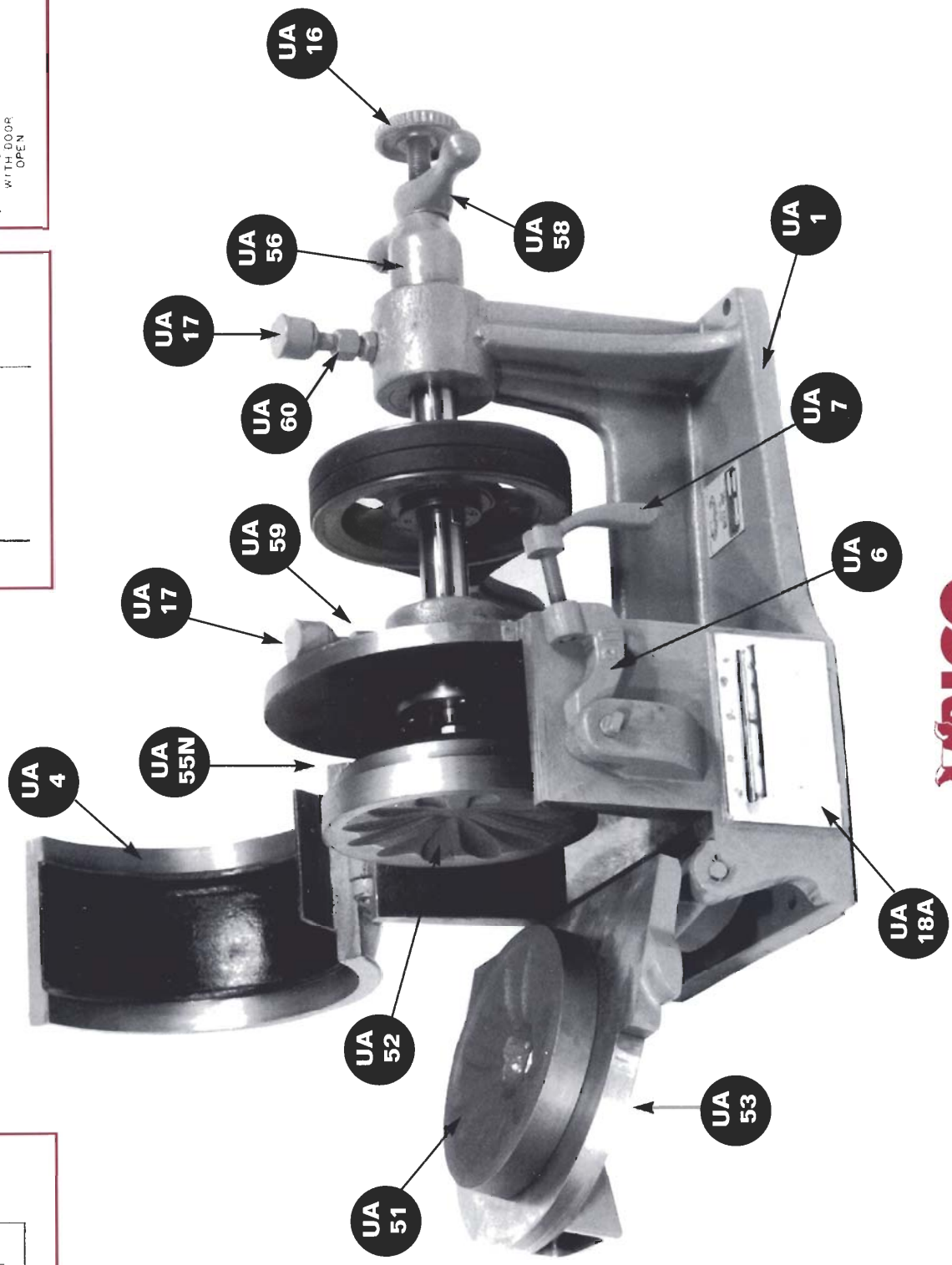
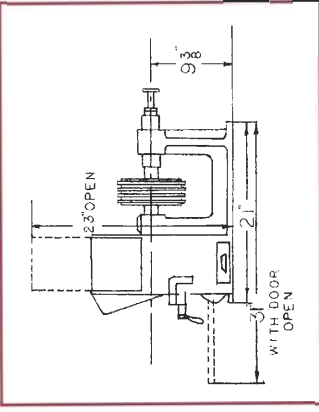
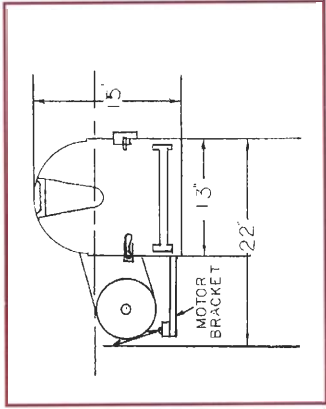
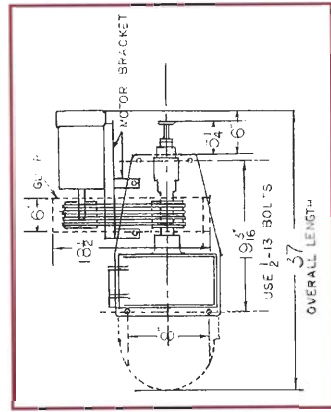


