

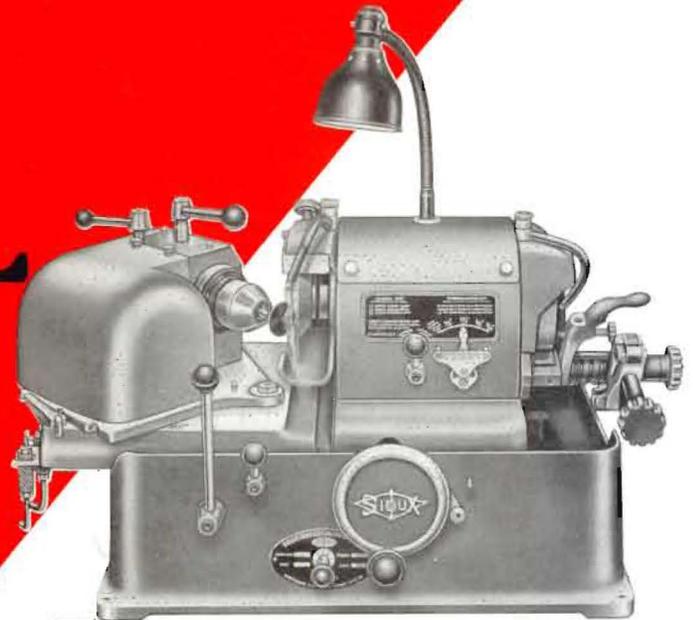


NOTE: Parts are no longer available for this tool.

The manual will continue on the next page.

INSTRUCTIONS

No. 685L



Auto- Mated

VALVE GRINDER

1. Wipe off shipping grease, clean thoroughly.
2. Lubrication: Machine must be lubricated before placing in operation. Remove grinding head cap and hood. Put a few drops of light machine oil in each of the oilers located under the grinding head cap and on the front of the chuck skirt.
Traverse Gear Box Lubrication: Traverse gear box is centrally located between the grinding head and motor. To lubricate, remove the socket head pipe plug which is located near the rear end of the cover plate—pour in about ½ ounce of light machine oil and replace pipe plug.
Lubricate as above every 90 days.
3. Coolant: Use Sioux grinding oil No. 250, capacity 3 quarts.



4. Withdraw traverse control to extreme outward position. Unpack 612 right end attachment. Do not disassemble but remove 5/16"-18 screw. Insert swivel stud into mounting bracket and the screw through the hole in the bracket located below the wheel, facing towards the front of the machine, screwing it into the swivel stud tightly.
5. Run the machine a while to warm it up and seat the belts in the pulley grooves to produce smoother operation.

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GRINDING VALVES

DRESS LEFT WHEEL

Turn motor (1) on. Set traverse adjustment indicator (13) at "Dress Left Wheel", push traverse adjustment handle (3) in to the stop and tighten lock (14). Turn dressing diamond (4) down to wheel and advance diamond one notch per pass for rough dressing or one notch per four passes for fine dressing. Turn dressing diamond back one notch. Shut motor off.

LOCATE CHUCK HEAD

Loosen chuck head lock (5). Locate chuck at desired angle with stop (12), and tighten lock. The stop may be set at 15°, 30°, and 45°. Angles of 29° and 44° are marked on plate and must be set manually.

CHUCK VALVE

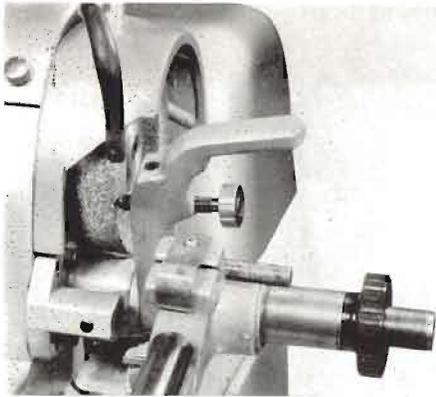
Open chuck sleeve (6) and loosen aligner locking screw (7). Insert valve so the rollers touch just above the worn part of the stem. Set aligner for proper length of valve and tighten locking screw. Close chuck sleeve down to stem. Pull chuck lever (8) and close chuck sleeve slightly, about two grooves on outside of chuck sleeve. Chuck will then grip valve firmly for grinding and release valve for removal. Press valve firmly with rotating motion into aligner and release lever. The chuck will now accept all valves of same size without additional adjustment.

