



**BURR KING MFG. CO., INC**

1220 Tamara Lane

Warsaw, MO 65355

[www.burrrking.com](http://www.burrrking.com)

(660)438-8998 • 800-621-2748

Fax (660)438-8991



# VIBRAKING MODEL 25, 45, AND 85 INSTRUCTION MANUAL



Model 85103 Shown

Model 45100 Shown

Model 25100 Shown

## BURR KING VIBRAKING 25, 45, AND 85 VIBRATORY CHAMBERS

**MADE IN U.S.A.**



- \* GRINDERS
- \* BUFFERS
- \* VIBRATORY
- \* DISC GRINDERS



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June, 2007

Burr King Manufacturing Company, Inc. warrants the below product to be free in material and workmanship. The period of warranty is 1 year (90 days for vibratory bowls of 20 quart and lesser volume) from the date of purchase. No warranty is provided for products that have been modified, abused, handled carelessly, where repairs have been made or attempted by others, or for freight damage. No warranty is provided for three phase electric motors, controllers, etc. when the motors, controllers are not protected by magnetic starters that were supplied and installed by Burr King Manufacturing Company, Inc. No other warranty, written or verbal is authorized by Burr King Manufacturing Company, Inc.

During the warranty period Burr King Manufacturing Company, Inc (or its authorized suppliers or agents) will replace or repair the below product without charge if the product is found by Burr King Manufacturing Company, Inc. to be defective. To receive warranty services you must contact Burr King Manufacturing Company, Inc. and receive authorization for warranty service. Unless otherwise authorized by Burr King Manufacturing Company, Inc. Products (see \* below) must be returned to the factory to receive warranty service.

\*Motors, speed controllers, and certain other accessories are warranted by their respective manufactures. To receive warranty service on these items you must contact a brand label service center that supports the product in need of service. Burr King Manufacturing Company, Inc. will assist you in locating a service center.

For the first thirty days after purchase, and when Burr King Manufacturing Company, Inc. authorizes warranty service, we will pay normal and necessary surface freight charges both ways (except for items in \*). After thirty days the customer is responsible for all freight charges. Where possible Burr King Manufacturing Company, Inc. may elect to make on site service and/or repairs necessary to return the product to serviceable condition.

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To assure prompt warranty service it is necessary that you complete and return the below warranty information to Burr King Manufacturing Company, Inc. please **FAX** or **MAIL** at your convenience.

Product model: \_\_\_\_\_ Serial number: \_\_\_\_\_  
Date Purchased: \_\_\_\_\_ Purchased from: \_\_\_\_\_  
Address: \_\_\_\_\_ City: \_\_\_\_\_ State/Prov: \_\_\_\_\_ Postal code \_\_\_\_\_

Your company name: \_\_\_\_\_  
Address: \_\_\_\_\_ City: \_\_\_\_\_ State/Prov: \_\_\_\_\_ Postal code \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Email: \_\_\_\_\_  
Your name: \_\_\_\_\_ Title: \_\_\_\_\_

How did you learn about Burr King products?

Trade show \_\_\_ Web \_\_\_ Industrial Distributor \_\_\_ Advertisement \_\_\_ Other \_\_\_\_\_ Which one: \_\_\_\_\_

What is the intended use of this product? \_\_\_\_\_

Please indicate the general work types performed at your company, check all that apply:

Fabrication \_\_\_ Machining \_\_\_ Casting \_\_\_ Molding \_\_\_ Welding \_\_\_ Finishing \_\_\_ Assembly \_\_\_ Research \_\_\_ Other \_\_\_

Please indicate the primary product focus of your company; check all that apply.

Aircraft/Missile \_\_\_ Automotive \_\_\_ Contract machine \_\_\_ Contract Fabrication \_\_\_ Agricultural \_\_\_ Maintenance \_\_\_ Recreational \_\_\_

Job shop \_\_\_ Foundry \_\_\_ Construction \_\_\_ Arts \_\_\_ Orthopedic \_\_\_ Dental \_\_\_ Medical \_\_\_ Other \_\_\_\_\_

Please tell us what we can do to improve our products:

\_\_\_\_\_  
\_\_\_\_\_

May we contact you? Yes \_\_\_ No \_\_\_

**Thank you for purchasing Burr King products!**



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August 29, 2007

**LETTER OF AUTHENTICITY**

This letter is to certify that all Burr King Belt grinders, Disc grinders, Polishing machines Vibra King Chambers and Bowls are manufactured and assembled in the United States of America.

(Tariff number 847990 criterion A)

Don Mac Carthy  
President

See our catalog at [www.burrking.com](http://www.burrking.com)

contact us at [info@burrking.com](mailto:info@burrking.com)



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## **VibraKING model 25, 45, and 85 operating instructions**

December 2009

### **General description**

Models 25, 45, and 85 vibratory chambers use commonly available media to de-burr, polish, de-scale, or otherwise surface condition parts made from various materials. The media and parts achieve the proper processing motion by being subjected to thrust vectors that apply working force to the combination. A rotating mass that is critically located at a prescribed angle in relation to the tub center creates this vector force field. The vector field rotates around the tub axis such that at any point in the wave, the media and parts have properly aligned force vectors applied that sustain the vibratory wave. If plotted, this field of vectors is coaxial to the tub centerline giving rise to the term "Coaxial Drive". "Coaxial Drive" identifies Burr King Manufacturing's proprietary technology (patents pending).

The M25, M45, and M85 vibratory chambers are inherently well isolated from their environment because of Coaxial Drive technology. The effect of this isolation is an approximate 3 decibel sound reduction from units of similar size. One dB represents a 10 times reduction in sound energy and is the smallest change in sound that the human ear can detect. The decibel scale is logarithmic, thus -1 dB reduction represents a time's 10 reduction in energy, a -2 dB is a one hundred fold reduction, and -3 dB a one thousand fold reduction. Additionally, better than 85% of the applied mechanical energy applied to the vibratory process leaving little extraneous vibration to be absorbed by the floor on which the machine is mounted. The excellent use of the available energy also allows the vibratory chambers to operate very well with modestly sized electric motors.

The chambers have two descriptive volumes, "total volume" and "working volume". The total volume is that volume of liquid that would fill the tub to its brim. Working volume is approximately 80% of the total volume. Because there are many different part geometry's, weights, and materials, meaningful ways to specify working capacity are "working volume" and "part load". Working volume includes the volumes occupied by the media and the part's load. Maximum part load is that part load weight (irrespective of part volume) for which the vibratory chamber can sustain working action. Factors such as part geometry can reduce or even increase the maximum permissible part load. The final measure of optimum working capacity then becomes the combined part and media load for which the desired results occur within an acceptable time frame.

### **Receipt and initial machine set-up**

1. Insure that you have received all of the items that you ordered. Compare the packing slip with your purchase order, and of course with the physical items received.
2. Verify that there is no obvious shipping damage. If shipping damage is discovered notify the freight carrier of your intention to file a freight damage claim. They will assist you.
3. Verify that the AC power that is identified on the machine as received matches the AC power that you intend to operate the machine with. Do not modify the machine's wiring without first contacting your distributor or Burr King Manufacturing.
4. Do not modify or defeat any electrical wiring safety feature. For example, do not remove the grounding pin on the AC electrical plug.
5. Verify that you have received a warranty card, parts lists, catalog, and manual.
6. Complete the warranty card and return it to Burr King Manufacturing via FAX or mail.
7. Verify that the safety guards for the machine are in place and functional. See the parts list and schematic for the below indicated part numbers.
8. Prior to operating the machine read the manual carefully. Insure that all persons who will operate the machine or who will work in the vicinity of the machine read, understand, and comply with these safety instructions.
9. Insure that your AC electrical power source is properly sized and properly fused for the machine you purchased. Consult with a competent electrician to determine the proper specifications for your electrical service prior to connecting your machine.