# UA PULVERIZER



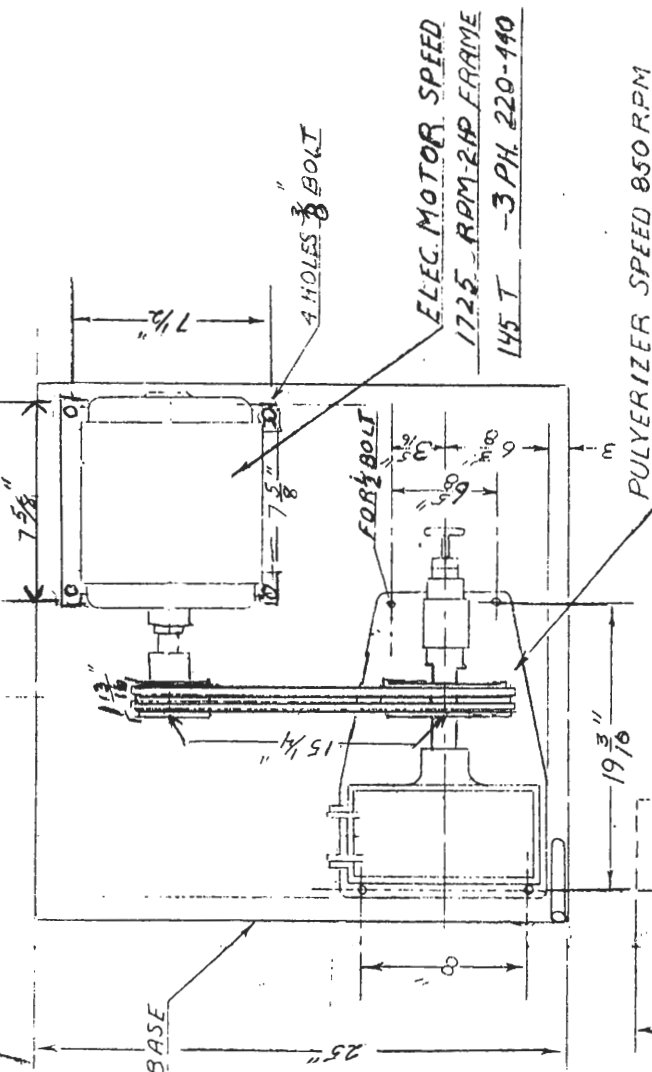
ALLOW 1/2" AROUND BASE

Manufacturers of Petroleum and Mining Laboratory Test Equipment Since 1888



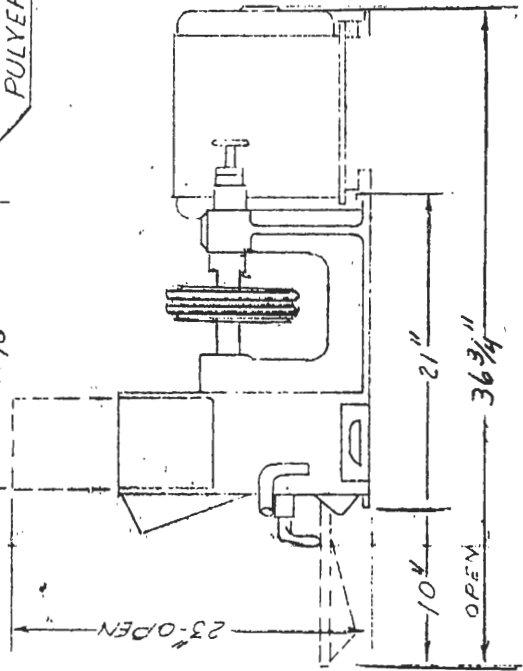
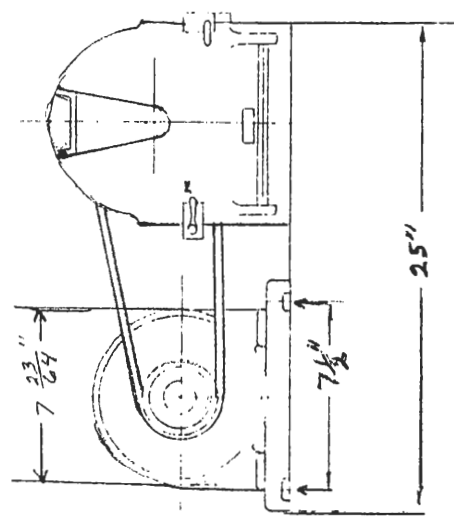
BICO, INC.  
P.O. BOX 6339  
BURBANK, CALIF. 91510, U.S.A. Cable BICOBRAUN

(213) 849-2179  
(213) 842-7179



PULVERIZER SPEED 850 R.P.M.

ELEC. MOTOR SPEED  
1725 R.P.M. 2HP FRAME  
145 T - 3 PH. 220-140



**BICO INC.**  
BURBANK CALIFORNIA  
**UA PULVERIZER**

**NOTE DO NOT TRY TO SCALE**  
**SCHEMATIC DRAWING - NOT TO SCALE**

## **OWNERS AND OPERATORS MANUAL FOR BICO UA V-BELT PULVERIZER**

A grooved revolving plate is rotated against a grooved stationary plate to produce the grinding action. The space, which separates the plates, when they are adjusted for operation, determines the fineness to which the friable material is reduced.

To obtain the service, which this Pulverizer is capable of delivering, it must have proper care. The maintenance requirements are few and simple, but they must be observed for maximum efficiency and economy. This instruction brochure contains directions for installation and care of your Pulverizer, together with a complete parts list. We suggest that you keep these instructions filed for easy reference.

### **SPECIFICATIONS**

- 1/4" Quartz to 150 - 200 Mesh at one (1) Lb./Min.
- Available with single or three-phase motor, or without motor.
- Physical Dimensions:(H) 23" x (L) 37" x (W) 22"
- Weight: 315#, Shipping Weight: 400#

## **INSTALLATION**

Unpack the Pulverizer and set it on a platform in the desired location. Insert the four (4) lag screws, (which are holding the Pulverizer to the wood base) into the four screw holes in the base of the Pulverizer and tighten them securely. A cover stop (UA-57) will be found in the ore pan. This stop prevents the cover from opening to a point where it imposes a strain on the hinges. Attach this to the side of the Pulverizer using the three cap screws provided.

