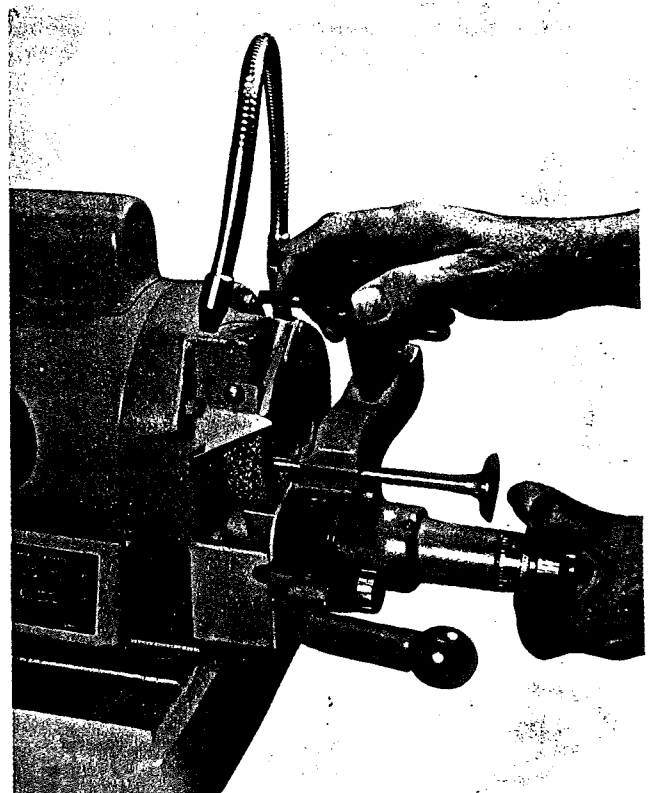


### Valve Reconditioning

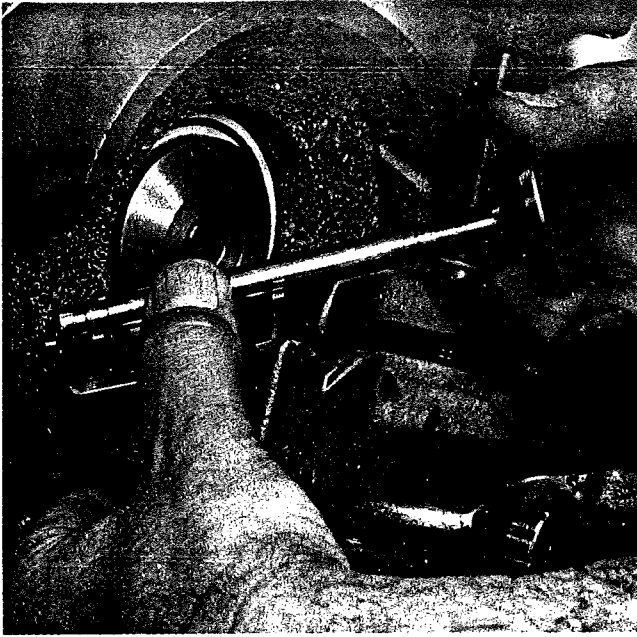
1. **True Valve Stem Ends:** To insure proper valve operation, square valve stem ends after dressing right grinding wheel and renew chamfer with chamfering vee. The chamfer need not exceed 1/32" inch. See illustrations.

After adjusting diamond for dressing, apply coolant. Pass the diamond over the wheel while feeding cuts of .0005" or less per pass. Feed screw micrometer 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.

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 at top of next column.

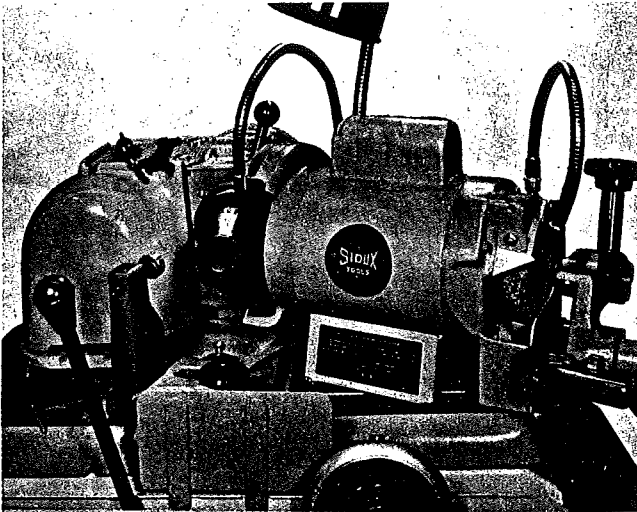


## INSTRUCTIONS

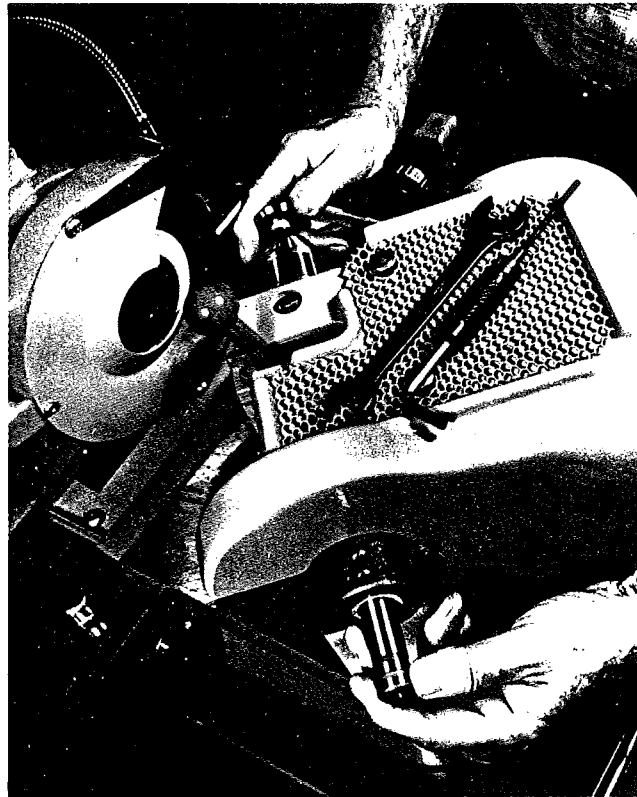


### Chamfering Vee

2. Dress left grinding wheel. See instructions.
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 for grinding head position for 0° setting.



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. With roller sleeve type chuck, tighten by hand to desired tension.



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. Tighten grinding head clamp. See illustration top of column next page.



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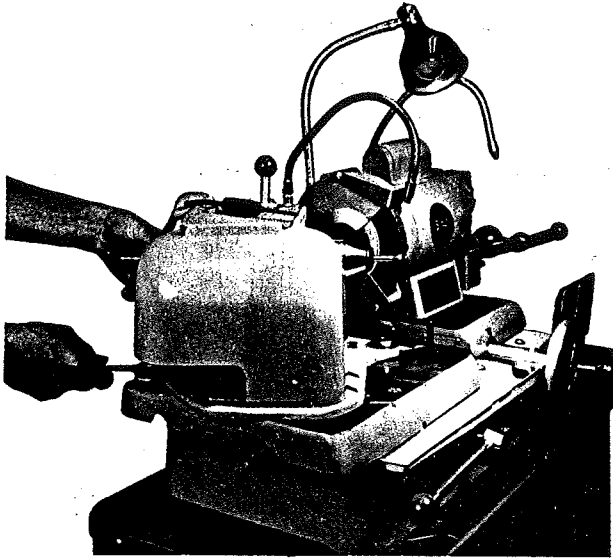


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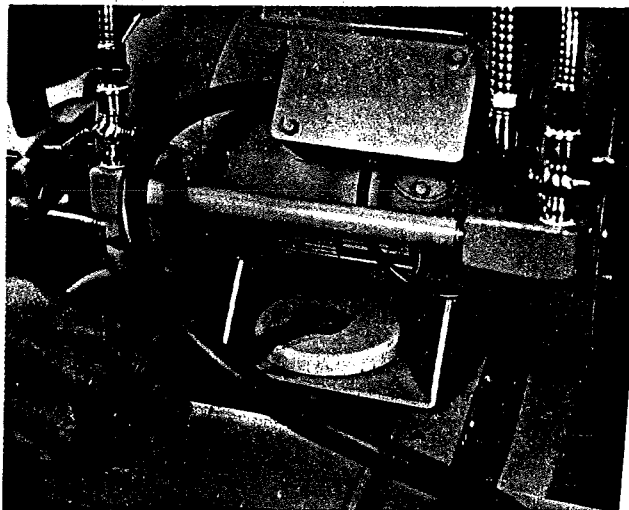
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## INSTRUCTIONS



