



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

1220 Tamara Lane

Warsaw, MO 65355

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

(660)438-8998 • 800-621-2748

Fax (660)438-8991

# VIBRAKING 15 INSTRUCTION MANUAL



## BURR KING VIBRAKING 15

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**(660) 438-8998 ♦ (800) 621-2748****FAX (660) 438-8991**

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 manufacturers. 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!**

**REGISTER ONLINE @  
WWW.BURRKING.COM**



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June 21, 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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December 2009

## Operating instructions for Model 15 VibraKING.

The VibraKING 15 vibratory bowls are stand mounted vibratory processing machines. The bowls are compatible with ceramic, plastic, shell, cob, and most other media types. The bowls include a port for fluid induction, and a port for fluid draining. The bowls are excellent for de-burring, de-scaling, cleaning, surface moderating, and polishing of metals, plastics, and other materials.

### **Performance features of the M15**

Your machine may be configured to be used with the following power. Please refer to the product label on the machine for the power requirements.

60 hertz, 110-120 VAC, single-phase electrical power

60 hertz, 208-240 VAC, single-phase electrical power

50 hertz, 208-240 VAC, single-phase electrical power



***Avoid electrocution hazards.*** The M15 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.*

- Vibratory amplitude is easily, and continuously adjustable from zero to full amplitude.
- Standard media discharge shoot
- An integrated 0-6 hour timer
- The machine may be operated with media/ part loads from light to full capacity without damage provided the counterweights are adjusted for the load (see next page).
- A one-half horsepower AC motor rotating within a rotation range of 1500 to 1700 RPM (dependant on the bowl load instilled) provides vibratory energy to the bowl.

### **At receipt and prior to using you VibraKING bowl**

Before leaving the Burr King factory your VibraKING<sub>2</sub> bowl was completely tested and inspected to assure that it was complete, functional, damage free, and properly packaged for shipment. You should:

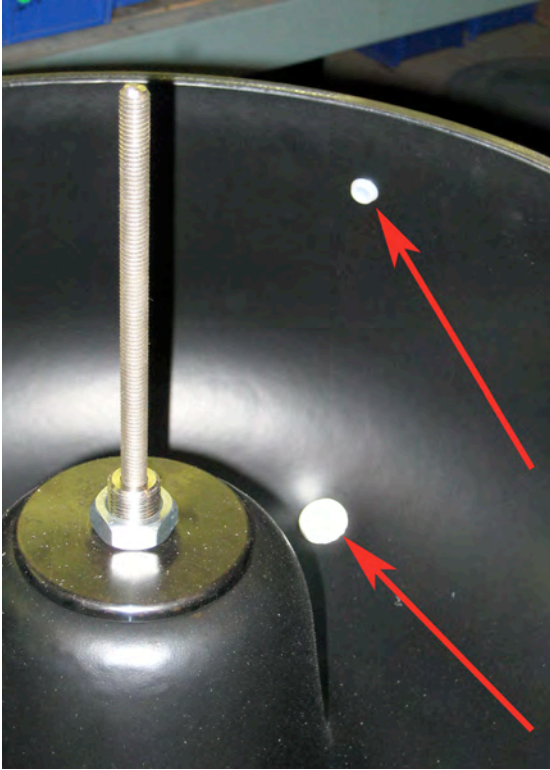
- inspect the equipment for completeness and shipping damage. If anything is missing contact your equipment supplier, or Burr King Manufacturing. If there is shipping damage file a claim with the freight carrier that delivered the bowl,
- read all instructions completely. If you have questions please contact your equipment supplier or Burr King Manufacturing for assistance,
- verify that you have your media and compound of choice,
- locate the warranty card, complete it, and return it to Burr King Manufacturing. This will insure that we can better assist you in the unlikely event you require warranty service.



***Avoid electrocution hazards.*** The M15 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.

***Avoid fire and explosion hazards.*** The use of fluids other than water and Burr King specified soaps in the bowl (or any 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 in your VibraKING<sub>2</sub> bowl and associated accessories.