Connect the relay switch to your power source in accordance with the directions enclosed with the switch. A direction plate indicating the proper wiring for your current is located just above the junction box on the motor. Connect the Pulverizer to the relay switch in accordance with these directions.

**NOTE: THE MOVABLE PLATE SHOULD ROTATE CLOCKWISE, AS OBSERVED FROM THE FRONT (FEED CHUTE) END OF THE MACHINE.**

The optional magnetic switch has internal overload protection. This shuts off the current automatically should the Pulverizer jam through improper adjustment of the plates or introduction of foreign matter that may jam the unit.

Should an overload occur, wait a few minutes to permit the relay to cool, then press the button marked RESET.

Before operation, clean the Pulverizer thoroughly, being careful to wipe all oil from the grinding plates and interior. Check the grease cups to be sure that they are filled with grease. Be sure that the bearings are properly lubricated before operating the machine.

Note: All grease cups and bearings are factory lubricated.

The v-belts, motor mounting and safety guards have been factory installed on all units supplied with motors. No adjustments should be necessary on a new machine supplied with a motor.

## **MOTOR AND V-BELT INSTALLATION**

To install the belts for v-belt drive, first adjust the plates with the adjusting screw so that contact is minimal. Mount the motor with motor pulley approximately 3/4 inch out of line and beyond shaft pulley away from the plates. Place the belts on the unit. With the motor mounted in this position, there will be reverse tension, allowing the adjusting screw to operate properly.