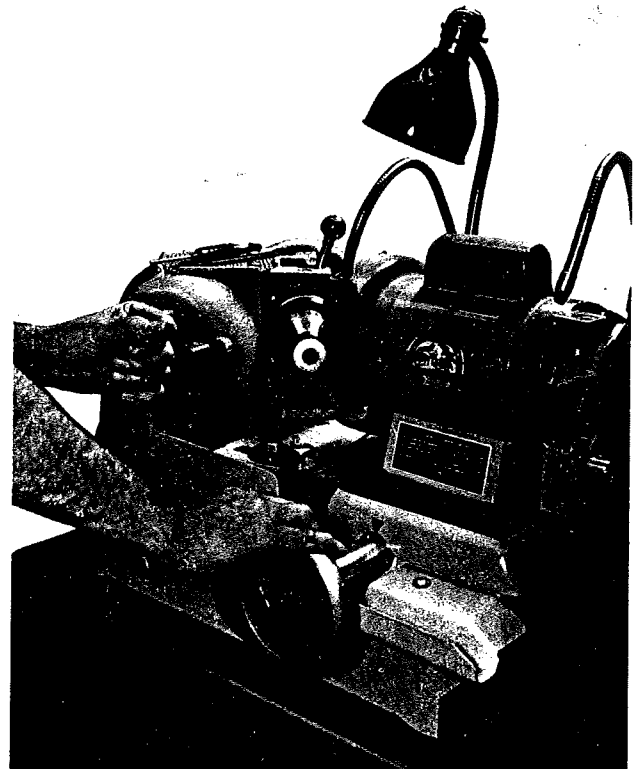
Set the chuck carriage plate stop nut, located under the left skirt, so that the valve face will just reach the right edge of the grinding wheel but never go beyond. Dress grinding wheel to clean up. (SEE INSTRUCTIONS FOR DRESSING). Advance grinding wheel towards valve until wheel just touches valve. 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 storage 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).



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.

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# Instructions

## Adjusting or Replacing Belt

1. Loosen (4) four motor mounting screws.
2. Slide motor to rear of machine.
3. Replace belt if needed at this time.
4. Slide motor to the front of the machine until the idler arm has been depressed approximately  $\frac{1}{8}$ ". Note the height of the arm and record on card (See Fig. A).
5. Secure bolts and replace cover.
6. Check idler height every 3 months or 50 hours of operation. Adjust motor position to take up belt stretch whenever the height of the idler is not correct.
7. Should belt slip when properly adjusted clean both pulleys and replace belt.

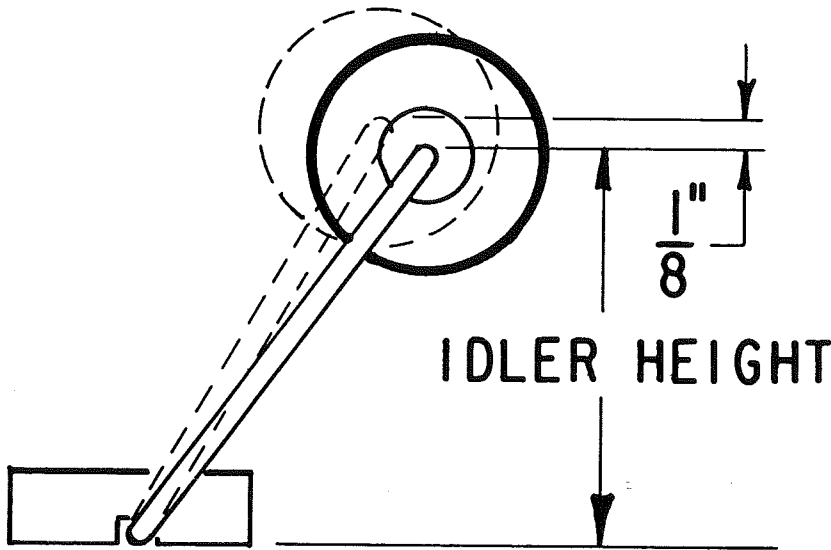


FIG. A

Your machine was designed as a precision machine. Keep it that way with proper lubrication and maintenance.



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## 649 Dressing Tool

Furnish Machine and Serial Number When Ordering Parts

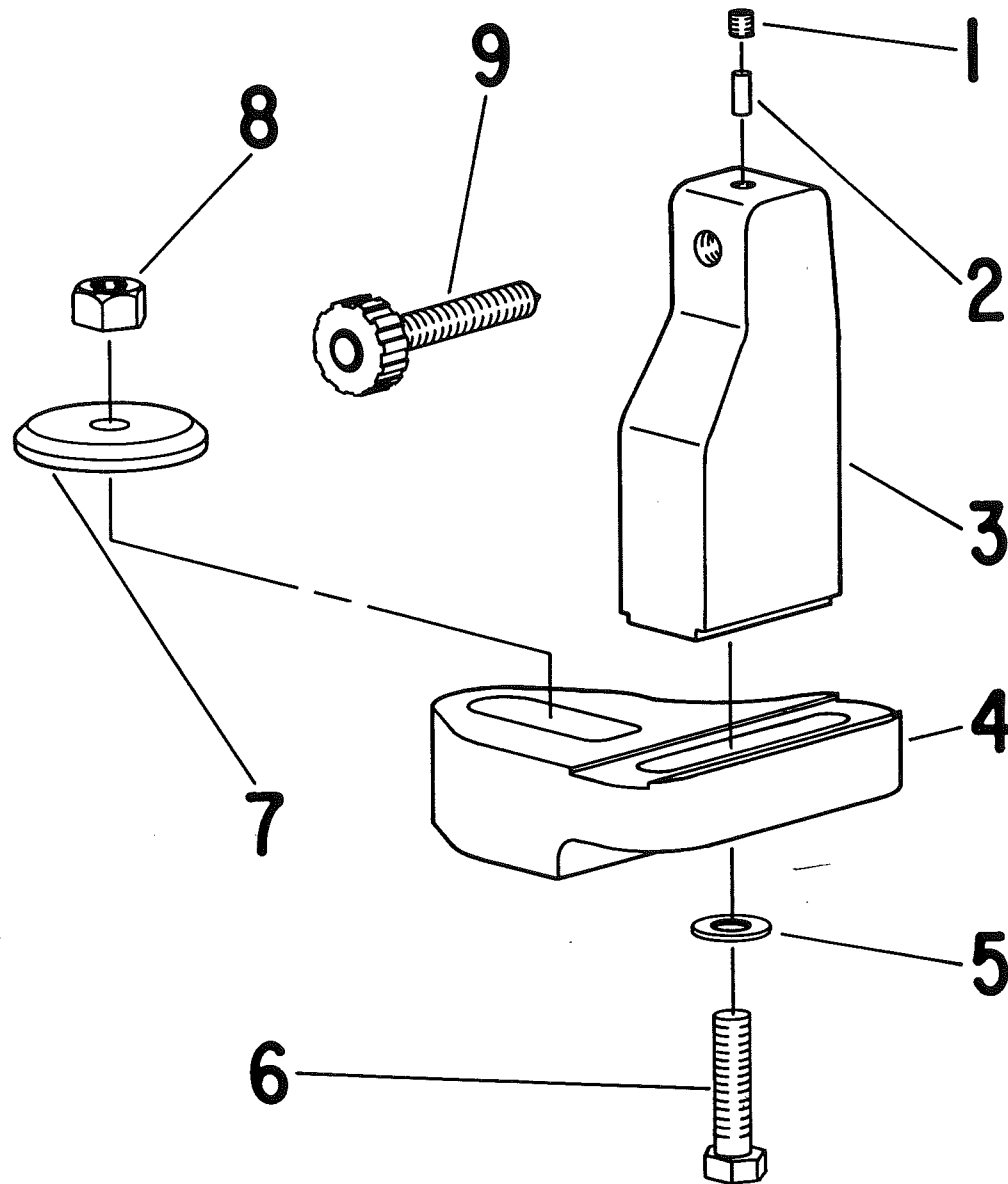


Figure	Part No.	Name
1	08001	Screw—Set
2	04253	Slug—Friction
3	11427	Post—Diamond Holder
4	11421	Base—Dressing Tool
5	25154	Washer

Figure	Part No.	Name
6	09106	Screw—Hex Hd. Cap
7	54443	Washer
8	09590	Nut—3/8"
9	1715-A	Diamond—Dressing