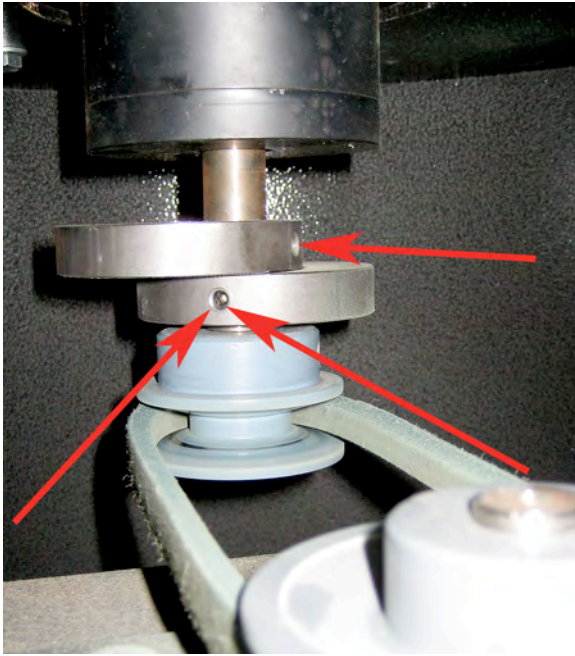
- If you intend to use dry media such as walnut shell, or corncob the bowl ports should be left plugged.
- If you intend to use manually induced fluids, the bowl ports should remain plugged.



- If you intend to use a re-circulating fluid system (such as the **FilterPAK<sub>2</sub> 4001** filtration system) connect the fluid input through an appropriate metering valve to the port on the upper rim of the bowl. Connect the drain line from the lower port on the bowl to the drain input on the re-circulating device (i.e. the **FilterPAK<sub>2</sub> 4001**) or to your fluid container. The bowl plugs are 1/4 inch NP threads for the input and 3/4 inch NP threads for the drain. If you purchased a **CombiPAK<sub>2</sub> M15** you are supplied with a clog resistant drain/ 1/2 inch hose adapter. Connect the drain hose to this accessory.
- Fill the bowl with your media of choice. The media should be filled to a level approximately 1 inch below the top of the center post of the bowl.
- If you intend to use fluids, mix the fluids per the manufacturer's instructions and introduce the fluids into the bowl either manually, or via your re-circulating system. The fluid input quantity should be adjusted to completely wet the media, but not to leave standing fluid in the bowl.
- Instill your parts into the bowl. The maximum combined media plus part load is:
  - M15 – 150 pounds (generally 100 pounds of media, 50 pounds of parts)

*Typically, ceramic media will weight 90 to 110 pounds per cubic foot. Plastic media will weight from 40 to 60 pounds per cubic foot. Shell and cob media will weigh 20 to 40 pounds per cubic foot.  
The M15 water level volume is 7.5 gallons (1 cubic feet)*

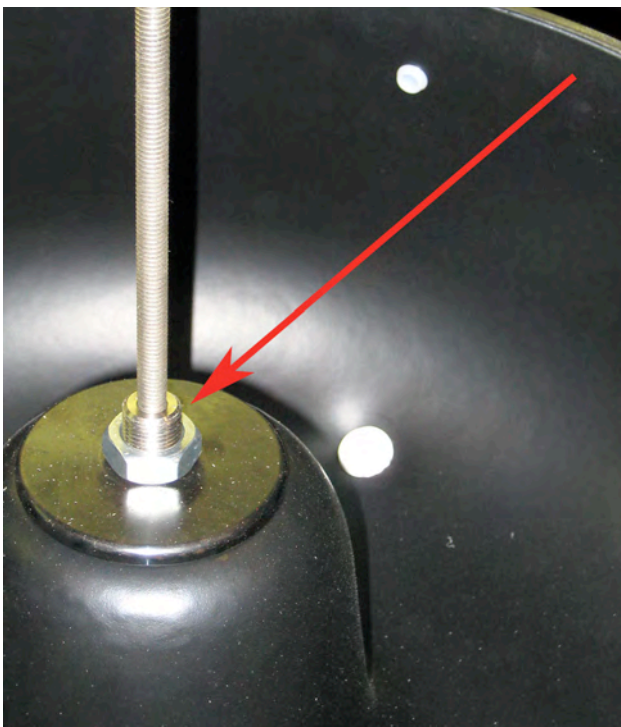
- Install the bowl lid. Using the lid will dampen generated noise, and reduce fluid evaporation.
- Connect the bowl to the correct voltage for your model.
- Turn the unit ON. The media and parts should rotate in a toroid form (a doughnut shape), with the media and parts circulating vigorously from the bowl outside toward the inner bowl post, then downward to return to the bowl edge.



**Important!** Belt tension should be approximately 1/2" of deflection at 2-3 lbs of force. Over tightening of belt will void warranty and will cause damage to your machine. The goal is to have enough tension to drive the system, but not to slip.

