

Bico, Inc.
3116 Valhalla Drive, Burbank, CA 91505
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BICO INCORPORATED VIBRATORY PULVERIZER

WARNING!!!!!! IT IS IMPORTANT THAT YOU REMOVE RED PLATES BEFORE OPERATING THIS MACHINE

THE VIBRATORY BODY OF THE MACHINE HAS BEEN SECURED RIGIDLY UNDERNEATH TO PREVENT DAMAGE DURING SHIPPING USING FOUR RED METAL PLATES LOCATED BEHIND THE SERVICE DOOR ON THE FRONT OF THE UNIT.

THESE PLATES ARE ACCESSIBLE THROUGH THE SERVICE DOOR AND ARE SECURED WITH TWO 3/8" AND TWO 1/2" CAP SCREWS ON EACH PLATE.

- BE SURE TO REMOVE THESE PLATES BEFORE OPERATING THIS MACHINE
- FAILURE TO REMOVE THEM WILL RESULT IN SEVERE DAMAGE TO THE MACHINE

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INSTRUCTIONS FOR BICO VIBRATORY PULVERIZER

THIS MANUAL INCLUDES THE FOLLOWING:

1. DESCRIPTION
2. INSTALLATION
3. ELECTRICAL CONNECTIONS
4. OPERATIONS INSTRUCTIONS
5. SPARE PARTS LIST

THIS MANUAL IS THE ONLY INSTRUCTION NECESSARY FOR KEEPING AND MAINTAINING THE BICO VIBRATORY PULVERIZER. PLEASE READ IT CAREFULLY BEFORE OPERATING THIS MACHINE. PLEASE FEEL FREE TO CONTACT OUR CUSTOMER SERVICE DEPARTMENT SHOULD YOU REQUIRE INFORMATION OTHER THAN THAT WHICH HAS BEEN PROVIDED IN THIS MANUAL.

1. DESCRIPTION

THE VIBRATORY PULVERIZER CONSISTS OF THE FOLLOWING:

1. SOUND DAMPENING ENCLOSURE WITH HINGED COVER
2. VIBRATORY BODY WITH CLAMPING SYSTEM
3. BOWL, LID AND SET OF GRINDING COMPONENTS
4. DIGITAL TIMER AND STARTING SWITCH

THE GRINDING BOWL IS MOUNTED TO THE VIBRATORY BODY WITH THE CLAMPING DEVICE AND THE HINGED COVER SHOULD BE CLOSED DURING OPERATION.

THE STARTING SWITCH CONSISTS OF A PUSH-ON BUTTON, A PUSH-OFF BUTTON, AND A DIGITAL TIMER.

THE PULVERIZER SHOULD NEVER BE STARTED OR OPERATED WITHOUT THE GRINDING BOWL PROPERLY SECURED ONTO THE VIBRATORY BODY, OR WITHOUT BEING INSTALLED IN ACCORDANCE WITH THE INSTRUCTIONS.

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2. INSTALLATION

THE PULVERIZER MUST BE INSTALLED ON A FLAT SURFACE. SINCE THE PULVERIZER IS SHIPPED WITHOUT BALLAST IN THE BASE, NO LESS THAN 500 POUNDS OF BALLAST MUST BE ADDED IN THE FORM OF LEAD SLABS, GRINDING BALLS, SCRAP STEEL, ROCKS OR SIMILAR MATERIAL. SOME USERS PREFER TO BOLT THE PULVERIZER ONTO A CONCRETE FLOOR. DO NOT OPERATE THE PULVERIZER WITHOUT BALLAST IN THE BASE, OR WITHOUT BEING ANCHORED TO THE FLOOR TO AVOID SEVERE ROCKING OF THE PULVERIZER, ESPECIALLY DURING START UP AND SLOWING DOWN OF THE ELECTRIC MOTOR.

THE GRINDING BOWL AND IT'S SEAT ON THE PULVERIZER ARE PRECISION ENGINEERED. DURING TRANSPORTATION THE COMBINED EFFECT OF THE PRESSURE OF THE CLAMPING SYSTEM, THE PRESENCE OF THE NEOPRENE GASKET AND CHANGES IN TEMPERATURE MAY CAUSE THE GRINDING BOWL TO STICK TO IT'S SEAT. USE A BAR OR SIMILAR TOOL AS A WEDGE BETWEEN THE BOWL AND THE VIBRATORY BODY TO REMOVE IT.

3. ELECTRICAL CONNECTIONS

THE 3 PHASE ELECTRICAL MOTOR HAS BEEN PRE-WIRED PER CUSTOMER'S REQUEST. HAVE A QUALIFIED ELECTRICIAN CHECK THE POWER AVAILABLE ON THE SITE TO ENSURE THE PULVERIZER IS CONNECTED TO THE RIGHT VOLTAGE. SHOULD IT BECOME NECESSARY TO CHANGE THE VOLTAGE, A WIRING DIAGRAM HAS BEEN INCLUDED IN THESE INSTRUCTIONS FOR HIGH VOLTAGE (440 VOLT), AND FOR LOW VOLTAGE (220 VOLT). THE CABINET HAS BEEN DESIGNED WITH REMOVABLE KNOCK-OUT PLUGS ON EACH SIDE FOR WIRING PURPOSES.