# Junction Box for 680, 684 & 689 115V. & 230V. Single Phase

Serial No's. Starting With "C"

**Furnish Machine and Serial Number When Ordering Parts**

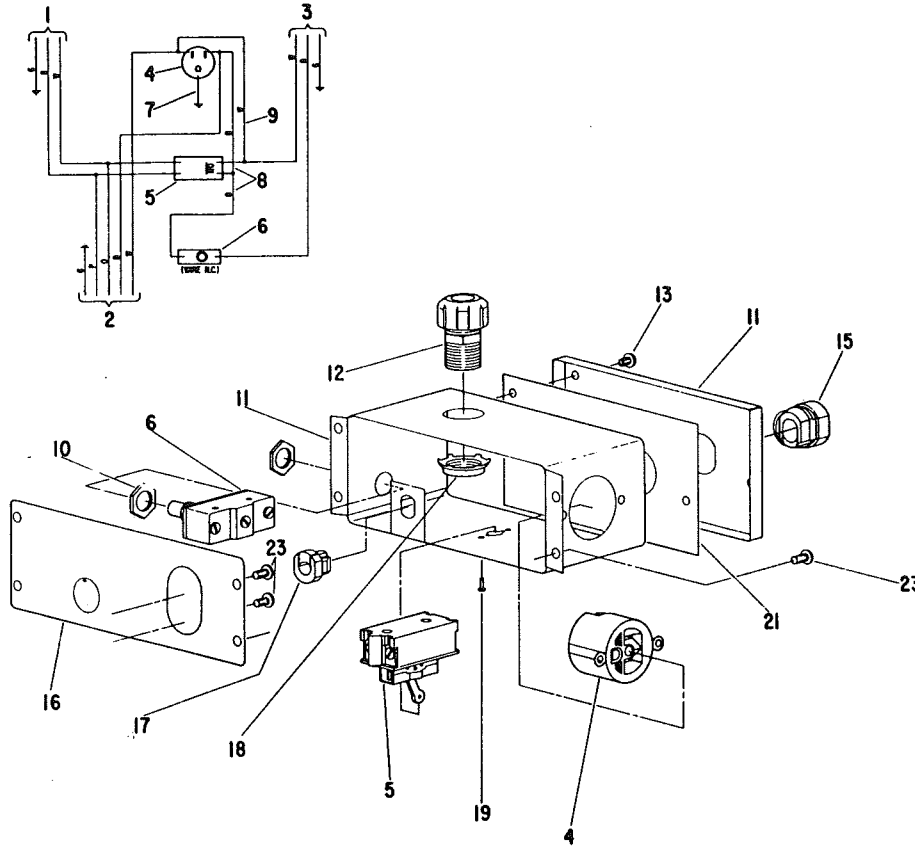


Fig-ure	Part No.	Name	Fig-ure	Part No.	Name
1	18505	Supply Cord (Specify Voltage)	11	53617	Assy.—Junction Box & Cover (Incl. Figs. 13 & 21)
2	18867	5 Cond. Cord (Grinding Head)	12	18659	Connector—Strain Relief
3	28086	3 Cond. Cord (Chuck Motor)	13	07200	Screw—Phil. Rd. Hd. (2)*
4	18799	Receptacle (115V)	15	14848	Strain Relief Bushing
	18877	Receptacle (230V)	16	05009	Gasket—Junction Box
5	18190	Switch—Toggle	17	14853	Strain Relief Bushing
6	18203	Switch—Limit	18	18658	Locknut
7	18872	Assy.—Ground Wire (Green)	19	06030	Screw—Phil. (2)*
8	18874	Assy.—Lead Wire (2)* (Black)	21	05010	Gasket—Cover
9	18873	Assy.—Lead Wire (White)	23	07205	Screw (6)*
10	30690	Nut—Lock (2)*			

\*Order Quantity As Needed



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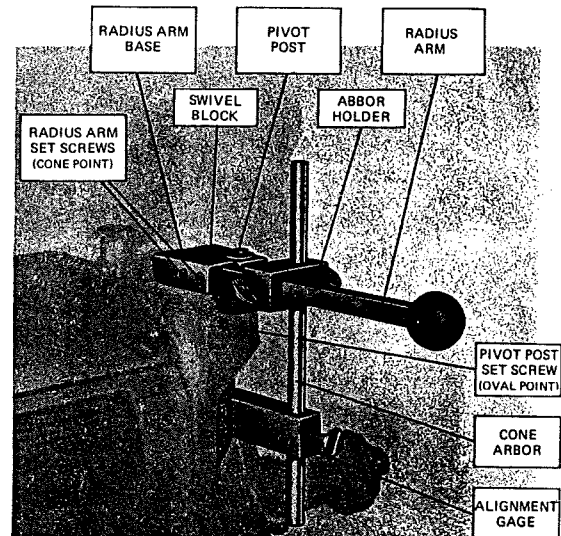
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Form No. A360C  
Dated 5-5-77  
Supplements Form No. A360B  
Dated 1-75

## No. 656G 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.

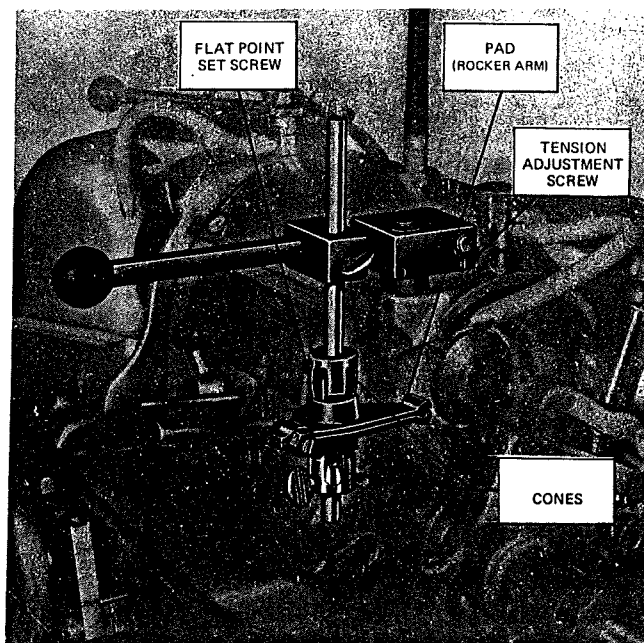
Place the pivot post, with its swivel block base and the radius arm base, in the 3/8" diameter hole in the top of the right wheel guard, the flat on the post facing forward. Seat the post firmly and secure with the oval point set screw.

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

Remove alignment gage.

Install the cone 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.



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# Cross Slide for 680, 684, 689