### Initial machine setup and operation

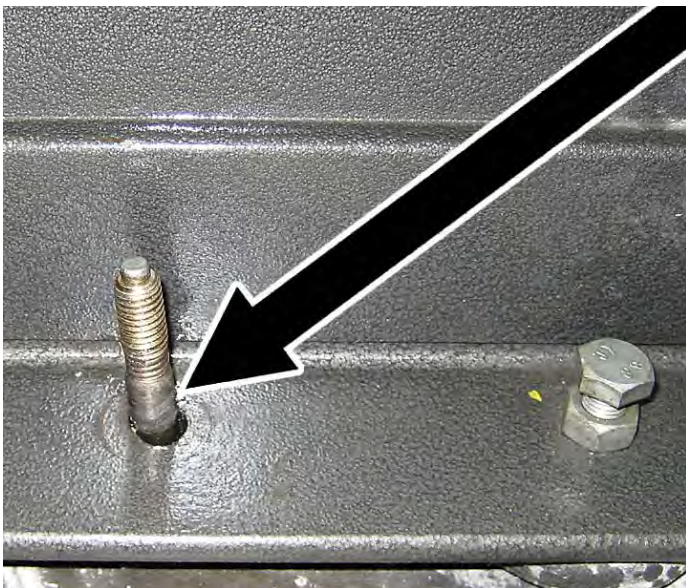


**CAUTION:** This equipment is heavy. Observe good and safe practice when attempting to install, move, maintain, or otherwise work on it. Failure to observe this caution may create a safety hazard.

Burr King recommends that this equipment be secured to a structurally sound floor. Securing the machine to the floor will not diminish performance. For portable applications (no bolt down) the machine feet should be used to assure there is uniform four-point contact with the floor. Do not use the machine feet to elevate the machine as you may damage the machine feet. The feet have an adjustment range of about ½ inch. SEE INSTRUCTIONS BELOW.

Note the following precautions and warnings regarding “machine walking”. “Walking” is the actual movement of the machine, while operating, from its original point of placement. Please note that when used in the “no bolt down mode” it is vital that the machine be loaded with media, the drive be adjusted to the minimum necessary for a vigorous media roll, and the floor have a good gripping surface. Smooth tile, polished concrete and similar floor surfaces may cause the machine to walk. If you must operate your machine on a very smooth surface secure a section of good quality indoor/outdoor carpet with a rubber backing. Place your machine on the carpet with the rubber side of the carpet to the floor.

**CAUTION:** Machines not “pinned” to the floor may “walk” while operating. Walking may occur with a light total load, or if one or more of the machine feet are not in firm contact with the floor regardless of the load. Failure to properly install, adjust, maintain, and operate this machine may create a safety hazard.



Locate the machine conveniently. The floor should be firm and structurally sound; concrete is an ideal surface. Using the existing holes as show in the photo to the left mark the floor and prepare to install an anchor to be used as a location pin. It is not necessary to bolt the machine to the floor. The anchors will act as a locating pin and allow the vibratory machine to rise and fall freely.

- Use high quality anchor bolts
- The machine when mounted on its machine feet must be free to move vertically. If you tighten the anchor bolt arrangement the natural motion of the machine will dislodge the bolts. **Note that the bolts are used as “location pins” and not as hard tie-downs.**

If you elect to retain portability (not using location pins), use the machine levelers to assure that the machine is level and that all four levelers are firmly in contact with the floor. After the levelers are properly adjusted secure them by tightening the lock nuts provided firmly to the machine base through which the leveler threaded shafts are engaged.

Walking is caused by the natural gyroscopic action created by the rotating mass of the drive system. Properly loaded and leveled the machine should not walk. Should walking occur and not be correctable by leveling or reducing the drive energy, bolt the machine to the floor as described above.

Floor texture, grease, oil, dust, and other materials that adversely effect the frictional coefficient of the machine feet may aggravate and/or promote “walking”.





### **Occupational Noise Exposure**

Burr King vibratory tubs produce levels of noise consistent with their intended purposes. The level and spectral content of noise produced is dependent on the tub size, the degree that the bowl is maintained in proper operating condition, the abrasive/media and accessories used, the specific application, use or not of the optional lid, and the surrounding environment. Noise levels produced by various Burr King vibratory tubs, as measured at the Burr King factory, range from 81 to 93 decibels. Product operators and persons in the immediate product vicinity should be protected from excessive noise does levels as prescribed in OSHA regulation 29, part 1910.95 titled “Occupational Noise Exposure”.



***Avoid electrocution hazards.*** This vibratory is not NEMA 4 or NEMA 4X rated. They must not be used in a manner that allows fluids to enter the unit base, power cord, on/off switch, or electrical plug. *This machine must be installed with a GFCI outlet to minimize the risk of electric shock or electrocution. If your machine is configured for 208-240 volts you should install a GFCI circuit in your electrical distribution panel.*

### **Electrical requirements:**

**CAUTION:** Only qualified Electricians should perform electrical installation, adjustments, maintenance, or modifications to this equipment. Failure to observe this caution may create a safety hazard.

**CAUTION:** Install this equipment in accordance with local electrical codes and regulations. Failure to do so may create a safety hazard.

Equipment	Min. service size	Model	
<b><u>Single phase units</u></b>			
1.5 hp, 120 VAC	20 ampere	M25	See the label on the machine to determine its electric service and horsepower
1.5 hp, 220 VAC	15 ampere	M25	
1.5 hp, 120 VAC	20 ampere	M45	
1.5 hp, 220 VAC	15 ampere	M45	
<b><u>Three phase units</u></b>			
1.5 hp, 208 to 260 VAC	15 ampere	M25	
1.5 hp, 416 to 480 VAC	10 ampere	M25	
1.5 hp, 208 to 260 VAC	15 ampere	M45	
1.5 hp, 416 to 480 VAC	10 ampere	M45	
3.0 hp, 208 to 230 VAC	20 amperes	M85	
3.0 hp, 416 to 480 VAC	15 ampere	M85	

Unless specified at purchase three phase machines are not equipped with a magnetic starter or power cord. Three phase machines should be connected to the mains supply via a magnetic starter. Failure to use a magnetic starter may create a /fire hazard, and/or void the motor warranty.

**NOTE: All 3 phase units purchased with an integrated process timer come from the factory with an integrated magnetic starter. If you are unsure about the installation of your machine or its electrical configuration please consult the Burr King factory.** The integrated 3 phase magnetic starter incorporates 120VAC-button control through the use of a step down transformer. The step down transformer also provides 120 VAC power for the integrated timer and the fluid pump.

**A special note about motor rotation.** Electric motors will operate CW or CCW depending on how the motor is wired (in the case of tree phase motors how the incoming power is phased). The machine drive shaft must rotate CCW when view from the discharge chute end of the machine. If the shaft rotates CW the media will not move properly and vibratory processing time will be significantly increased. If the shaft operates CW reverse the motor rotation. For three phase machines simply reverse any two incoming feed lines. For single-phase motors see the motor label plate which will usually direct the reversal of two wires with in the motor conduit box.

### **Loading media and parts into the machine**

If you purchased a media starter kit from Burr King, install the media and compounds into the chamber using the prescribed quantities and mixtures. Otherwise follow the instructions provided. Do not exceed the media load prescribed for your machine.

<b><u>Machine</u></b>	<b><u>Ceramic media load</u></b>	<b><u>Part load</u></b>	<b><u>Max. total load</u></b>
M25	150 lbs.	100 lbs.	250 lbs.
M45	250 lbs.	225 lbs.	475 lbs.
M85	450 lbs.	450 lbs.	900 lbs.