When the motor is started the revolving plate should move away from the stationary plate. Turning the adjusting screw will move the plates closer together. The opposite action of the adjusting screw will allow the plates to move apart. Use the locking screw to hold your adjustments. As the plates wear, you will need to adjust your setting.

**\*\*NOTE: GRINDING PLATES MUST BE PARALLEL AT ALL TIMES\*\* ALWAYS CLEAN ALL MATING SURFACES TO INSURE STABILITY OF PLATE SETTINGS.**

## **OPERATION**

Turn on the power and start the Pulverizer. With machine running, adjust the grinding plates by means of the adjusting screw at the end of the shaft until the desired opening is achieved. A little practice will enable you to determine this by the sound when you are grinding to a fine mesh. Tighten the lock screw to secure permanent adjustment.

The machine is fed through a spout in the door. It will take material 1/4 inch and smaller and reduce to the desired mesh in a single grinding. The sample drops into the pan, which is placed so that all the material must fall into it.

## **CLEANING**

The Pulverizer opens in such a way that the operator can always see that all material is brushed into the pan. All parts are accessible for rapid and thorough cleaning with a brush. Opening the Pulverizer for cleaning does not alter the adjustment of the grinding plates.

Make sure to clean between the door and the frame as dirt will build up in this area and cause the plates to no longer be parallel with each other.

## **LUBRICATION**

Keep the grease cups properly filled at all times with high-temperature grease. Regular daily lubrication is essential to protect the bearings. If the Pulverizer is in constant use, turn grease cups down 1/8 turn at least twice daily.

## **BEARINGS**

The front needle-type roller bearing (UA-55N) and rear bearing babbitted bushing (UA-56) are removable and replaceable. When installing a new UA-55N do not over-tighten; a set screw (UA-59) will hold the front bearing in place. Hand tighten the UA-59 only, then tighten the lock nut to secure.

## **GRINDING PLATES**

Bico grinding plates are available in a variety of materials and hardness to provide you with the best performance for your type of sample.

All plates (disc) are 8" in diameter and bear the Bico part number on the back side. A set of two (2) plates are required when running the machine - one stationary plate (with hole) located on the door and one revolving plate located on the flange. New machines are factory installed with the standard Iron Alloy Plates (UA-51/52).

Proper installation and maintenance is very important to assure long wear and fine grind. Perfect plate alignment is essential for optimum machine performance. The UA-1000 Plate aligner is available to assist you with this procedure. Following is a list of the various plate materials available.

**BICO, INC.**  
**8" GRINDING PLATES**

**(Listed In Sets)**

**\*\*\* IRON PLATES \*\*\***

UA-51/52	Standard Iron Alloy Plates
UA-94/95	Special Wear Resistant Iron Alloy Plates
UA-85/86	Hardened Iron Alloy Plates
UA-97/98	Ductile Iron Grinding Plates

**\*\*\* STEEL PLATES \*\*\***

LD-03/04	Lead Dog Semi-Steel Grinding Plates
UA-81/82	Low Phosphorus Carbon Steel Plates
UA-2000S/R	Chrome-Alloy Steel Plates

**\*\*\* MANGANESE PLATES\*\*\***

UA-83/84	Manganese Steel Plates
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**\*\*\* CONTAMINATION CONTROL PLATES \*\*\***

UA-92XX/93XX	Alumina Ceramic Plates
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**\*\*\* PLATES FOR COAL GRINDING\*\*\***

UA-87/88	Iron Alloy-Stationary
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**\*\*\* TOOLS TO INSTALL PLATES \*\*\***

UA-1000 (C)	Plate Aligner (C = for Ceramic Plates)
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**BICO INC. UA PULVERIZER SPARE PARTS  
-PLEASE GIVE SERIAL NUMBER WHEN ORDERING PARTS-**