Furnish Machine and Serial Number When Ordering Parts

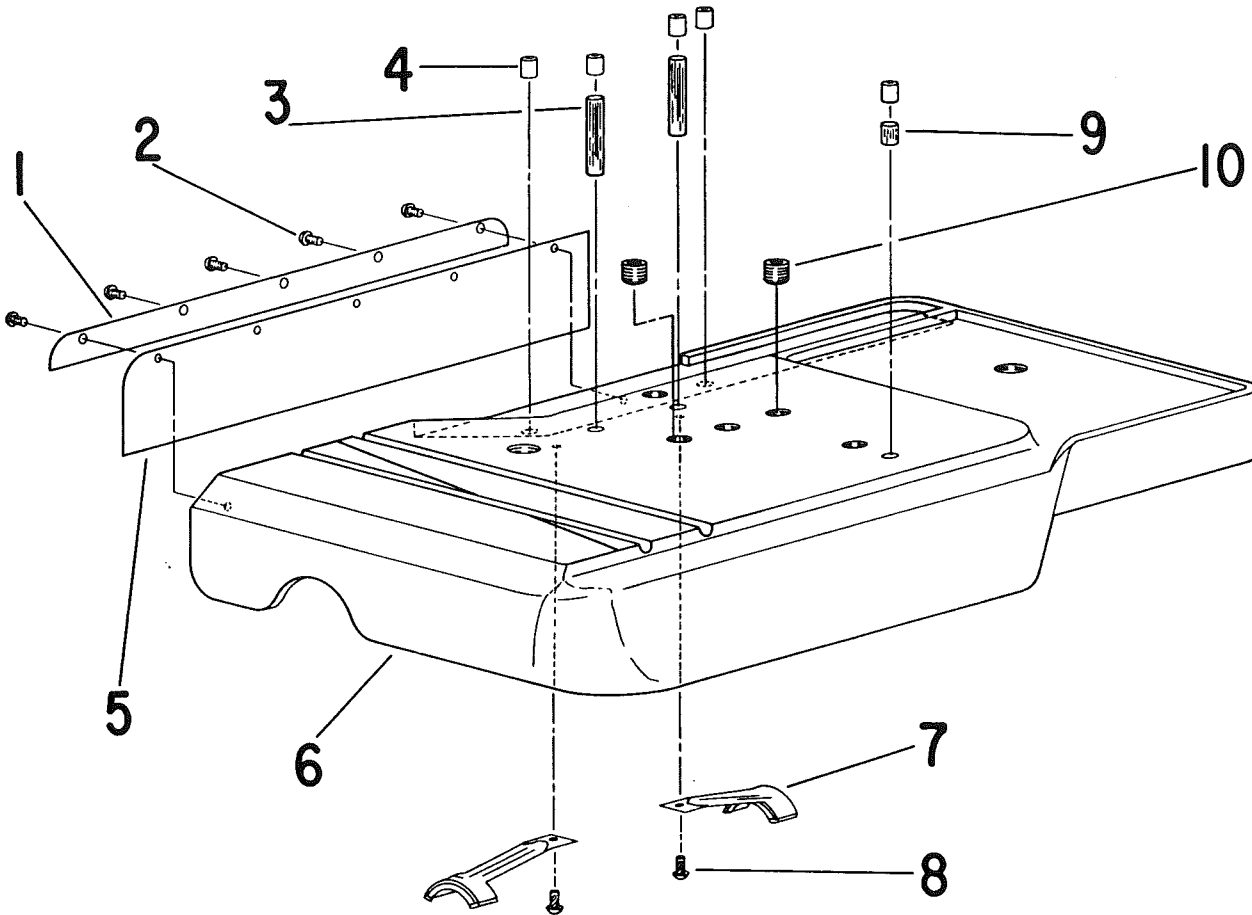


Figure	Part No.	Name
1	25193	Strip—Guard
2	06361	Screw—Self Tap (5)*
3	05015	Wick—Felt (2)*
4	30073	Cup—Oil (5)*
5	14214	Seal—Guard
6	53532	Assy.—Cross Slide (Includes Figs. 1 thru 10)

Figure	Part No.	Name
7	23158	Assy.—Oil Dispenser (2)*
8	09951	Screw—Drive (2)*
9	14685	Wick—Felt
10	09013	Screw—Socket (2)*

\*Order Quantity As Needed



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# Junction Box for 680, 684, & 689 208-220V. 3 Phase

Serial No's. Starting With "C"

Furnish Machine and Serial Number When Ordering Parts

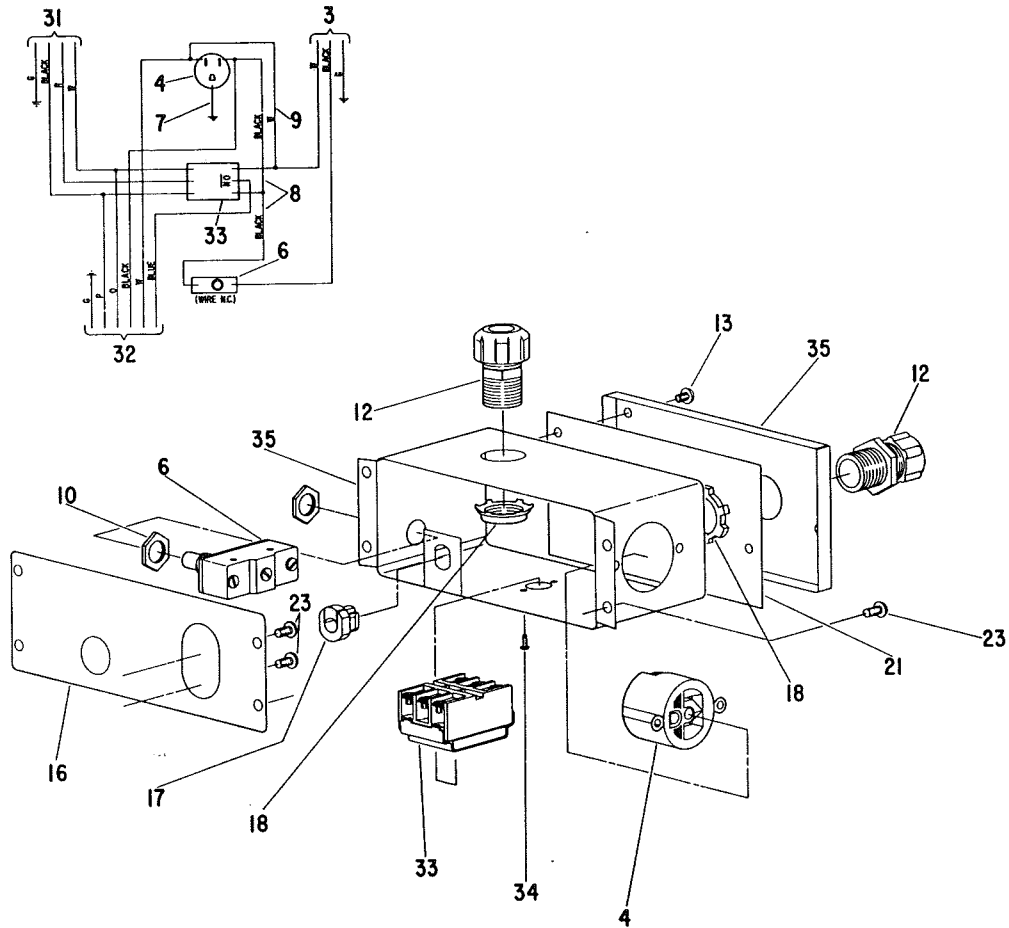
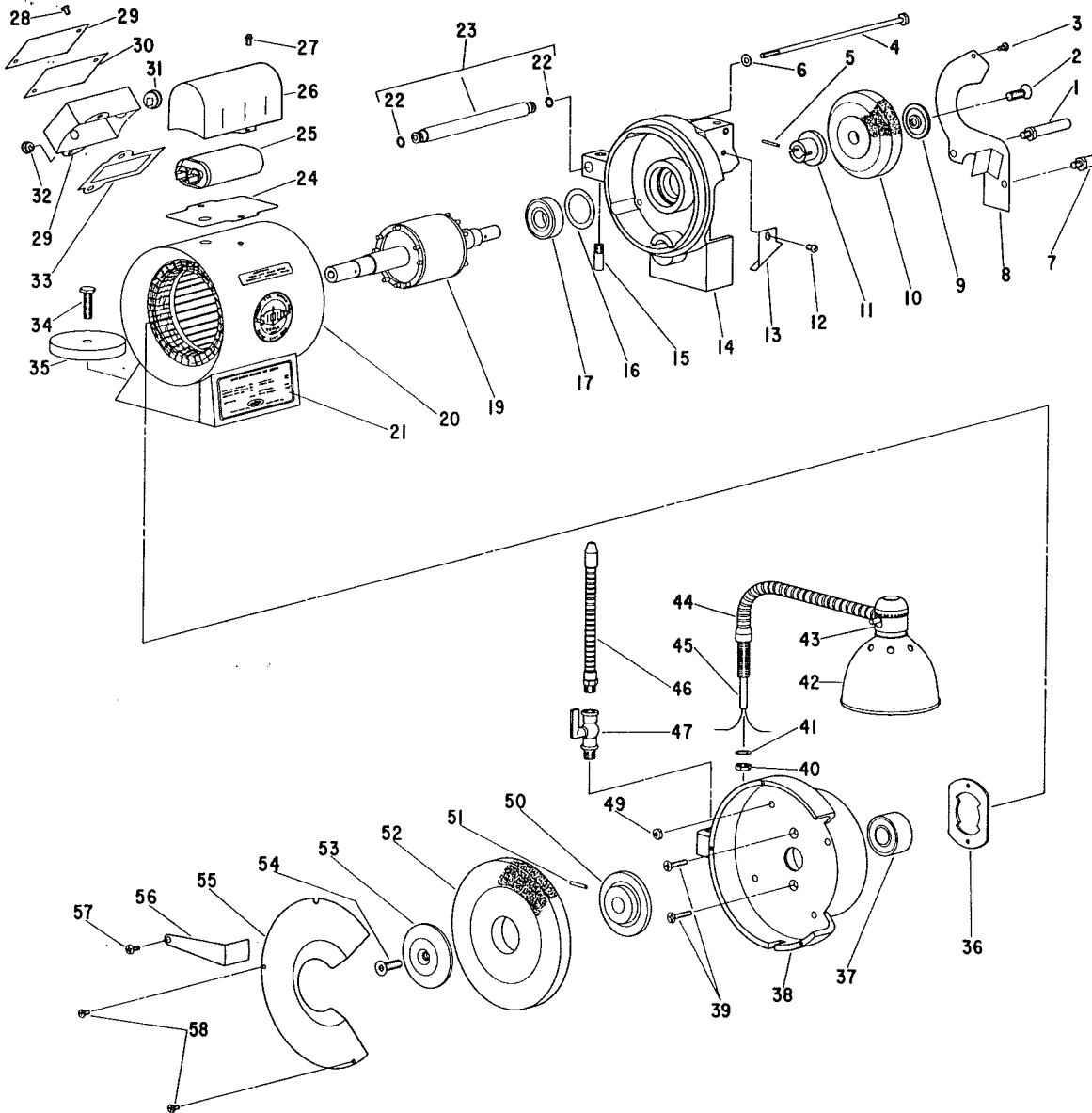