*Please note: Plastic media weights about 60% of an equivalent volume of ceramic media. Walnut shell or corncob weighs about 20% of an equivalent volume of ceramic media. Unless otherwise known by the factory machines are adjusted at the factory for ceramic media weight. This means that if you use plastic, walnut, or cob media (i.e.) it may be necessary to reduce the drive to your machine prior to actual use.. See below*

**NOTE: Over loading the machine may significantly reduce its service life. If you use steel media note that steel media weights generally 200 to 350 pounds per cubic foot (Non steel media generally weights 20 to 125 pounds per cubic foot). To avoid possible machine damages do not add media and parts to the machine such that the total specified machine load is exceeded.**

**NOTE: Using too little media in your VibraKING will significantly reduce vibratory motion and adversely affect processing time and quality. You should have sufficient media in your VibraKING such that the media rises to less than 6 inches (3-4 inches is ideal) of the rear upper lip of the tub when the machine is operating. Add media as required to maintain this minimum quantity.**

Place your parts into the tub. Note the above part loads. The part load prescribed is not a maximum but rather a nominal weight. The geometry, material, and weight of your parts will determine the part load you can achieve. The greater the total load, the harder the machine must work to sustain suitable wave and vibration energy delivery. Do not exceed the maximum total loads specified. To do so may shorten the life of your machine, and/or diminish its process capability.

### **Good media and part motion**

Vigorous media and part movement evidence good motion. A rotating wave with the highest portion of the wave rising up the back wall of the machine and the front portion of the wave substantially below the rear portion should exist. With good action the parts circulate and rise to the rear of the tub, then cascade down the wave to the tub front. Should you not observe this quality of motion, check that the machine is loaded properly (see the previous table). To reduce the tendency for the machine to walk reduce the drive energy. You may **increase or decrease** the vibratory energy delivered to the tub by adjusting the rotating mass as follows:

**CAUTION: Never apply electrical power to this equipment with the maintenance access panels removed, or if there is any indication of improper or unsafe operation. Failure to observe this caution may create a safety hazard.**

- a. Disconnect main power.
- b. Remove the rear panel.
- c. Observe the rotating mass and the position of the counter weights in respect to each other.
  - d. To increase delivered energy adjust the weights to greater agreement in alignment. Do this by loosening the weight set screws one at a time and rotating the weight on the drive shaft. Tighten the set screws. Conversely, to reduce delivered energy reduce the alignment of the counter weights.

**NOTE: The weights must be aligned in pairs. There must always be an even number of weights at any given angular displacement. Failure to observe this requirement will shorten the life of the machine and seriously reduce processing efficiency.**

e. Do not adjust the counter weights such that excessive energy is delivered to the media/parts. If you observe that the media jumps vertically, or if you hear excessive noise generation, or if the media or parts are damaged during processing, or if the machine walks, you may need to reduce the delivered energy.

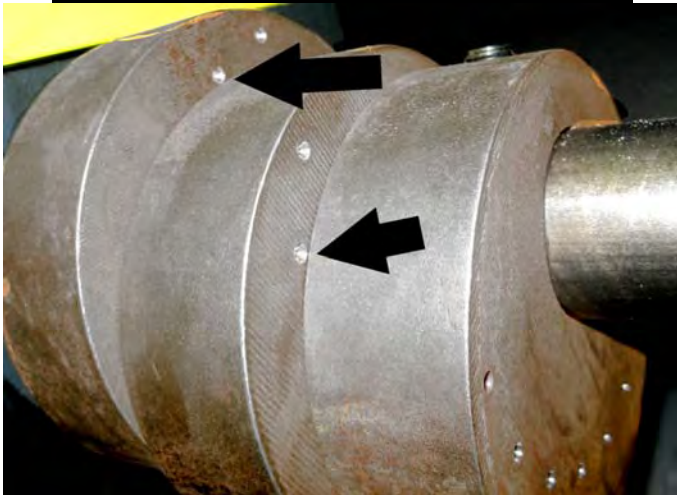
## **Reference weight adjustments:**

80% Drive – Ceramic Media

70% Drive – Plastic Media

60% Drive – Dry Media

### **Factory Set-up on a M45 for Ceramic**



Notice the 2<sup>nd</sup> dot on the weights. Starting on the outside weight, align the set screw to the flat area of the shaft. Then begin to align the weight from there making sure that the left and right side are similar. To change to 70% drive adjust the weights so you can see three dots.

**NOTE:** The machines are adjusted at the factory for a ceramic media load with maximum specified part load. If lighter media (such as walnut shell) is used, or light part loads are instilled the drive energy should be reduced by adjusting the rotating counter weights as previously described. Doing thus will reduce the tendency of the machine to walk while retaining sufficient drive energy for good processing.

These are only a starting point. The drive percentage will be affected by the weight of your part load along with the weight per cubic foot of media.

**NOTE:** Your machine may be operated with many media types. Your machine is provided with a plugging accessory that is to be installed when dry media is used. This accessory is a simple plumbing part that is to be threaded into the drain outlet of the chamber. Of course, when performing dry processing the fluid delivery system is turned OFF. If you desire to switch the machine back to wet processing, remove the plugging accessory, clean the dry media from the drain plumbing, and connect the wet drain plumbing.



**NOTE:** The drain (P/N 3599, 3599-1, or 3599-2) for your machine was installed at the factory, it can be removed and replaced. Drain 3599 has 0.201 diameter holes and is installed as the standard drain at the factory. Should the media you select require a finer drain select P/N 3599-1 with 0.125 diameter holes, or for a drain less prone to plugging select P/N 3599-2 with 0.257 diameter holes.

## **Operation of your VibraKING**

The “on/off” controls for the main drive motor and the liquid pump are marked on the control panel.

During processing you will normally apply both switches to the “on” position. Leaving the liquid pump in the “off” position inhibits the delivery of liquids and compounds.

VibraKING chambers are shipped from the factory with a re-circulating liquid supply system that includes a switch, pump, connecting hose, metering valve, and recovery sump bucket that serves to collect the fluid output from the chamber. If you purchased a FilterPAK 4001 with the machine the machine will be plumbed for this accessory.

In general, adjust the inlet fluid valve to “offline” about 60 degrees. Use enough fluid to maintain the media wet but not so much as to leave fluid standing in the machine, which will dampen operation. Of course use of certain dry application media types such as walnut shell require that the fluid be left in the OFF condition.





**Wear proper clothing and personal protection equipment when operating your machine!**

Avoid fire and explosion hazards. The use of fluids other than water and Burr King specified soaps in your VibraKING chamber (or an associated fluid re-circulating system) may create a fire/explosion hazard that could result in personal injury, or death. Use only clean water with recommended soaps.

**Avoid eye damage, flesh burns, and/or poisoning. Many vibratory processing soaps, compounds, and media are acidic or caustic. Wear appropriate flesh and eye protection gear when using vibratory soaps and compounds, and when working around and with your VibraKING chamber. Do not ingest these materials. MSDS sheets are available for all soaps, compounds, and media sold by Burr King Manufacturing. Obtain, read, and apply the precautions specified in the MSDS sheets.**

#### **Precautions you must take with fluids and other materials**

Only use fluid as recommended by Burr King Manufacturing. The liner used in the VibraKING (urethane) is very tough and resistant to abrasion. Certain chemicals may however, attack it. In example, mineral spirits may leach agents from the urethane and reduce its service life. If in doubt consult with Burr King or a chemist who is knowledgeable about urethane. Remember, never use flammable chemicals in your VibraKING chamber. Likewise, many chemicals can damage the pump and associated apparatus.