GRINDING VALVES

Turn motor on, release adjustment lock (14), and pull traverse adjustment handle (3) out. The grinding wheel must be to the left before positioning valve and adjusting traverse. Loosen carriage plate stop (10) and advance valve in front of grinding wheel with lever (15).

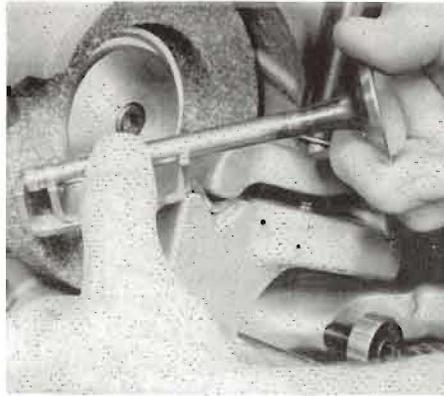
Turn feed screw (9) until wheel touches valve. Move chuck head until the right edge of grinding wheel will touch the valve. On small valves, there must be 1/16" clearance between the valve stem and the left edge of the grinding wheel. Tighten carriage plate stop (10). Adjust traverse so the left edge of the wheel will touch the valve at end of stroke. Tighten adjustment lock (14). The complete width of the grinding wheel must be used for maximum wheel life. Move the automatic grinding stop (18) counter-clock-wise for the amount of material to be removed. The amount will vary with the condition of the valve. Loosen the knurled knob (19) and set feed pawl for one notch (16) or two notches (17) per stroke. The slower feed of one notch is best for most grinding. Turn coolant on (2). Engage feed pawl (11) to grind valve. If valve has not cleaned up when feed pawl has reached the automatic stop, move stop so additional material will be removed. When grinding is complete, move the feed pawl to right, and back the grinding wheel away from the valve. Move the chuck head to the left and remove valve. Insert next valve of same size, move chuck head up to grinding wheel and engage feed pawl. The machine will automatically grind the valve.

RIGHT END ATTACHMENTS



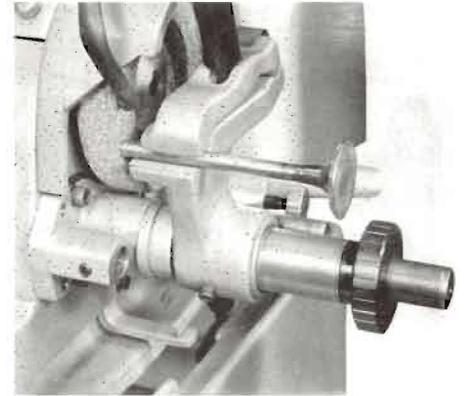
Dressing right hand wheel

Withdraw traverse control to extreme outward position. Dress face of wheel by feeding diamond slowly to produce light cuts across the face of the wheel.



Chamfer valve stem ends

Withdraw traverse control to extreme outward position. Clamp chamfering Vee attachment in valve holder as illustrated. Place valve stem in Vee with stem end against stop. Advance valve holder toward wheel far enough to produce about 1/32" chamfer while rotating valve.