Figure No.	Part No.	Name
3	28086	3 Cond. Cord (Chuck Motor)
4	18877	Receptacle
6	18203	Switch—Limit
7	18872	Assy.—Ground Wire (Green)
8	18874	Assy.—Lead Wire (2)* (Black)
9	18873	Assy.—Lead Wire (White)
10	30690	Nut—Lock (2)*
12	18662	Connector—Strain Relief (2)*
13	07200	Screw—Phil. Rd. Hd. (2)*
16	05009	Gasket—Junction Box

Figure No.	Part No.	Name
17	14853	Strain Relief Bushing
18	18658	Locknut (2)*
21	05010	Gasket—Cover
23	07205	Screw (6)*
31	18879	Supply Cord
32	18880	6 Cond. Cord (Grinding Head)
33	18199	Switch—Toggle
34	06235	Screw—Phil. (2)*
35	53618	Assy.—Junction Box & Cover (Incl. Figs. 13 & 21)

\*Order Quantity As Needed

# Grinding Head for 680, 684 & 689



Furnish Machine and Serial Number When Ordering Parts



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Form No. A360C  
Dated 5-5-77  
Supplements Form No. A360B  
Dated 1-75

## Grinding Head for 680, 684 & 689

Furnish Machine and Serial Number When Ordering Parts

Fig- ure	Part No.	Name	Fig- ure	Part No.	Name
1	54437	Stop—Long	37	53679	Bearing Replacement Set
2	09095	Screw—Flat Hd. Socket	38	11423	End Shield (Left End)
3	07225	Screw—Phil. Pan Hd.	39	08176	Screw—Flat Head (2)*
4	07199	Bolt—Thru (4)*	40	09635	Nut—Hex Jam
5		Pin—Roll (Not Needed)	41	09804	Washer—Lock
6	25210	Washer (4)*	42	18964	Reflector—Plastic
7	54438	Stop—Short	43	18965	Socket—Bulb
8	35350	Cover—Right End	44	18798	Assy.—Flexible Light (Incl. Figs. 40, 42, 43 & 45)
9	24171	Flange—Grinding Wheel	45	14854	Tubing—Insulation
10	81	Wheel—Grinding	46	53509	Assy.—Coolant Tube (2)*
11	54530	Flange—Inner	47	30731	Valve (2)*
12	08275	Screw—Phil. Rd. Hd.	49	09495	Nut (4)*
13	35357	Deflector	50	54408	Flange—Inner
14	11422	End Shield (Right End)	51		Pin—Roll (Not Needed)
15	30734	Adaptor—Tube	52	176	Wheel—7" Grinding (For General Grinding)
16	41298	Washer—Thrust		177	Wheel—7" Grinding (For Grinding Stellite)
17	10281	Bearing—Ball	53	54407	Flange—Outer
19	16123	Rotor & Shaft (Specify Voltage & Phase)	54	09096	Screw—Flat Hd. Socket
20	17123	Assy.—Stator & Base (Incl. Fig. 21) (Specify Voltage & Phase)	55	35351	Cover—Left End
21	20929	Plate—Parts List	56	35352	Shield—Air
22	04252	Ring—"O" (2)*	57	08279	Screw—Phil. Rd. Hd.
23	53578	Assy.—Coolant Tube	58	07225	Screw—Phil. Pan Hd. (2)*
24	05013	Gasket—Capacitor Case		18911	Bulb—Light (115V)
25	18876	Capacitor		18988	Bulb—Light (230V)
26	35372	Case—Capacitor			COMPLETE ASSY.
27	06410	Screw (2)*	53523		Assy.—Grinding Head (Every- thing except Light Bulb, 31, 34 & 35) (Specify Voltage & Phase)
28	06673	Screw (2)*	53290		Assy.—Grinding Head (Incl. Figs. 4-6, 14, 16-30, 33, 36-39, 48, 49 & 51) (Specify Voltage & Phase)
29	35316	Box—Conduit			
30	05014	Gasket—Conduit Cover			
31	14855	Bushing—Strain Relief			
32	14856	Bushing—Strain Relief			
33	05012	Gasket—Conduit Box			
34	09104	Screw—Hex Hd.			
35	11426	Clamp—Grinding Head			
36	35373	Lockplate			

\*Order Quantity As Needed

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## Grinding Head for 680, 684 & 689

Serial No's. Starting With "B" & "C"

Furnish Machine and Serial Number When Ordering Parts

Fig- ure	Part No.	Name	Fig- ure	Part No.	Name
1	54437	Stop—Long	38	11423	End Shield (Left End)
2	09095	Screw—Flat Hd. Socket	39	08176	Screw—Flat Head (2)*
3	07225	Screw—Phil. Pan Hd.	40	09635	Nut—Hex Jam
4	07199	Bolt—Thru (4)*	41	09804	Washer—Lock
6	25210	Washer (4)*	42	18964	Reflector—Plastic
7	54438	Stop—Short	43	18965	Socket—Bulb
8	35350	Cover—Right End	44	18798	Assy.—Flexible Light (Incl. Figs. 40, 42, 43 & 45)
9	24171	Flange—Grinding Wheel	45	14854	Tubing—Insulation
10	81	Wheel—Grinding	46	53509	Assy.—Coolant Tube (2)*
11	54530	Flange—Inner	47	30731	Valve (2)*
12	08275	Screw—Phil. Rd. Hd.	49	09462	Nut (4)*
13	35357	Deflector	50	54531	Flange—Inner
14	11422	End Shield (Right End)	52	176	Wheel—7" Grinding (For General Grinding)
15	30734	Adaptor—Tube	177		Wheel—7" Grinding (For Grinding Stellite)
16	41298	Washer—Thrust	53	54407	Flange—Outer
17	10281	Bearing—Ball (2)*	54	09096	Screw—Flat Hd. Socket
19	16123	Rotor & Shaft (Specify Voltage & Phase)	55	35351	Cover—Left End
20	17123	Assy.—Stator & Base (Inc. Fig. 21) (Specify Voltage & Phase)	56	35352	Shield—Air
21	20929	Plate—Parts List	57	08279	Screw—Phil. Rd. Hd.
22	04252	Ring—"O" (2)*	58	07225	Screw—Phil. Pan Hd. (2)*
23	53578	Assy.—Coolant Tube	59	54532	Spacer—Outer (Early Models)
24	05013	Gasket—Capacitor Case	18911		Bulb—Light (115V)
25	18876	Capacitor	18988		Bulb—Light (230V)
26	35372	Case—Capacitor			COMPLETE ASSY.
27	06410	Screw (2)*	53523		Assy.—Grinding Head (Every- thing except Light Bulb, 34 & 35) (Specify Voltage & Phase)
28	06673	Screw (2)*	53290		Assy.—Grinding Head (Incl. Figs. 4-6, 14, 16-30, 33, 36-39, 48, 49) (Specify Voltage & Phase)
29	35316	Box—Conduit			
30	05014	Gasket—Conduit Cover			
31	14855	Bushing—Strain Relief			
32	14856	Bushing—Strain Relief			
33	05012	Gasket—Conduit Box			
34	09105	Screw—Hex Hd.			
35	11426	Clamp—Grinding Head			
36	35373	Lockplate			

\*Order Quantity As Needed

SEP 7 1977



# Chuck for 680 Machine (Cap. .230" to 11/16") Chuck for 684 Machine (Cap. 5/16" to 3/4") Special Small Capacity Chuck 680-4AE (Cap. .170" to 9/16")

Serial No's. Starting With "C"