Additionally, there are many different chemicals in use as coolants, cutting fluids, and for other purposes commonly found in facilities such as machine shops. Burr King cannot guarantee the compatibility of the various soaps and fluids that we sell with the chemicals and fluids you may use. **You as the consumer must assure that the fluids and chemicals that you elect to use are compatible with each other and with other materials. It is possible that chemical reactions between fluids and/or materials that you use could be a treat to human health and safety; and/or create conditions that are deleterious to the VibraKING system, peripheral equipment, and/or your parts.**

There are many compounds that are available to use in vibratory machines depending on the materials, media, and results that you are using and desire. Fluids and compounds serve to improve finish, speed results, extend media life, and in some cases to retard oxide formation. The following is a partial list of guidelines:

1. When processing aluminum or other non-ferrous materials to a burr free state with matte finish select liquid soap such as **BKS60** and mix it with water at a concentration of 1 to 3 ounces per gallon of water. Adjust the metering valve to deliver a steady trickle of fluid to the chamber. A reasonable mechanical gauge is to set the metering valve so that it is approximately at a 45-degree angle to the centerline of the valve. For finer fluid control you must install a flow meter, most users find this unnecessary. If you elect to install a flow meter set the fluid flow between 1 and 8 gallons per hour as a starting point. To improve your parts surface condition post processing always rinse your parts in clean water shortly after removing them from the chamber, then dry them to minimize spotting. Remember that many metals will oxide rapidly when machining, etc. expose fresh metal (as is the case with vibratory processing). If this is a problem there are various chemicals that are available that you may use to dip your parts in post vibratory process to minimize oxide formation. Consult with your metals supplier, or Burr King Manufacturing.

2. When processing steel and other ferrous materials to a burr free state with a matte finish select a liquid soap that also contains a rust inhibitor such as **AR60, OR RUSTX100** and mix it with water at a concentration of 1 to 3 ounces per gallon of water. Adjust the metering valve to deliver a steady trickle of fluid to the chamber. A reasonable mechanical gauge is to set the metering valve so that it is approximately at a 45-degree angle to the centerline of the valve. For finer fluid control you must install a flow meter, most users find this unnecessary. If you elect to install a flow meter set the fluid flow between 1 and 8 gallons per hour as a starting point. To improve your parts surface condition post processing always rinse your parts in clean water shortly after removing them from the chamber, then dry them to minimize rusting. Remember that ferrous metals will oxide rapidly when machining, etc. expose fresh metal (as is the case with vibratory processing). **AR60, OR RUSTX100** will provide temporary retardation of rust formation. Depending on humidity, temperature, and other conditions the temporary rust inhibition will be from a few hours to several days. If your materials require longer protection, concentrated rust inhibitors are available that you may use to dip your parts in post vibratory process to inhibit rust formation for several days to several months. NOTE: RUSTX100 may be used as a vibratory soap

in concentrations up to 8 ounces per gallon of water; used as such it provides superior rust retardation. For special problems with rust or other staining consult with your metals supplier, or Burr King Manufacturing.

3. When de-scaling steel (i.e.) use a de-scaling agent such as **BKD80**. This compound is used in place of other soaps and mixed in ratios from 3 to 6 ounces/gallon of water. Following processing neutralize the parts by dipping them in a rich solution of **AR60, OR RUSTX100** soap (6-ounces/gallon water) and then dry the parts. **BKD80 is corrosive, wear appropriate protective gear for the eyes, hands, and other body tissues.**

3. Many materials may be brought to a fine, lustrous, low RMS finish by using non-abrasive ceramic polishing media together with a burnishing compound metered with the water. Follow the burnishing compound manufacturer's instructions as to concentration, etc.. Clean and dry your parts as described above immediately after processing.

4. Many materials may be polished to a high luster using special media such as walnut shell, corncob, etc. Typically, these types of media are used dry, without the use fluids. If you wish to use dry process media do not use the liquid delivery system. It will also be necessary to plug the outlet drain of your VibraKING chamber to prevent the media from escaping out the outlet. This can be done using common plumbing devices available at ordinary hardware stores, or from Burr King Manufacturing. **Never operate the liquid pump dry. Doing so may damage the pump.**

### Units equipped with process timers



Units equipped with process timers provide for selection and control of processing time without intervention by the operator except for selecting processing time and pressing the start button control. At conclusion of the selected time period the machine and the liquid pump will stop operation. The timers use high quality electronics that will handle the high surge currents required by induction motors when starting. The process time, time units, and time scale can be selected or be reset anytime that the unit is not operating. Proper operation of the timer requires that the “MODE” control be in the A position. All functions of the timer are selectable on the outside of the timer module by using a small philips screwdriver to rotate the selector. The face of the timer control device will show the selected parameters as the screwdriver is rotated.

*Older units with prior serial numbers require the complete removal of electrical power in order to reset the timer. Also prior serial number units require that the “MODE” selection be SF or PO.*

### Tips for optimizing your vibratory process results

It is impossible to anticipate all possible combinations of materials, shapes, media, and compounds that customers may use in this equipment. It is therefore, not possible to provide specific directions for media selection, compounds, process times, etc. There are, however, general guidelines that will help to target the optimum process. These include:

- Select your media and compounds after consulting with the Burr King factory, a qualified media supply house, or your Burr King distributor. See the previous section on using fluids and compounds.
- Clean your equipment regularly. This will help in keeping your processed parts free of stains, dust, etc.
- Use fresh fluids and change them often.
- Clean and rinse parts quickly after processing. Non ferrous parts may stain if not cleaned and dried properly. Ferrous parts may rust. There are compound additives that will help in removing and/or preventing part staining.
- Media wears out in time. The longer media is used the less is its cutting power. This “wearing out” is akin to the exhaustion of life encountered with an abrasive belt, or wheel. Softer materials such as aluminum tend to clog the media, harder materials tend to wear the surface of the media. The use of fluids will help to optimize your results. Burr King recommends that you establish a regular schedule for changing and discarding your media. You will gain knowledge regarding process times, media life, etc.. Keeping records of your process variables will help you optimize your process.

- Vibratory processing creates sludge in the liquid supply system. This sludge is a natural result of the mechanical abrasion that occurs. The sludge may contain abrasive residue, part material residue, soap, or other materials that you may introduce into the process. This sludge should be processed and discarded in a manner that is acceptable to your local, and/or state environmental protection agencies. Since Burr King can not know what materials a customer may introduce into the process, it cannot provide specific instructions regarding this topic. Burr King can provide MSD sheets for all media and chemical products that it sells.
- Use a filtration system such as the Burr King FilterPAK 4001 or FilterPAK 8000 to keep your fluids cleaner too greatly minimize difficulty in sludge disposal. The FilterPAK 4001 incorporates inexpensive, disposable filter bags that trap sludge for ready disposal. Of course the fluid that is returned to your vibratory chamber is much cleaner. Cleaner fluids mean cleaner parts, better finishes, faster processing time, and naturally less mess in your shop, and responsible waste management. Many users who process aluminum, steel, iron, copper, and other non toxic metals find that the FilterPAK 4001 filter bags may be sent to public land fills as normal refuse. **Always consult with your local authorities if you are in doubt about proper waste disposal.**



#### **Discharging media/parts**

The discharge chute is located on the lower portion of the machine left side. The chute plug may be removed by pulling it free of the tub. With the machine operating, the media and parts (if smaller than the tube diameter) will cascade from the tube to a container of your choice. **NOTE: When the machine approaches empty it may begin to walk while vibrating. Should this occur , switch main power switch to “off” and remove the balance of the media/parts manually.**

#### **Controlling rancid fluids**

Vibratory fluids will accumulate organic contaminants from operators, parts, etc. The fluids may become rancid, producing a foul smell. You can easily control rancidity by keeping your chamber, filter system, etc. clean. In the event of rancidity add a small amount of “Lysol” disinfectant to the media while the machine is operating. Ordinarily, a couple of tablespoons full will work very well and not adversely effect your vibratory processing. In fact, many metal react favorably with “Lysol” by finishing to a brighter level.

### **Maintenance of your Burr King vibratory chamber**

Maintenance consists of cleaning the unit, assuring mechanical fasteners are secure, assuring the drive belt is properly tensioned, and occasionally lubricating the drive shaft bearings.