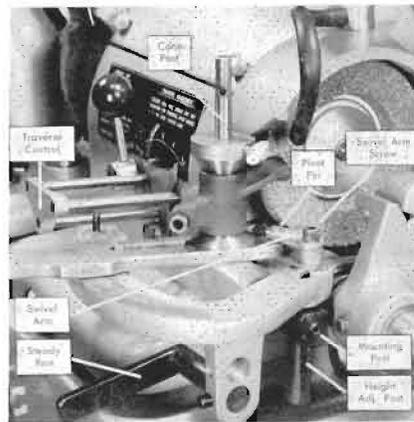


Squaring valve stem ends

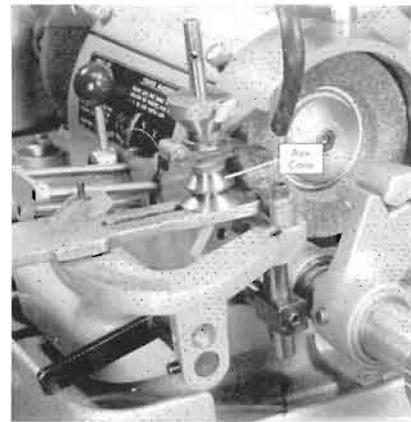
Withdraw traverse control to extreme outward position. Clamp valve stem in valve holder as illustrated. Move valve stem across face of wheel while feeding slowly until stem end is square.

Rocker Arm Attachment

Grinding rocker arms left hand offset



Grinding rocker arms right hand offset



The grinding wheel should be properly dressed before mounting the attachment on the machine. The cone adapter is adjustable for rocker arms of different length and offsets.

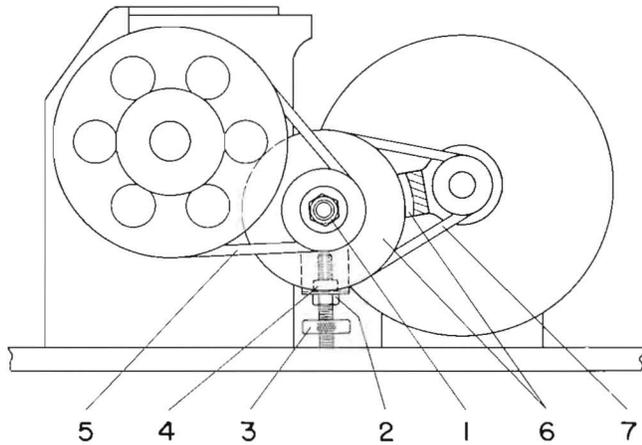
The attachment is held in position by the mounting post, the height adjustment post and the steady-rest. Adjust the rocker-arm curved surface to a point above the left edge of the pivot pin. Tighten the cone post. Mount the attachment by placing the mounting post in the base receptacle

on the right end of grinding head. Raise or lower the attachment to position the rocker arm as shown. Adjust steady-rest leg to rest on top edge of base. Set the swivel arm so edge of grinding wheel is about 1/4" inside the curved surface. Tighten swivel arm screw. Wet grind rocker arms, grind lightly, press the rocker arm lightly against the grinding wheel and swivel the attachment from side to side until desired finish is obtained.

Use auxiliary cone to raise right hand offset rocker arm into position for grinding.