Furnish Machine and Serial Number When Ordering Parts

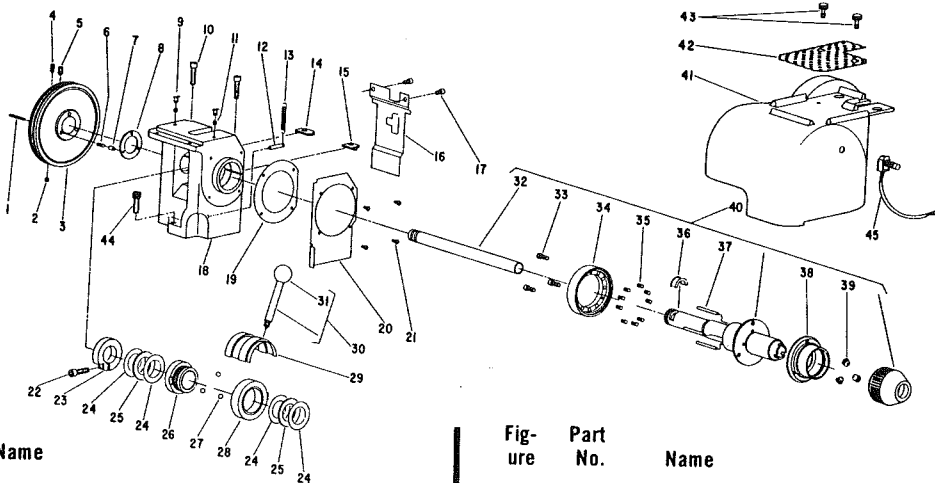


Figure	Part No.	Name
1	24829	Key—Chuck Collar
2	08021	Screw—Set (1/4" Cup Point)
3	11434	Pulley—Chuck Spindle
4	08032	Screw—Set (1/4" Dog Point)
5	08605	Screw—Set (5/16" Dog Point)
6	21315	Spring (3)*
7	54329	Rod—Push (Pulley) (3)*
8	35321	Washer—Thrust
9	30052	Cup—Oil (2)*
10	08798	Screw—Socket Hd. Cap (5/16") (2)*
11	14685	Wick—Felt (2)*
12	54401	Post—Spring
13	41290	Spring
14	14766	Shim—Chuck Head (Rear)
15	05003	Shim—Chuck Head (Front)
16	35325	Plate—Cover
17	08287	Screw—Socket Hd. Cap (1/4") (2)*
18	53566	Head—Chuck (Incl. Figs. 10, 14 & 15)
19	04245	Gasket—Dust Shield
20	35342	Shield—Chuck Head Dust (680)
	35343	Shield—Chuck Head Dust (684)
	35326	Shield—Chuck Head Dust (680-4AE)
21	06673	Screw (#8) (4)*
22	08794	Screw—Socket Hd. Cap (5/16")
23	54333	Clamp
24	10058	Race—Needle Thrust (4)*
25	10057	Bearing—Needle Thrust (2)*
26	11592	Cam—Stationary
27	53555	Assy.—Ball (Set of 3)
28	11593	Cam—Rotating
29	35341	Shield—Chuck Cam

Figure	Part No.	Name
30	54319	Handle—Lever
31	14008	Grip—Ball
32	24953	Aligner (680 & 684)
	24953M	Aligner (680-4AE)
33	08232	Screw—Socket Hd. Cap (1/4") (3)*
34	24951	Retainer—Spring
35	53615	Spring (Set of 9)
36	24957	Key—Thrust
37	54322	Rod—Push (4)*
38	24950	Ring—Adjustment
39	24185	Roller—Chuck (680 & 684)
		(Set of 3)
	34447	Roller—Chuck (680-4AE)
		(Set of 3)
40	53559	Assy.—Chuck & Aligner (680)
	53560	Assy.—Chuck & Aligner (684)
	53561	Assy.—Chuck & Aligner (680-4AE)
41	12400	Hood—Chuck Head
42	04281	Mat
43	08293	Screw—Thumb (2)*
44	09074	Screw—Socket Hd. Cap (3/8") (3)
45	28092	Assy.—Switch
		COMPLETE ASSY.
	53845	Assy.—Chuck (Incl. Figs. 1 thru 40) (680) (Cap. .230" to 11/16")
	53847	Assy.—Chuck (Incl. Figs. 1 thru 40) (684) (Cap. 5/16" to 3/4")
	53846	Assy.—Sp. 680-4AE Chuck (Incl. Figs. 1 thru 40) (Cap. .170" to 9/16")

\*Order Quantity As Needed



**SIoux TOOLS INC.**

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Form No. A360C  
Dated 5-5-77  
Supplements Form No. A360B  
Dated 1-75

## Chuck for 689 Machine (Cap. .230" to 5/8")

Serial No's. Starting With "C"

Furnish Machine and Serial Number When Ordering Parts

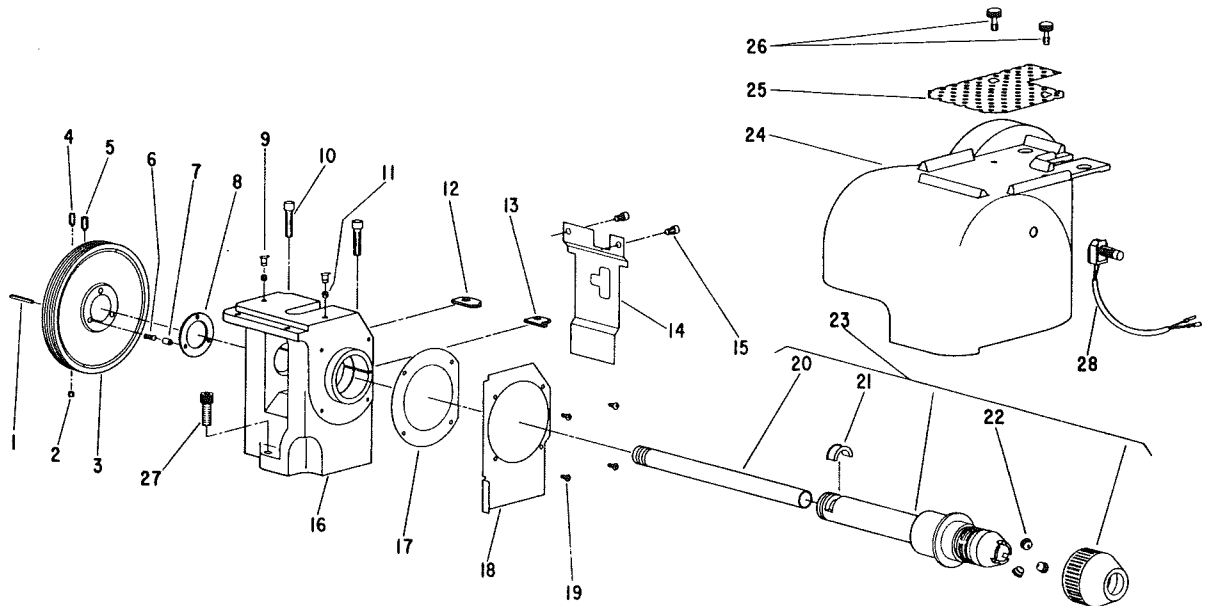


Figure	Part No.	Name
1	24829	Key—Chuck Collar
2	08021	Screw—Set (1/4" Cup Point)
3	11434	Pulley—Chuck Spindle
4	08032	Screw—Set (1/4" Dog Point)
5	08605	Screw—Set (5/16" Dog Point)
6	21315	Spring (3)*
7	54329	Rod—Push (Pulley) (3)*
8	35321	Washer—Thrust
9	30052	Cup—Oil (2)*
10	08798	Screw—Socket Hd. Cap (5/16") (2)*
11	14685	Wick—Felt (2)*
12	14766	Shim—Chuck Head (Rear)
13	05003	Shim—Chuck Head (Front)
14	35325	Plate—Cover
15	08287	Screw—Socket Hd. Cap (1/4") (2)*
16	53566	Head—Chuck (Incl. Figs. 10, 12 & 13)

Figure	Part No.	Name
17	04251	Gasket—Dust Shield
18	35369	Shield—Chuck Head Dust
19	06673	Screw—Phil. (4)*
20	24953	Aligner
21	24957	Key—Thrust
22	24185	Roller—Chuck (Set of 3)
23	53570	Assy.—Chuck & Aligner
24	12400	Hood—Chuck Head
25	04281	Mat
26	08293	Screw—Thumb (2)*
27	09704	Screw—Socket Hd. Cap. (3/8") (3)*
28	28092	Assy.—Switch
		COMPLETE ASSY.
53848		Assy.—Chuck (Incl. Figs. 1 thru 23) (Cap. .230" to 5/8")