#### **After initial 24 Hrs of Operation**

- Adjust Drive Belt Tension – ½” Deflection at 2-3 lbs
- Inspect For Loose Hardware

#### **Every 30 Days of Operation**

- Adjust Drive Belt Tension – ½” Deflection at 2-3 lbs
- Lubricate Bearings – NLGI#2 Lithium or Lithium Complex, Caution – *Do not use excessive grease.*
- Torque Bearing Mounts – 40-50 ft-lbs
- Torque Motor Mounts – 130-140 in-ozs
- Torque Bearing Shafts Sets – 65-70 in-ozs
- Torque Tub Mounts – 240-280 in-ozs
- Inspect For Loose Hardware
- Clean as Required

**NOTE:** Instructions for maintenance are also printed on the maintenance label affixed to the front access panel of the machine.

### **Special note about the motor mount and drive belt(s)**

Do not over tighten the drive belt. The machine will run better with a drive belt that in another application would appear to be running too loose. **Over tightening the drive belt will result in premature motor failure.**

### **Warranty service and replacement parts**

Should you require warranty service, or replacement parts, please contact your Burr King distributor. The Burr King factory may be reached at 1-660-438-8998. The motor manufacturer warrants the main drive electric motor; to obtain motor warranty service contact the motor manufacturer’s service center in your area. **NOTE: when inquiring about warranty service or replacement parts please be prepared to provide the actual machine part number, and its serial number.**

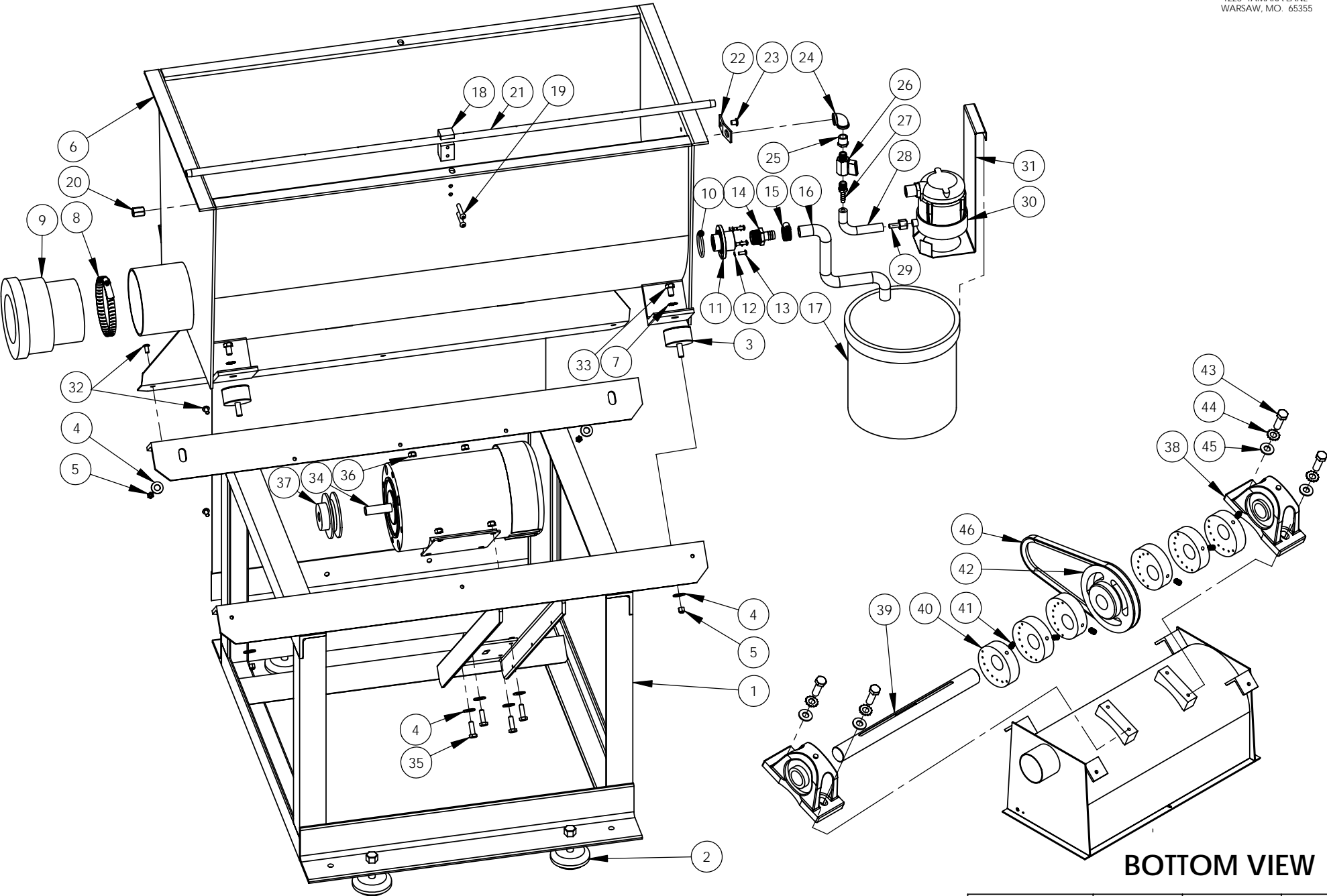
### **Modifications to your vibratory chamber**

**CAUTION:** Modification of the machine from its as shipped condition from the factory may create a safety hazard, and may void the factory warranty. If you have any questions in this regard please consult the factory before making any modifications.

M25/ M45/ M85  
SCHEMATIC



1220 TAMARA LANE  
WARSAW, MO. 65355



BOTTOM VIEW

DATE DRAWN	REV DATE	DRAWN BY	SHEET
8/19/2009		CMW	1 OF 4



M25			
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	3311-3	MAIN FRAME	1
2	3314	FOOT, MACHINE	4
3	3312	ISOLATOR 45 SHORE	4
4	5-0023	WASHER, 3/8 X 7/8, USS	8
5	4-0007	NUT, 3/8-16, ELASTIC LOCK GD 2	4
6	3300UCI-2	TUB, URETHANE	1
7	5-0014	WASHER, LOCK 3/8, INTERNAL STAR	4
8	3318	CLAMP, HOSE 3" TO 5" SCREW DRIVE	1
9	3307	PLUG, URETH. CHUTE SEAL	1
10	3598	O-RING	1
11	3599	PLUG, DRAIN, MEDIUM	1
12	15	WASHER, 5/16 LOCK, SPLIT	5
13	9	SCREW, 10-24x1/2 BH, BLK OXIDE	5
14	3404	FITTING, BARBED, 3/4 NPT, NYLON	1
15	3406	CLAMP	1
16	3409	HOSE 5/8 ID	1
17	3317	PAIL, 5 GALLON	1
18		ONLY USED ON M45 & M85	
19		ONLY USED ON M45 & M85	
20	3344	FITTING, CAP - 1/4NPT, FEMALE	1
21	3330	PIPE	1
22	3320	CLIP, RETAINER	1
23	2-0015	SCREW, 5/16-24 x 3/8 BH, BLK OX	1

M25			
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
24	3338	ELBOW, 1/4 NPT, GALV	1
25		ONLY USED ON THE M 85	
26	3337	VALVE, BALL, 1/4 NPT	1
27	3339	FITTING, BARBED HOSE, 1/4 NPT	1
28	3336	HOSE, 1/4	1
29	3340	BARB	1
30	3316-3	PUMP	1
31	3331	BRACKET, PUMP	1
32	2-0014	SCREW, 1/4-20x1/2 BH, BLK OX	18
33	1-0009	BOLT, 3/8-16 x 3/4, HEX	4
34	MOTOR	CALL FACTORY FOR MOTOR	1
35	1-0015	BOLT, 5/16-18x1 1/2 HEX HEAD	4
36	4-0014	NUT, 5/16-18, ELASTIC GD 8	4
37	3308	PULLEY 3.35 DIA	1
38	3310	BEARING, PILLOW BLOCK	2
39	3303	SHAFT, DRIVE	1
40	3305	WEIGHT, THROW	4
41	3-0001	SCREW, 3/8-16 x 1/2 SET	4
42	3306	PULLEY 5.75	1
43	1-0008	BOLT, 1/2-13 x 1 1/2 HEX HEAD	4
44	5-0007	WASHER, 1/2 LOCK EXT.	4
45	21	WASHER, 1/2 ID	4
46	3309-2	BELT, V	1