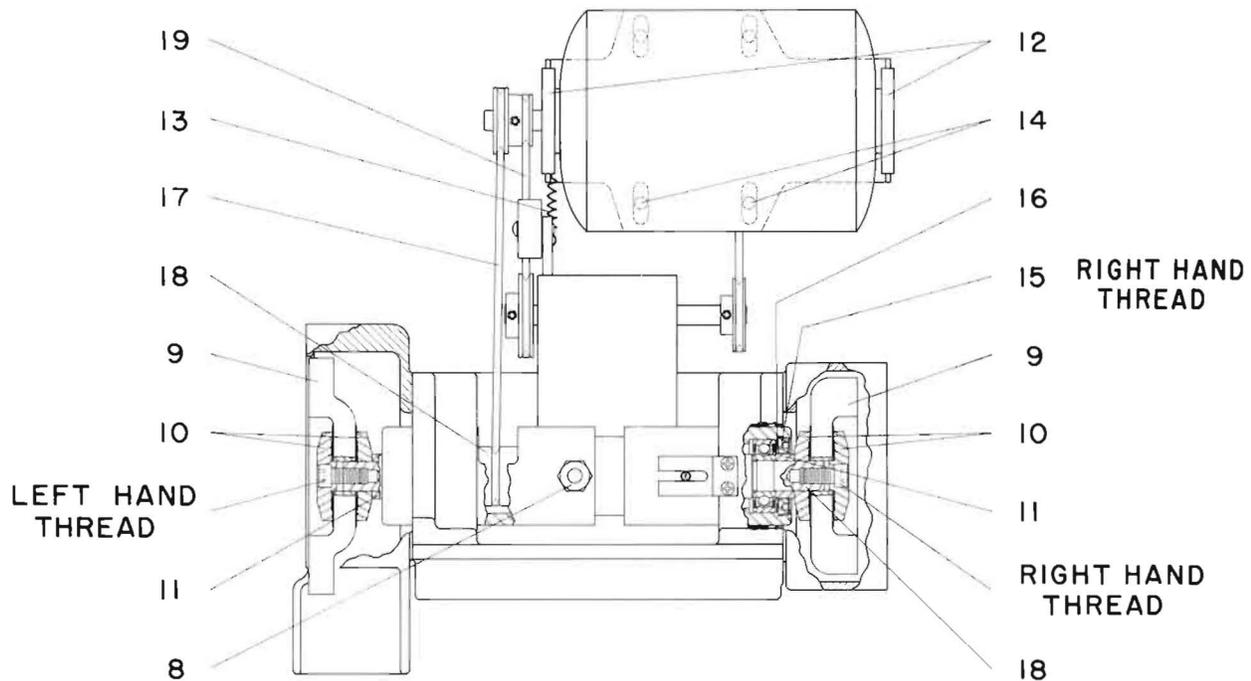
Note: The cone-shaped adapters eliminate the use of all bushings. Adapters are quickly and easily adjusted for rocker arms of any length.

REPLACEMENT OF POLY-FLEX BELTS



REPLACE CHUCK HEAD BELTS.