\*Order Quantity As Needed

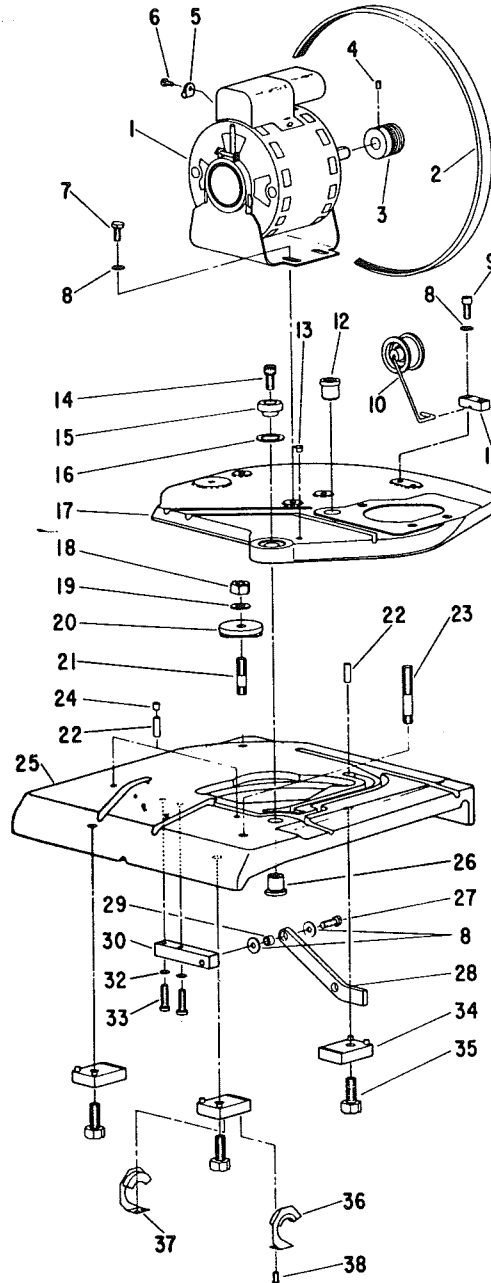
SEP 7 1977

# Carriage Plate & Motor Assy. for 680, 684 & 689

Serial No's. Starting With "C"

Furnish Machine and Serial Number When Ordering Parts

Figure	Part No.	Name
1	15141	Motor (Specify Voltage)
2	14471	Belt
3	54608	Pulley—Chuck Motor
4	07188	Screw—Set #10-24 x 5/16"
5	28085	Clamp—Cable
6	07206	Screw—Phil. Rd. Hd. #10-32 x 1/2"
7	08245	Screw—Hex. Hd. Cap. 1/4"-20 x 1/2" (4)*
8	25069	Washer (8)*
9	08232	Screw—Soc. Hd. Cap. 1/4"-20 x 5/8" (2)*
10	53794	Assy.—Idler
11	54606	Clamp—Idler
12	54465	Protector—Cord
13	30052	Oiler
14	08835	Screw—Soc. Hd. Cap 5/16"-18 x 5/8"
15	44570	Cap—Swivel
16	25379	Washer—Spring
17	53840	Assy.—Base Plate (Incl. Figs. 12 & 13)
18	09590	Nut—Hex. 3/8"-16
19	25053	Washer
20	11058	Lock—Chuck Head
21	24196	Stud
22	14773	Wick—Felt (3)*
23	54444	Stud
24	30073	Oiler (2)*
25	53839	Assy.—Carriage Plate (Incl. Figs. 21, 22, 23, 24 & 26)
26	44569	Lock—Swivel
27	08250	Screw—Hex. Hd. Cap. 1/4"-20 x 1"
28	44571	Link—Connecting
29	24311	Sleeve
30	44576	Post—Connecting Link
32	09750	Washer—Lock 1/4" (2)*
33	08288	Screw—Soc. Hd. Cap 1/4"-20 x 7/8" (2)*
34	53572	Assy.—Carriage Plate Clamp (3)*
35	09104	Screw—Hex. Hd. Cap 3/8"-16 x 1" (3)*
36	53709	Assy.—Left Hd. Wiper (3)*
37	53708	Assy.—Right Hd. Wiper (2)*
38	06582	Screw—Phil. Fil. Hd. #8-32 x 3/8" (10)*



\*Order Quantity As Needed



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Form No. A360C  
Dated 5-5-77  
Supplements Form No. A360B  
Dated 1-75

## Valve End Attachment for 680, 684 & 689 Valve Face Grinding Machines

Furnish Machine and Serial Number When Ordering Parts

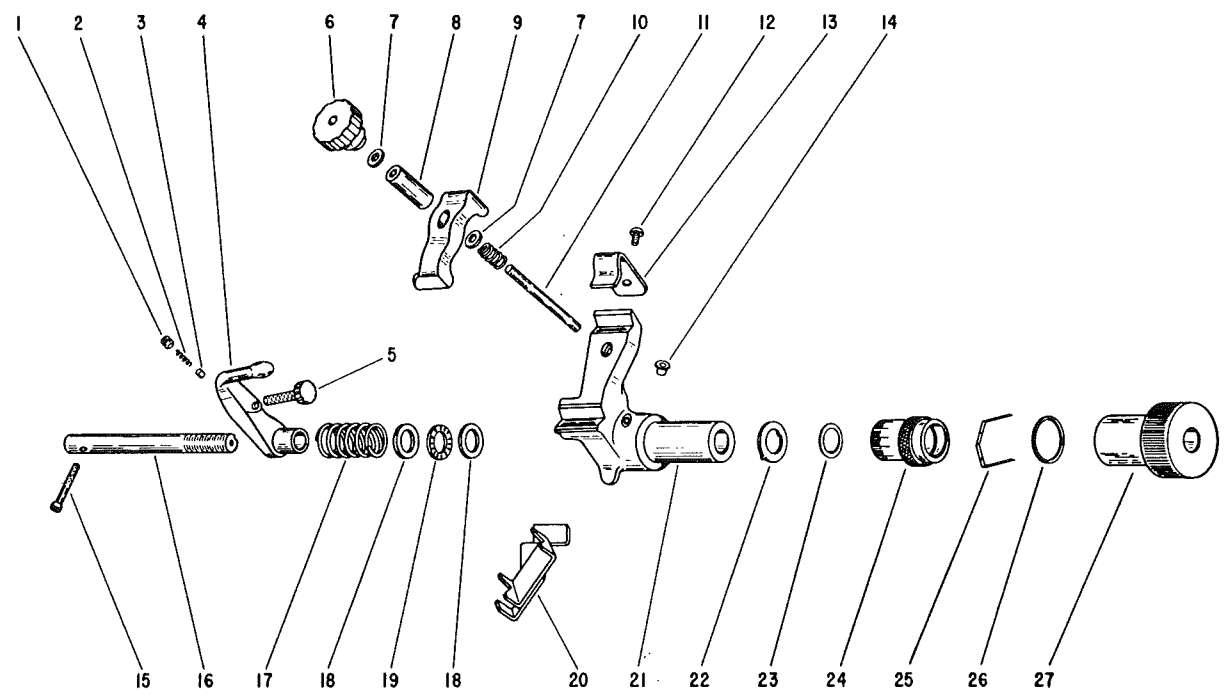


Fig-ure	Part No.	Name
1	09275	Screw—7/16"
2	21219	Spring—Friction Slug
3	13020	Slug—Friction
4	11442	Arm—Dressing
5	1715	Diamond—Dressing
6	11403	Knob
7	25154	Washer (2)*
8	44661	Sleeve—Handle
9	11308	Clamp—Valve
10	21344	Spring—Lift
11	34362	Stud—Handle
12	06672	Screw—1/4"
13	25874	Clip—Valve Clamp
14	30073	Cup—Oil
15	08836	Screw—5/16"
16	54463	Stud—Swivel

Fig-ure	Part No.	Name
17	21220	Spring—Valve Holder
18	25871	Washer—Thrust (2)*
19	10321	Bearing—Thrust
20	53589	Assy.—Chamfering Vee
21	43480	Assy.—Valve Holder & Plates
22	25657	Washer—Thrust
23	25155	Washer—Bearing
24	24162	Thimble
25	21224	Spring—Friction
26	25153	Washer—Crimped
27	24163	Knob—Adjusting