**USE FOR DRY OPERATIONS.**  
3379 PLUG 3/4 PUC 1

TITLE	DATE DRAWN	REV DATE	DRAWN BY	SHEET
M25/ M45/ M85	8/19/2009		CMW	2 OF 4

**M45**

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	3311	MAIN FRAME	1
2	3314	FOOT, MACHINE	4
3	3312	ISOLATOR, 45 SHORE	4
4	5-0023	WASHER, 3/8 X 7/8, USS	8
5	4-0007	NUT, 3/8-16, ELASTIC LOCK GD 2	4
6	3300UCI-5	TUB, URETHANE	1
7	5-0014	WASHER, LOCK 3/8, INTERNAL STAR	4
8	3318	CLAMP, HOSE 3" TO 5" SCREW DRIVE	1
9	3307	PLUG, URETHANE CHUTE SEAL	1
10	3598	O-RING	1
11	3599	PLUG DRAIN, MEDIUM	1
12	15	WASHER, 5/16 LOCK, SPLIT	5
13	9	SCREW, 10-24x1/2 BH, BLK OXIDE	5
14	3404	FITTING, BARBED, 3/4 NPT, NYLON	1
15	3406	CLAMP, HOSE	1
16	3409	HOSE 5/8 ID	1
17	3317	PAIL, 5 GAL	1
18	3347	BRACE, TUBE	1
19	31-1	SCREW, 1/4-20 x 1 1/2 FH SOC	2
20	3344	FITTING, CAP - 1/4NPT, FEMALE	1
21	3315	PIPE	1
22	3320	CLIP, RETAINER	1
23	2-0015	SCREW, 5/16-24 x 3/8 BH, BLK OX	1

**M45**

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
24	3338	ELBOW, 1/4 NPT, GALV	1
25		ONLY USED ON THE M 85	
26	3337	VALVE, BALL, 1/4 NPT	1
27	3339	FITTING, BARBED HOSE, 1/4 NPT	1
28	3336	HOSE, 1/4"	1
29	3340	BARB 1/4" x 1/4"	1
30	3316	PUMP, WATER	1
31	3331	BRACKET, PUMP	1
32	2-0014	SCREW, 1/4-24 x 1/2 BH, BLK OX	18
33	1-0009	BOLT, 3/8-16 x 3/4, HEX	4
34	MOTOR	CALL FACTORY FOR MOTOR	1
35	1-0015	BOLT, 5/16-18x1 1/2 HEX HEAD	4
36	4-0014	NUT, 5/16-18, ELASTIC GD 8	4
37	3308	PULLEY 3.35 DIA	1
38	3310	BEARING, PILLOW BLOCK	2
39	3303	SHAFT, DRIVE	1
40	3305	WEIGHT, THROW	6
41	3-0001	SCREW, 3/8-16 x 1/2 SET	6
42	3306	PULLEY 5.75	1
43	1-0008	BOLT, 1/2-13 x 1 1/2 HEX HEAD	4
44	5-0007	WASHER, 1/2 LOCK EXT.	4
45	21	WASHER, 1/2 ID	4
46	3309-2	BELT, V	1

**USE FOR DRY OPERATIONS**

3379 PLUG 3/4 PUC 1

TITLE	DATE DRAWN	REV DATE	DRAWN BY	SHEET
M25/ M45/ M85	8/19/2009		CMW	3 OF 4

M85			
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	3311-2	MAIN FRAME	1
2	3314	FOOT, MACHINE	6
3	3312	ISOLATOR 45 SHORE	8
4	5-0023	WASHER, 3/8 X 7/8, USS	12
5	4-0007	NUT, 3/8-16, ELASTIC LOCK GD 2	8
6	3300UCI-3	TUB, URETHANE	1
7	5-0014	WASHER, LOCK 3/8, INTERNAL STAR	8
8	3318	CLAMP, HOSE 3" TO 5" SCREW DRIVE	1
9	3307	PLUG, URETH. CHUTE SEAL	1
10	3598	O-RING	1
11	3599	PLUG, DRAIN, MEDIUM	1
12	15	WASHER, 5/16 LOCK, SPLIT	5
13	9	SCREW, 10-24x1/2 BH, BLK OXIDE	5
14	3404	FITTING, BARBED, 3/4 NPT, NYLON	1
15	3406	CLAMP	1
16	3409	HOSE, 5/8	2
17	3317	PAIL, 5 GALLON	1
18	3348	BRACE, TUBE	1
19	31-1	1/4-20 x 1 1/2 FH SOC	2
20	3344-1	FITTING, CAP - 1/4NPT, FEMALE	1
21	3349	PIPE, 3/8 GALV.	1
22	3320-1	CLIP, RETAINER	1
23	2-0015	SCREW, 5/16-24x3/8 BH, BLK OX	1

M85			
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
24	3338	ELBOW, 1/4 NPT, GALV	1
25	3378	BUSHING, 3/8x1/4 GALV.	1
26	3337	VALVE, BALL, 1/4 NPT	1
27	3339	FITTING, BARBED HOSE, 1/4 NPT	1
28	3336	HOSE, 1/4	1
29	3340	BARB	1
30	3316-3	PUMP	1
31	3331	BRACKET, PUMP	1
32	2-0014	SCREW, 1/4-20x1/2 BH, BLK OX	18
33	1-0005	BOLT, 3/8-16 x 3/4, HEX	4
34	MOTOR	CALL FACTORY OF MOTOR	1
35	1-0015	BOLT, 5/16-18x1 1/2 HEX HEAD	4
36	4-0014	NUT, 3/8-16, ELASTIC LOCK GD 2	4
37	3343	PULLEY 3.35 DIA	1
38	3310	BEARING, PILLOW BLOCK	4
39	3303-1	SHAFT, DRIVE	1
40	3305-1	WEIGHT, THROW	6
41	3-0001	SCREW, 3/8-16x1/2 SET	6
42	3342	PULLEY, 5.75 DIA	1
43	1-0008	BOLT, 1/2-13x1 1/2 HEX HEAD	8
44	5-0007	WASHER, 1/2 LOCK EXT	8
45	21	WASHER, 1/2 ID	8
46	3309-3	BELT, V	1

**USE FOR DRY OPERATIONS.**  
3379 PLUG 3/4 PUC 1

TITLE	DATE DRAWN	REV DATE	DRAWN BY	SHEET
M25/ M45/ M85	8/19/2009		CMW	4 OF 4


**BURR KING®**

# PLASTIC & SYNTHETIC MEDIA

## PLASTIC MEDIA

## SYNTHETIC MEDIA

Formula	Color	Purpose	Formula	Color	Purpose
V	Light Green	Light Deburr Preplate finish	SP	Tan	Polish Edgebreak
X	Dark Green	General Deburr Preplate Finish	SV	Light Green	Light Deburr Preplate Finish
XV	Blue	Fast Deburr Preplate Finish	SX	Pink	General Deburr Preplate Finish
Z1	Tan	Fast Deburr Preplate Finish	SJ	Tangerine	Fast Deburr Preplate Finish