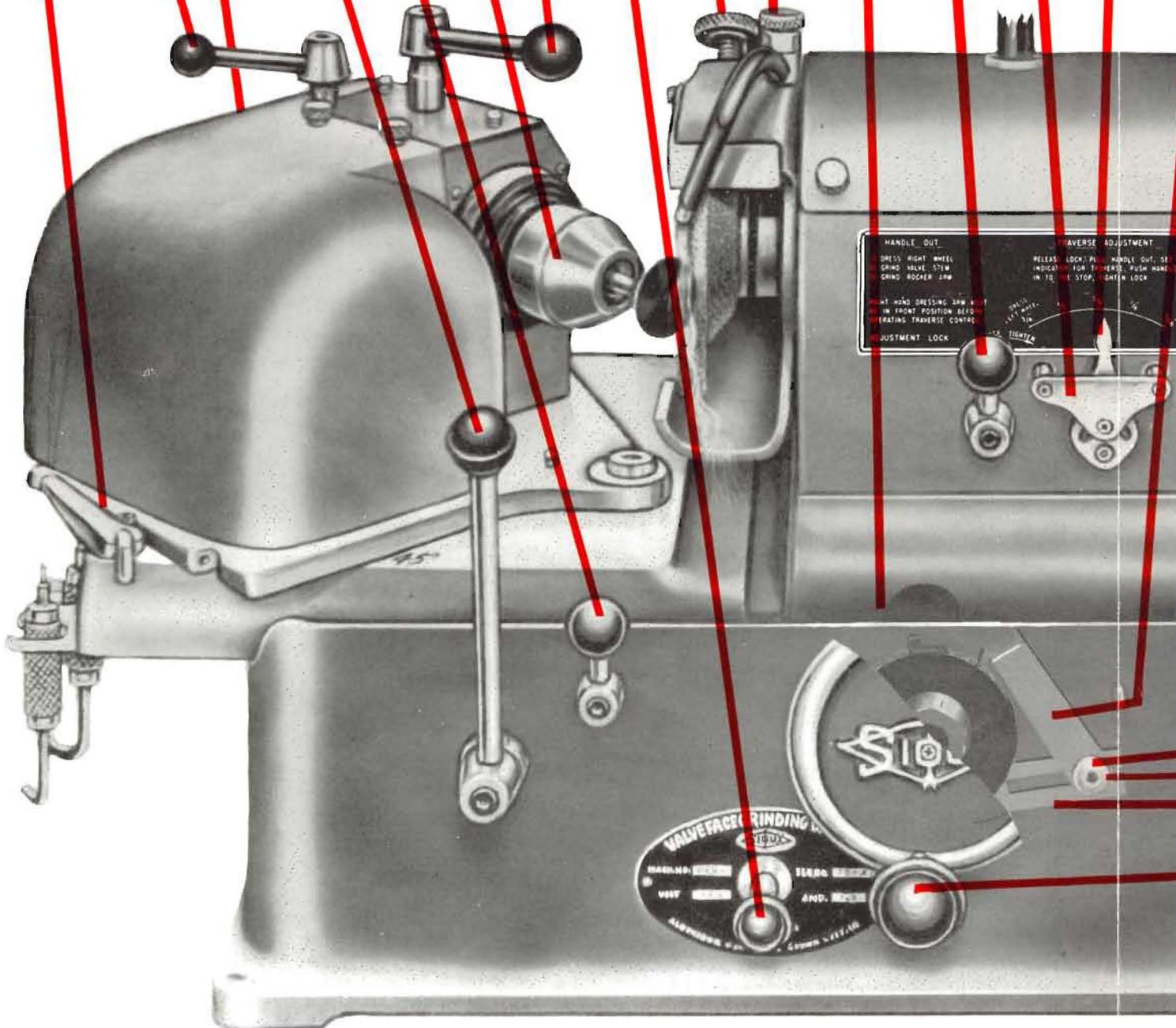
1. Remove chuck head hood.
2. Loosen hex nut (1).
3. Loosen lock nut (2) and turn knurled adjustment nut (3) to release belt tension and remove square nut (4).
4. Remove No. 14459 belt (5), swing arm and pulley (6) up, and remove No. 14458 belt (7).
5. Put on new belts, replace square nut (4) and thread adjustment screw into nut.
6. Turn knurled adjustment nut (3) to proper tension of 15 LB.
7. Tighten hex nut (1) and lock nut (2).
8. Replace hood.



REPLACE GRINDING HEAD AND GEAR BOX DRIVE BELTS

1. Remove cover plate and hood.
2. Depress spindle lock (8) and remove left and right grinding wheels (9), flanges (10) and spacers (11).
3. Remove the two motor clamps (12). Remove belt tightener spring (13).
4. **DO NOT** loosen the four motor mount bolts (14).
5. Lift motor and remove both belts from motor pulley.
6. Remove right bearing retainer (15) counter-clock-wise with spanner wrench. Remove wave washer (16).
7. Slide belt (17) out of groove and move spindle (18) far enough to the right to remove belt (17).
8. Replace No. 14462 belt (17).
9. Push spindle (18) to left and place belt (17) in groove.
10. Replace washer (16) and tighten retainer (15) on right side.
11. Replace grinding wheels and rotate by hand to check assembly.
12. Replace No. 14459 belt (19). Place both belts on motor pulley.
13. Place motor on base and tighten clamps (12). Replace belt tightener spring (13).
14. If additional adjustment is required for 15 lb. belt tension on No. 14462 belt (17), the four Motor Mount bolts (14) may be loosened and the motor base moved. Be very **cautious** to keep motor and grinding head in alignment.
15. Replace front plate and hood.