<b>CATALOG #</b>	<b>DESCRIPTION</b>	<b>LBS/KG</b>
UA-1	FRAME W/DOOR AND COVER	179/81
UA-3	HINGE PIN FOR DOOR	3/.1
UA-4	COVER - DRILLED	18/8
UA-5	HINGE PIN FOR COVER	1/.1
UA-6	DROP CLUTCH	1/.4
UA-7	HAND SCREW FOR DROP CLUTCH	1/.4
UA-8	SCREW FOR CLUTCH	1/.4
UA-9	EYE BOLT	.1/.1
UA-9A	HAND NUT FOR EYE BOLT	1/.4
UA-10	PIN FOR EYE BOLT	1/.1
UA-12	CAP SCREW FOR STATIONARY PLATE	1/.4
UA-16	HAND ADJUSTING SCREW WITH KNOB	1/.4
UA-17	GREASE CUP	1/.4
UA-18A	ORE PAN	1/.4
UA-20	COLLAR WITH SET SCREW	1/.4
UA-21	HARDENED STEEL THRUST WASHER	1/.1
UA-50A	FLANGE WITH GROUND AND HARDENED SHAFT (FOR S/N LATER THAN 32260 FOR FLAT BELT DRIVE ONLY).	15/7
UA-50	FLANGE WITH "SOFT" SHAFT FOR USE WITH BABBITTED BUSHINGS. (FOR S/N PRIOR TO 32260)	14/6



<b>CATALOG #</b>	<b>DESCRIPTION</b>	<b>LBS/KG</b>
UA-53	DOOR (S/N PRIOR TO 55234 MUST BE DRILLED ON SITE)	24/11
UA-54	CAP SCREW FOR REVOLVING PLATE	1/.4
UA-55	BABBITTED BUSHING F/ FRONT BEARING (FOR USE WITH UA-50 AND UA-71)	3/1
UA-55N	NEEDLE BEARING (FOR USE WITH UA-50A AND UA-71A)	3/1
UA-56	REAR BABBITTED BUSHING WITH ADJUSTING SCREW THREAD	5/2
UA-57	MALLEABLE BRACKET FOR COVER	2/1
UA-58	LOCK LEVER FOR ADJUSTING SCREW	2/1
UA-59	SET SCREW FOR FRONT NEEDLE BEARING (GREASE ADAPTOR)	1/.4
UA-60	SET SCREW FOR REAR BEARING (GREASE ADAPTOR)	1/.4
UA-62	CAP SCREW FOR UA-57 COVER BRACKET	1/.4
UA-63	WASHER FOR CAP SCREW (FOR STAT. PLATE)	1/.4
UA-64	LAG SCREW	1/.4
UA-67	SHOCK ABSORBING SPRING FOR DOOR	1/.4
UA-68	V-BELTS, SET OF 4 (FOR S/N PRIOR TO 61076 AND LATER THEN 67672)	1/.4
V-BELTS	AVAILABLE FOR ALL UNITS - SERIAL NUMBER REQUIRED	
UA-69	4-GROOVE V-PULLEY FOR MOTOR (SPECIFY RPM, KEYWAY, SHAFT DIAM. FOR S/N PRIOR TO 61076 AND AFTER 67672)	8/4
UA-69-1	2-GROOVE V-PULLEY FOR MOTOR (SPECIFY RPM, KEYWAY AND SHAFT DIAMETER FOR S/N BETWEEN 61076 AND 67672)	5/2

CATALOG #	DESCRIPTION	LBS/KG
UA-70	4-GROOVE PULLEY (FOR S/N PRIOR TO 61076 AND AFTER 67672 ONLY)	17/8
UA-70-1	2 GROOVE PULLEY (FOR S/N 61076-67672)	17/8
UA-71A	FLANGE AND GROUND AND HARDENED SHAFT WITH KEYWAY, FOR V-BELT DRIVE (S/N LATER THAN 32260 ONLY)	14/6
UA-71	FLANGE WITH SOFT SHAFT AND KEYWAY FOR V-BELT DRIVE (S/N PRIOR TO 32260 ONLY)	14/6
UA-71X	KEY ONLY FOR UA-71	1/4
UA-72	FELT WASHER FOR UA-55 (SAME AS UA-74)	1/4
UA-72A	BRASS WASHER FOR UA-55	1/4
UA-72C	BRASS WASHER FOR UA-55N	1/4
UA-73	FELT WASHER FOR UA-55N	1/4
UA-73A	FIBER WASHER FOR NEEDLE BEARING	1/4
UA-74	GREY FELT WASHER FOR NEEDLE BEARING	1/4
UA-90	SPECIAL NEEDLE BEARING - DOUBLE ROLL (SET OF 2)	1/4
UA-91	GREASE SEAL FOR NEEDLE BEARING	1/4
UA-100	WOODEN BENCH TOP	123/56
UA-101	BELT GUARD	45/20
UA-102	BELT GUARD - COMPACT STYLE	45/20
UA-1000(C)	PLATE ALIGNER (C = for Ceramic Plates)	1/4