## STANDARD SHAPES & SIZES

● No Minimum Required  
 Δ Minimum 500 lb. Order

### Formulations

#### Cones

##### PLASTIC

##### SYNTHETIC

A	B	V	X	XV	Z1	SP	SV	SX	SJ
3/8"	3/8"	Δ	●	●	●	Δ	●	●	●
1/2"	9/16"	●	●	Δ	●	Δ	●	●	●
5/8"	7/8"	Δ	Δ	Δ	Δ	Δ	Δ	●	●
3/4"	3/4"	●	●	●	●	Δ	●	●	●
1"	1"	Δ	●	Δ	Δ	Δ	Δ	Δ	Δ
1 1/4"	1 1/4"	●	●	Δ	●	Δ	●	Δ	Δ
1 1/2"	1 1/2"	Δ	Δ	Δ	Δ	Δ	Δ	●	Δ
1 3/4"	1 3/4"	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ
2 1/2"	3"	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ

#### Triangles

A	B	C	V	X	XV	Z1	SP	SV	SX	SJ
5/8"	3/8"	1/2"	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ
1 1/4"	7/8"	5/8"	●	●	Δ	Δ	Δ	Δ	●	Δ

#### TriStars

A	B	V	X	XV	Z1	SP	SV	SX	SJ
1 3/4"	3/4"	Δ	●	Δ	Δ	Δ	Δ	Δ	Δ
2"	1"	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ

#### Cylindrical Wedges

A	B
5/8"	1/2"
3/4"	3/4"
1 1/8"	1"
1 1/2"	1 1/2"

#### Tetrahedrons

A	B
3/4"	3/4"
1 1/8"	1 1/8"
1 1/2"	1 1/2"

#### Pyramids

A	B	C
1/4"	1/4"	1/4"
3/8"	3/8"	3/8"
3/8"	5/8"	3/8"
1 5/8"	1"	1"
2"	1 1/2"	1"

#### Wedges

A	B
1"	3/4"
1 1/2"	1"
2"	1 1/4"
2 1/2"	1 1/2"

### Formulations

##### PLASTIC

##### SYNTHETIC

V	X	XV	Z1	SP	SV	SX	SJ
Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ
Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ
Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ
Δ	Δ	Δ	Δ	Δ	Δ	Δ	●

V	X	XV	Z1	SP	SV	SX	SJ
Δ	●	●	Δ	Δ	Δ	Δ	Δ
Δ	●	Δ	Δ	Δ	●	Δ	●
Δ	●	Δ	Δ	Δ	Δ	Δ	Δ

V	X	XV	Z1	SP	SV	SX	SJ
●	●	Δ	●	Δ	Δ	Δ	Δ
●	●	Δ	●	Δ	Δ	Δ	Δ
Δ	●	Δ	Δ	Δ	Δ	●	Δ
Δ	●	●	●	Δ	Δ	Δ	●
Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ

V	X	XV	Z1	SP	SV	SX	SJ
Δ	●	Δ	●	Δ	Δ	●	Δ
Δ	●	Δ	Δ	Δ	Δ	Δ	●
Δ	Δ	Δ	Δ	Δ	Δ	Δ	●
Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ

- \* Plastic media with low foam additive.
- \* Synthetic media is UF resin and sand mixture.
- \* Plastic media is polyester and sand mixture.
- \* Packaged in 50LB boxes.



## FORMULATIONS

### POLISH

Made of high alumina and contains no abrasives. Use with burnishing compounds to burnish metals or with loose abrasives or compounds for deburring. These pins produce a high luster finish and are suitable for use in all types of finishing equipment.

FORMULA	COLOR	PURPOSE	MEDIA WEAR	SURFACE FINISH	CU. F.T. BULK RATE
Polish	White	Polish/ Light deburr	Excellent	Bright	115-120
Fast Cut	Grey	Fast Cut	Good	Good	100-110

### FAST CUT

Made for fast cutting and deburring applications in all types of finishing equipment

## SHAPES/SIZES

STOCK \* NON STOCK \*\*

SHAPES	STANDARD SIZES (IN MM)		SHAPES	STANDARD SIZES (IN MM)	
<b>STRAIGHT CUT POLISHING CYLINDERS</b>	DIAMETER	LENGTH	<b>FAST CUT CYLINDERS</b>	DIAMETER	LENGTH
	1.3 **	3.0		1.5 *	5.0
	1.7 **	5.0		2.0 **	4.0
	2.5 *	8.0		2.0 **	7.0
	3.0 *	10		2.5 *	8.0
	4.5 *	14		3.0 **	6.0
	5.5 **	17		4.5 **	8.0
	7.0 **	23			
<b>POLISHING TRIANGLE</b>	DIAMETER	LENGTH	<b>FAST CUTTING TRIANGLE</b>	DIAMETER	LENGTH
	2.0 *	2.0		2.0 *	2.0
	3.0 **	3.0		3.0 *	3.0
	4.0 *	4.0		3.0 **	6.0
	6.0 *	6.0		4.0 **	8.0
				6.0 *	6.0
<b>POLISHING SPHERES</b>	DIAMETER		<b>FAST CUTTING SPHERES</b>	DIAMETER	
	2.0 *			2.0 **	
	3.0 *			3.0 *	
	4.0 *			4.0 *	
	5.0 **			5.0 **	
	6.0 *			6.0 **	
	8.0 *			9.0 *	
	10.0 **			10.0 **	


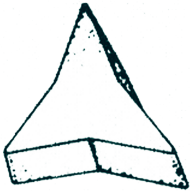

**NOTE:** The polishing pins and polishing spheres are stocked in both OH, and CA warehouses. Delivery on the other products listed - stock to eight weeks. Other sizes and non-standard items are available on special order, call for pricing and delivery. No stock 800lbs. minimum.



BURR KING MFG., INC.  
 1220 TAMARA LANE  
 WARSAW, MO 65355  
 (660) 438-8998 (800) 621-2748  
 FAX:(660) 438-8991

# **PREFORMED TUMBLING AND VIBRATORY CERAMIC ABRASIVES**

NOTE: Green and Grey fields are in stock.  
 Non stock items 500lb. minimum

SIZE	STOCK			SHAPE	SIZE	STOCK			SHAPE
	P-20	P-40	P-60			P-20	P-40	P-60	
2 x 7/8				<b>ANGLE CUT TRIANGLE</b> 	1-7/8 x 5/8				<b>ANGLE CUT TRISTAR</b> 
2 x 11/16					1-3/8 x 7/16				
1-7/8 x 7/8					1-3/8 x 1/2				
1-7/8 x 5/8					1-1/8 x 1				
1-1/2 x 1-1/2					1-1/8 x 7/8				
1-1/2 x 1/2					1-1/8 x 3/8				
1-3/8 x 5/8					1-1/8 x 5/16				
1-3/8 x 1/2					7/8 x 3/8				
1-3/8 x 7/16					7/8 x 7/8				
1-1/8 x 1-1/8					7/8 x 5/16				
1-1/8 x 1					5/8 x 3/4				
1-1/8 x 7/8					5/8 x 5/16				
1-1/8 x 5/8					5/8 x 1/4				
1-1/8 x 3/8					3/8 x 3/16				
7/8 x 7/8					1-1/8 x 1-3/4				
7/8 x 3/8					7/8 x 1-3/4				
7/8 x 5/16					7/8 x 1-1/2				
3/4 x 3/4					3/4 x 1-1/2				
5/8 x 5/8					5/8 x 1-1/2				
5/8 x 1/2 x 5/16					5/8 x 1-1/8				
5/8 x 1/4				1/2 x 7/8					
5/8 x 3/8				7/16 x 7/8					
3/8 x 3/8				3/8 x 5/8					
3/8 x 1/4				5/16 x 5/8					
3/8 x 5/16				1/4 x 5/8					
3/8 x 3/16				3/16 x 5/8					
1/4 x 1/4				3/16 x 3/8					
1/4 x 5/16				5/32 x 5/16					
1/4 x 3/16				ACC ELLIPSE 22 Degrees				<b>ANGLE CUT CYLINDER</b> 	
7/8 x 1/4				3/8 x 5/8 x 5/8					
7/8 x 5/8				3/8 x 5/8 x 7/8					
1/4 x 3/16				1 x 3/8 x 1					
1/4 x 1/4				45 & 60 Degrees					
3/8 x 3/8				3/8 x 5/8					
7/16 x 7/16				5/8 x 1-1/8					
5/8 x 5/8				1/4 x 9/16					
3/4 x 3/4									
1 x 1									
1-1/2 x 1-1/2									
2 x 2									

Compositions, General Info., Anti rust and soap solution on back.