- 12
- 5
- 7
- 15
- 10
- 6
- 8
- 1
- 4
- 2
- 18
- 14
- 3
- 13



HANDLE OUT
 DRESS RIGHT WHEEL
 GRIND VALVE STEM
 GRIND ROCKER ARM

TRAVERSE ADJUSTMENT
 RELEASE LOCK: PULL HANDLE OUT, SET INDICATOR FOR TRAVERSE, PUSH HANDLE IN TO SET STOP, TIGHTEN LOCK

RIGHT HAND DRESSING 3/8" DIA. IN FRONT POSITION BEFORE OPERATING TRAVERSE CONTROL

ADJUSTMENT LOCK

STOP

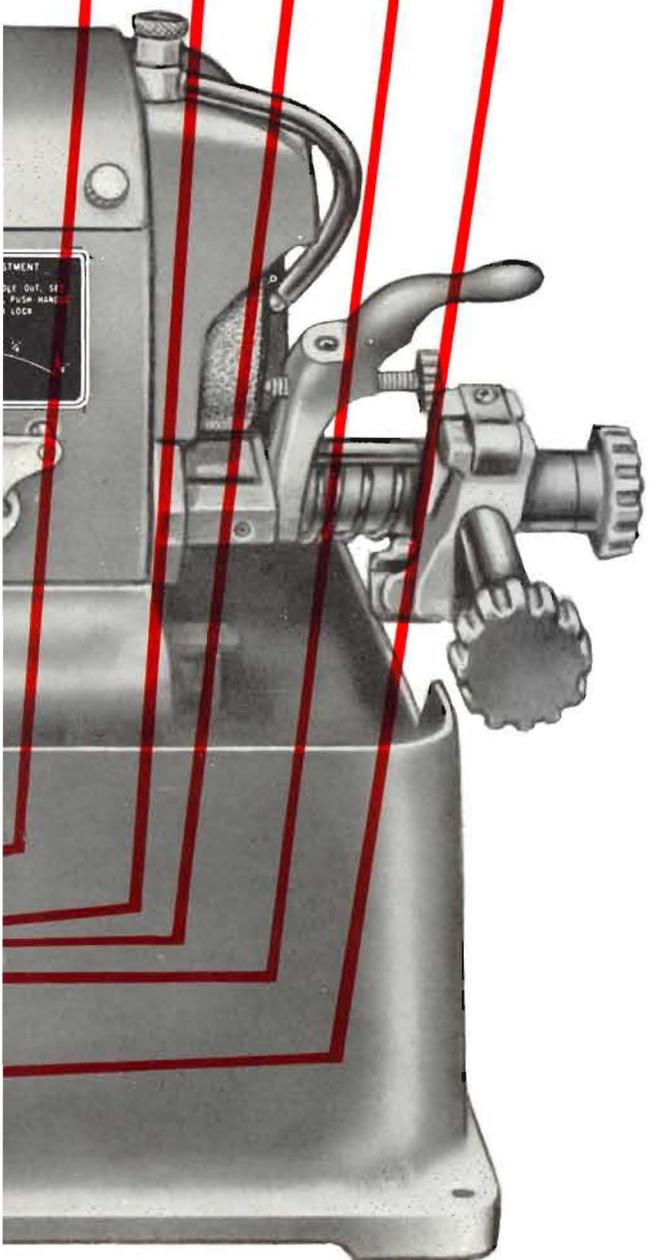
TIGHTEN

VALVEFACE GRINDING

HARDEN: 0-1000
 SOFT: 1000-2000
 VIT: 2000-3000
 AMP. RES: 3000-4000

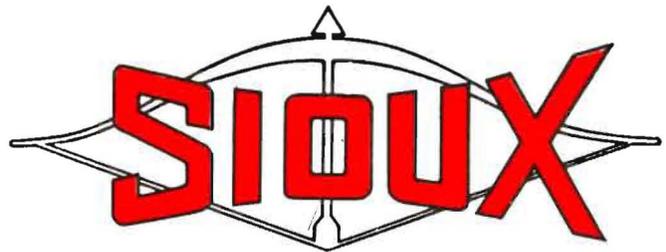
ALPHACON W.P. 42000 V.F.F. 10

- 11
- 19
- 17
- 16
- 9



Auto- *Mated-*

VALVE GRINDER



This pdf incorporates the following model numbers:

685L