4. OPERATING INSTRUCTIONS

DO NOT OPERATE THE PULVERIZER WITHOUT THE GRINDING BOWL SECURELY LOCKED INTO IT'S SEAT ON THE PULVERIZER

THE 250 ML. CAPACITY GRINDING BOWL CONTAINS THREE GRINDING COMPONENTS: THE SOIL CENTER PUCK, AND THE TWO CONCENTRIC RINGS. THE MATERIAL TO BE PULVERIZED IS POURED BETWEEN THE GRINDING COMPONENTS, ALL PARTICLES ON TOP OF THE COMPONENTS ARE BRUSHED BETWEEN THE RINGS AND THEN THE LID IS CLOSED. ONCE THE GRINDING BOWL IS SECURELY ON IT'S SEAT, THE CLAMP IS LOCKED INTO POSITION IN THE FOLLOWING WAY:

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BRING DOWN THE HANDLE ON THE LEFT, THEN THE HANDLE ON THE RIGHT. WHILE BRINGING DOWN THE HANDLE ON THE RIGHT, PULL THE RING TO ENGAGE THE PIN TO LOCK THE HANDLES. BE CERTAIN THE PIN IS FULLY ENGAGED BEFORE CLOSING THE CABINET TOP AND STARTING THE MACHINE.

THE CYCLE IS STARTED BY PUSHING THE START BUTTON, AND IS STOPPED BY THE STOP BUTTON. IF YOUR MACHINE IS EQUIPPED WITH A DIGITAL TIMER, THE REQUIRED GRINDING TIME SHOULD BE SET PRIOR TO PUSHING THE START BUTTON-THEN THE TIMER WILL STOP THE MACHINE AFTER THE CLOCK HAS REACHED THE PROGRAMMED TIME.

TO RELEASE THE CLAMPING SYSTEM SIMPLY PULL THE RING TO DISENGAGE THE PIN. BE SURE TO APPLY PRESSURE TO THE HANDLE AS IT WILL SPRING UP. LIFT THE HANDLES AND REMOVE THE BOWL. IF THE LID IS STUCK TO THE BOWL, A HAMMER OR SIMILAR TOOL SHOULD BE USED TO TAP THE PROTRUDING RIM GENTLY. IT MAY BE NECESSARY TO WEAR GLOVES AS THE COMPONENTS DO GET WARM DURING OPERATION. BRUSH THE PARTICLES FROM THE TOP OF THE GRINDING COMPONENTS AND REMOVE ONE COMPONENTS AFTER ANOTHER WHILE CLEANING, STARTING WITH THE CENTER PUCK. THEN REMOVE THE CONTENTS OF THE BOWL.

GRINDING TIME DEPENDS ON A NUMBER OF FACTORS:

1. MASS OF MATERIAL
2. HARDNESS
3. PARTICLE SIZE
4. LUBRICATING PROPERTIES

SINCE THE CAPACITY OF THE GRINDING BOWL IS RATED IN ML. RATHER THAN IN GRAMS, THE MASS OF THE SAMPLE WILL DEPEND ON ITS BULK DENSITY.

FOR SOFT MATERIALS SUCH AS COAL, DOLOMITE, ETC. THE MAXIMUM SIZE OF THE FEED CAN BE AS LARGE AS 15MM. FOR HARD MATERIALS SUCH AS PRE-REDUCED IRON ORE, FERRO ALLOYS, ETC. THE TOP PARTICLE SIZE SHOULD NOT EXCEED 5MM.

SOME MATERIALS SUCH AS TALCUM TEND TO LUBRICATE THE GRINDING COMPONENTS. OTHERS MAY FORM CONGLOMERATES OF PARTICLES ON THE PERIPHERY OF THE BOWL (CAKING) IN A SHORT TIME. PULVERIZE SUCH MATERIALS IN INCREMENTS OF .1 MIN. AND CHECK THE FINENESS AFTER EACH INTERVAL. IF THE REQUIRED FINENESS CANNOT BE OBTAINED WITHOUT CAKING, ADD 2-5 ML. OF ETHANOL FREON SOLVENT AND PULVERIZE FOR THE TIME PERIOD THAT CAUSED CAKING IN DRY CONDITIONS PLUS .5 MIN. SAMPLES CONTAINING EXCESSIVE MOISTURE MAY ALSO CAKE AND SHOULD BE DRIED BEFORE GRINDING,

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BICO INC. VIBRATORY PULVERIZER SPARE PARTS

CATALOG #	DESCRIPTION	LBS/KG
VP-21	Large Ring Only, 250 ml	7/3
VP-22	Small Ring Only, 250 ml	5/2
VP-23	Puck Only, 250 ml	5/2
VP-45	250 ml. Grinding Components Only Includes: Large Ring, Small Ring, and Puck	35/16
VP-50	250 ml. Bowl and Lid Only	18/8
VP-24(A)	O-Ring for Lid (A = for 100 ml. bowl)	1/4
VP-16	Rubber Bowl Seat	1/.4
VP-9R	Release Pin Assembly - Includes: Release Pin, Ring, Spring and Washer	2/1
VP-9	Release Pin Only	1/4
VP-36	Spring Only, for release pin assembly	1/4
VP-10	Washer Only for release pin assembly	1/4
VP-35	Handle Grip	1/4
VP-34	Knob for Handle	1/4
VP-11R	Right Hand Clamping Block with Handle	4/2
VP-5R	Left Hand Clamping Block Assembly Includes: Block, Pin & VP-9R	2/1
VP-18	Spring (6 Required for operation)	1/.4
VP-8R	Strap Clamp Assembly Includes Strap Bar & VP-12	2/1
VP-12	"Hold Down" for Strap Clamp	2/1

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CATALOG #	DESCRIPTION	LBS/KG
VP-17	Motor	60/27
VP-37	Automatic Timer	10/5
VP-45/50TC	100 gm Tungsten Carbide Grinding Set Includes 1 bowl, 1 lid, 1 ring, 1 puck **Requires VP-11A	30/14
VP-45/50CA	100 gm Chrome Allow Grinding Set Includes 1 bowl, 1 lid, 1 ring, 1 puck **Requires VP-11A	30/14
VP-11A	100 Gram Bowl Adaptor	2/1