# **PREFORMED TUMBLING & VIBRATORY CERAMIC ABRASIVES**

## **COMPOSITIONS**

P-60 = Light cut, superior finish, leaves clean surface, good for aluminum parts. (78-80lbs.)

P-40 = Good cut and wear life, excellent finish, ideal for general purpose use, economical  
(89 to 90 lbs. per cubic foot)

P-20 = Fastest cut, for heavy deburring, matte finish. (85 to 90 lbs. per cubic foot)

## **GENERAL INFORMATION**

Successful parts processing depends not only on the capability of equipment used, but also on the type, shape and size of the media used.

Users whose work requires preforms will find that an understanding of the types available will influence the quality of their work as well as time cycles and operating procedure.

We are totally capable of rendering assistance in your selection of specific media and equipment for your particular problem in deburring and finishing.

We base our recommendations and technical information on testing we consider reliable, but they are based on information we assume is correct from our dealers, agents and customers.

## **SOAP SOLUTIONS**

**AR-60** - Anti Rust solution is the neutral liquid used for prevention of oxidation and rust formation. Excellent for rinse after tumbling to prevent spotting and streaking of aluminum and magnesium. Can be mixed hot or cold. When used as a dip will impart a dry, on oily microscopic film which does not require removal for subsequent operations. Anti rust is mildly sudsy.

**BKS-60** soap solution has a slightly alkaline liquid that is especially designed for vibratory equipment as it is a low sudser. Contains some petroleum additives.

# VIBRATORY MEDIA GUIDE

*Burr King Vibratory Media comes in all different shapes, sizes and resin formulas. Dry polishing media such as Walnut Shell or super aggressive Duralum nuggets, we will help you fine the right media for your application. Vibratory Media can remove the*

*nasty slag from Plasma cut parts but it can also polish to a near mirror finish.*

*Our Vibratory Test Lab will lend you a hand when looking for the process best suited for your parts. Let us help you choose the right media for you.*

**CERAMIC:** Produced by mixing clay or other vitreous materials with abrasives. Used on ferrous and non ferrous metals. Will leave various finish from a light cut to a aggressive cut depending on the grade.



**PLASTIC:** A abrasive which is a petroleum-based plastic media Normally used on non-ferrous materials such as aluminum. Most commonly used when a low RMS micro-finish is desired, or where the finish must be substantially free of impingement damage which is seen if using ceramic media on aluminum or soft material.



**SYNTHETIC:** A blend of urea formaldehyde resin and abrasive material, such as aluminum oxide or silicon carbide. Synthetics provide environmental benefits due to its clean, non-foaming residue. Synthetics however have a lower specific gravity than plastic, meaning they do not remove material as aggressively. This type of media is a good choice for delicate parts. Synthetics do have a higher wear rate than plastic.



**DURALUM:** These nuggets are used to remove slag and mil scale. Also removes heavy flash from plasma or laser cut parts. Primarily used on ferrous material.



## BURNISHING:

This media is free of abrasive particles and is used for lapping, light deburring, and cleaning of parts. Commonly used with stainless steel, porcelain and carbon steel.



**WALNUT SHELL:** Black Walnut shell abrasive is used to polish soft metals, fiberglass, wood, plastics and stone. It works as a deburring and deflashing product for moldings, castings, and electrical parts. It is an efficient soft abrasive when used to tumble and polish gun castings, jewelry, and metal parts due to its resistance to breakdown. The media has a natural color.

**WSC50:** Black Walnut shell impregnated with chromium oxide and used for polishing white metals such as sterling, silver and stainless steel. Best used with harder metals. WSC50 green in color.



**WSR50:** Black Walnut shell impregnated with rouge and used to polish yellow metals such as gold, brass and copper. WSR50 media is red in color.

**CORN COB:** Smooth flowing abrasive made from the hard woody ring of the cob. This is used as a tumbling and vibratory media to absorb dirt and oils, and dry parts without affecting the surface of the part. Cob is biodegradable and non-toxic. Corn Cob has natural color.



**TREATED COB:** Corn cob treated with aluminum oxide and used for polishing ferrous or non ferrous soft metals. Works well for aluminum.

*(See price list for current list pricing, there are many media shapes, sizes and grits available)*

## BURR KING®

BURR KING MFG., INC.,  
1220 TAMARA LANE,  
WARSAW MO 65355  
(660)438-8998  
-WWW.BURRKING.COM





# VIBRATORY SOAPS & COMPOUNDS



*Burr King Vibratory Soaps & Compounds are more than just soap. Our vibratory compounds lubricate, clean, emulsify, suspend, cushion & flush your vibratory system keeping it running at it's optimum state.*

*Our compounds also improve the finish, cleaning and brightening of your parts. Using the right compounds decrease cycle times and extend media life. Let us help you choose the right solution for you.*

## FERROUS

**AR-60:** Anti-rust liquid is used for prevention of oxidation and rust formation. This is an inhibitor only which lasts up to two days. (047)

**RUST X-100:** Anti rust dip used for the prevention of oxidation and rust formation. Lasts up to two months if not diluted. (Rust X-100)

**RUST X-300:** Rust remover that is environmentally-safe, water-based product. Removes rust in minutes without scrubbing. Use on rusted tools, auto parts, and firearms to restore parts to like-new condition. (Rust X-300)

**BKS-45:** A liquid cleaning and deburring compound for use with non-metallic medias. Uniquely formulated low foaming chemical to eliminate plastic and synthetic media foaming problems and maximize plastic and synthetic media efficiency. Free rinsing, leaving no troublesome powdery residue. Non-chelated for ease of waste treatment. Excellent for Anodizing. (045)

### Burnish

**BKB-40:** Burnish compound helps prevent ferrous parts from rusting. Produces a bright finish on zinc, brass, copper, steel, and stainless steel. (BKB-40)

## ANTI-STICK BEADS

Crystal beads used to help prevent parts from sticking together or to the wall of the machine. Not recommended for flow-through systems. (AS-5)

**BURR KING®**

## NON-FERROUS

**BKS-60:** General purpose cleaner with a blend of quality raw materials proven to be an excellent compound for controlling the white film residue. Use with plastic, synthetic and ceramic media. (048)

**BKS-70:** Slightly alkaline, safe for aluminum and all your metals, provides bright/clean parts, free rinsing. (048-1)

**BKS-45:** A liquid cleaning and deburring compound for use with non-metallic medias. Uniquely formulated low foaming chemical to eliminate plastic and synthetic media foaming problems and maximize plastic and synthetic media efficiency. Free rinsing, leaving no troublesome powdery residue. Non-chelated for ease of waste treatment. Excellent for Anodizing. (045)

### Burnish

**BKS-32:** Burnish compound is used for burnishing, deburring, and cleaning all types of metals and alloys in a wide range of applications. It is ideal for flow-through systems. Not for zinc and aluminum die cast. (046)

## DEFOAMER

**BKDF:** A low foam liquid, alkaline, non-abrasive cutting compound developed to overcome the foaming problems encountered in vibratory finishing machines when using plastic media. This compound when properly used will remove oils, grease, etc (BKDF)

## CITRIC ACID CRYSTALS

Citric Acid Crystals are used to help remove rust and paint from all materials. Can also brighten up yellow metals. If used for rust removal, part must be dipped in a anti-rust compound upon removing them from the acid solution. (9981)