643 COMPLETE ASSY.  
Attachment—Valve End Grinding  
(Minus Fig. 20)

\*Order Quantity As Needed

SEP 7 1977

# Base for 680, 684 & 689

Furnish Machine and Serial Number When Ordering Parts

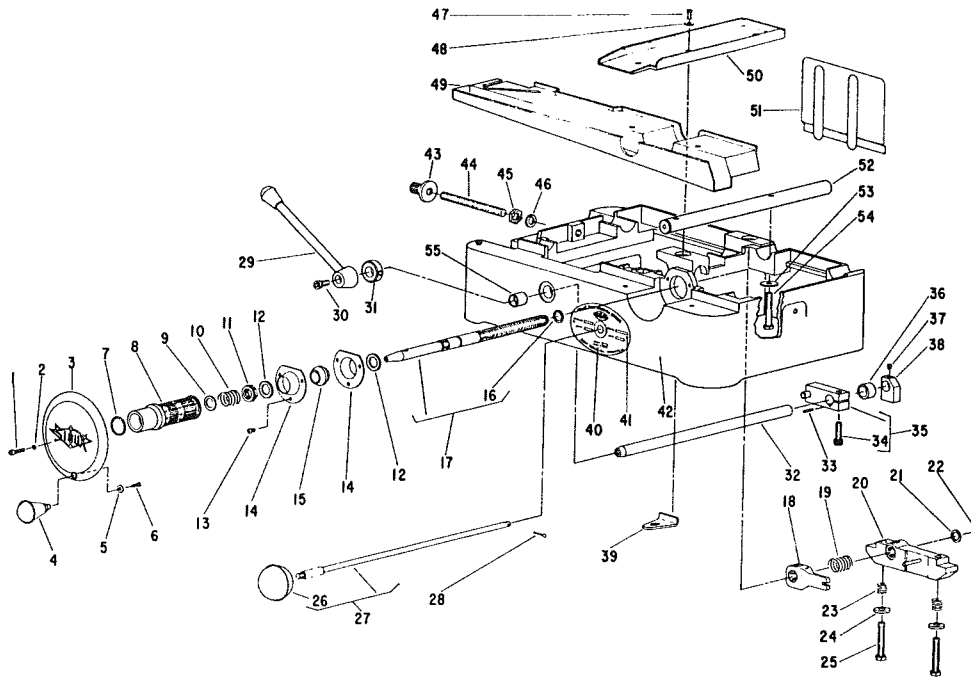


Figure	Part No.	Name
1	07114	Screw—Phil. Fil. Hd. #10-24 x 3/4"
2	09724	Washer—Lock #10
3	12222	Wheel—Hand
4	53853	Assy.—Handle
5	25196	Washer
6	06608	Screw—Soc. Hd. Cap. #8-32 x 3/8"
7	25155	Bearing—Washer
8	54440	Thimble—Micrometer
9	35375	Washer
10	21303	Spring
11	09653	Nut—Lock 5/8"-18
12	25860	Washer (2)*
13	07205	Screw—Phil. Rd. Hd. #10-24 x 3/8" (3)*
14	35348	Retainer—Feed Screw Bearing (2)*
15	10435	Bearing—Feed Screw
16	21793	Ring—Retaining
17	54399	Screw—Feed
18	11395	Dog—Auxiliary Feed Screw
19	21245	Spring—Tension
20	11396	Clamp—Cross Slide
21	25921	Washer
22	21787	Ring—Retaining
23	21316	Spring—Tension (2)*
24	34824	Washer (2)*
25	09126	Screw—Hex. Hd. Cap 3/8"-16 x 2" (2)*
26	14027	Knob
27	53537	Assy.—Switch Control Rod
28	30006	Pin—Cotter

Figure	Part No.	Name
29	53571	Assy.—Shifter Handle
30	08835	Screw—Soc. Hd. Cap 5/16"-18 x 5/8"
31	34619	Spacer & Set Screw
32	44605	Shaft—Carriage Shifter
33	34359	Key—Shifter Arm
34	08775	Screw—Soc. Hd. Cap 5/16"-18 x 1"
35	43380	Assy.—Shifter Arm
36	44644	Spacer—Switch Cam
37	08001	Screw—Set 1/4"-20 x 1/4"
38	44642	Cam—Switch
39	53588	Assy.—Base Stop (Set of 4)
40	20436	Plate—Name
41	09955	Screw—Drive #4 (2)*
42	53849	Base (Incl. Figs. 52 (4), 53 (8), 54 (8) & 55 (2)).
43	54436	Nut—Adjusting
44	34912	Stud—Carriage Stop
45	09613	Nut—Hex 7/16"-14
46	09796	Washer—Lock 7/16"
47	08120	Screw—Truss Hd. 1/4"-20 x 1/2" (6)*
48	04246	Washer (5)*
49	14153	Tray—Drain (Front)
50	14149	Tray—Drain (Top)
51	53564	Assy.—Splash Shield
52	54611	Bar—Way (4)*
53	35366	Washer 5/16" (8)*
54	08823	Screw—Soc. Hd. Cap 5/16"-18 x 2" (8)*
55	14152	Bushing (2)*

\*Order Quantity As Needed

08841 13/4"  
09770 LOCK WASHER



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Form No. A360C  
Dated 5-5-77  
Supplements Form No. A360B  
Dated 1-75

## Assy.—Coolant Pump for 680, 684 & 689

Furnish Machine and Serial Number When Ordering Parts

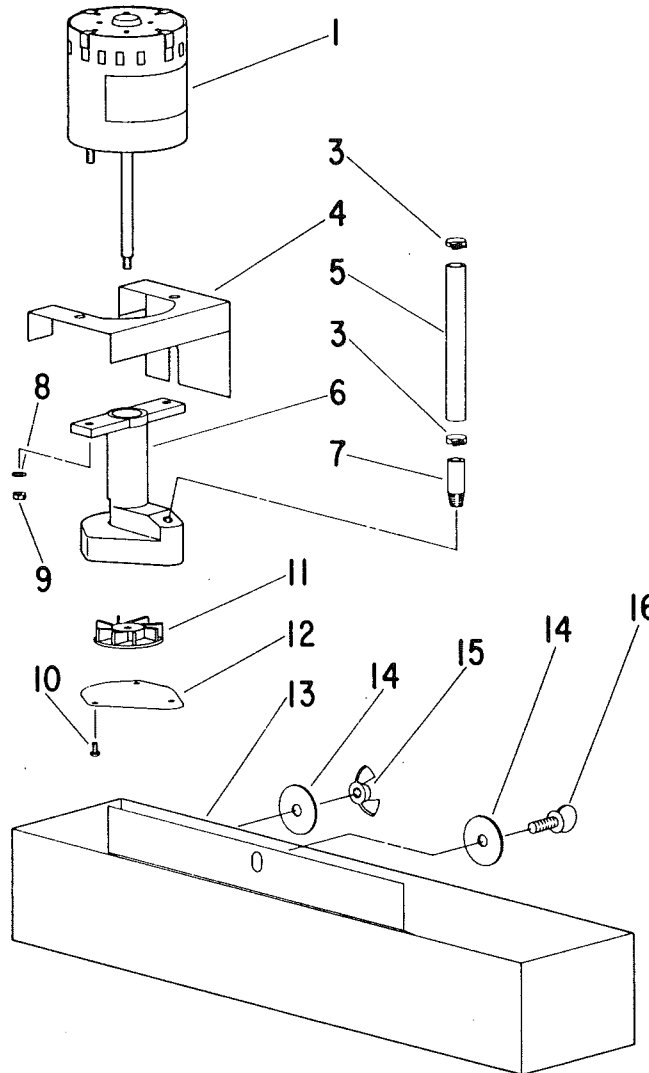


Figure	Part No.	Name
1	15124	Motor (Specify Voltage & Cycle)
3	30744	Clamp—Hose (2)*
4	35361	Mount—Pump
5	04248	Hose—Coolant
6	12385	Housing—Pump
7	30734	Tube—Adaptor
8	09712	Washer—Lock (2)*
9	09450	Nut—Steel Hex. (2)*
10	06235	Screw—Phil. Rd. Hd. (3)*
11	12386	Impeller
12	35368	Cover—Pump

Figure	Part No.	Name
13	53484	Tank—Coolant
14	25366	Washer (2)*
15	09571	Nut—Wing
16	08764	Screw—Thumb
	30698	Screen—Tank

53568 COMPLETE ASSY.  
Assy.—Coolant Pump (Incl.  
Figs. 1, 4, 6 thru 12) (Specify  
Voltage & Cycle)

\*Order Quantity As Needed

This pdf incorporates the following model numbers:

680, 684, 689, 182, 177, 649, 115V, 230V, 656G, 208-220V, 680-4AE