**100% Drive or Excessive belt tension will void factory warranty**

- **Counter weight adjustment.** If the media and part rotation is insufficient (or too aggressive) do the following:
  - Disconnect the AC electrical power.
  - Remove back panel of the base of the M15 by using a 5/32 allen and removing the 4 bolts.
  - Note the position of the two round counter weights that are mounted on the 3/4 inch shaft.
  - Loosen the setscrew on the bottom weight only. Using a 1/8 inch allen loosen the set screw. If the vibratory amplitude was too little rotate the bottom weight so that it is in closer alignment (more concentric) with the upper weight. If the vibratory amplitude was too great rotate the bottom weight such that it is lesser alignment (less concentric) with the upper weight and re-tighten the setscrew. Maximum vibratory amplitude occurs when the two weights are exactly concentric with each other. Repeat this process as required until you obtain a vigorous, yet smooth toroid media and part rotation.
  - General Starting Reference for different Medias
    - 80% Drive – Ceramic Media
    - 75% Drive – Plastic Media
    - 70% Drive – Dry Shine Media
  - Reassemble the unit by reversing the disassembly steps described above. Securely tighten all hardware.



#### **Removing and replacing the bowl**

The bowl may be removed to empty, clean, maintenance, or other reasons. The bowl may be removed by simply loosening the 3/4 -16 nut and any washers that are present.

**Important! Make sure nut remains tight against bowl washer. If nut loosens it may be a sign of your machine not running in the proper direction. Adjust counterweights to proper setting and check for bowl rotation. A nylon insert stop nut may also be used to secure the bowl to the machine.**

## 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:

- Use the proper media to reach the result you expect. Burr King Manufacturing will assist you in selecting the proper media, compound, and process. Use media that will obtain your desired finish without lodging inside part cavities. Burr King Manufacturing's media is available in several grades, shapes, and material types to be best for many part materials. Finishes can be obtained from a light matte to a chrome like shine dependent on part material type and incoming part finish quality.
- Clean your equipment regularly. This will help in keeping your processed parts free of stains, dust, etc.
- Use fresh fluids and change them often.
- Use the proper fluids (compounds) with your media of choice. Burr King recommends **BKS-60** low suds soap for non-ferrous materials, and **AR-60** anti-rust soap for ferrous materials. Typically, these soaps are mixed at 1 to 3 ounces per 1 gallon of clean water. Note that anti-rust soaps such as AR-60 will not provide extended rust inhibition. If you require more than a few hours of rust inhibition, you should dip your parts in a commercially available rust inhibitor solution.
- 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. Change your media

when its size is reduced to a point that the media lodges in part cavities, if any. Also change your media if its shape changes to a point where it will not reach desired surfaces.

- 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't 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** 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.**

- Maintain your media and equipment in a clean condition. If you use a re-circulating, filtration system such as the Burr King **FilterPAK 4001**, it will greatly reduce the need to clean your bowl and media. Without a filtration system, you will need to clean your bowl and media at regular intervals to remove media sludge, and material fines that will accumulate inside the bowl.



- Do not allow your parts to rest in the bowl for extended periods. Doing so may result in stained, oxidized, or etched parts.
- If your process uses ceramic or plastic media, clean and dry your parts immediately after withdrawing them from the vibratory bowl. With dry media such as shell or cob cleaning may not be necessary.
- Establish a process time that allows the media and compounds of choice to process your parts to the desired finish; control this process time from part load to part load in order to assure consistent load to load results.
- Pre-mix your fluids (compounds) to assure consistent mixture. Too much soap will delay results, too little soap will reduce finish quality, and limit media life.
- Control the quality of the incoming part condition. Variation in lot to lot incoming part quality may cause variation in the vibratory process output.

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

The discharge chute is located on the lower portion of bowl. The chute plug may be removed by pulling it free of the bowl. 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 bowl**

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

##### **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
- Inspect For Loose Hardware
- Clean as Required

**NOTE: Instructions for maintenance are also printed on the maintenance label affixed to the rear 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 and bearing failure.**

#### **Modifications to your vibratory bowl**

**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.**

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

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 bowl. 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 neutralizes 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.**

4. 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.

5. 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 M15 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.**

#### Accessories and supplies that are available from your Burr King equipment supplier

- **Media and compounds** of many descriptions.
- **FilterPAK, 4001** filtration systems with integrated fluid pump, filter, and fluid reservoir.
- **Spare bowls**, and replacement parts.



### **Occupational Noise Exposure**

**Burr King vibratory bowls produce levels of noise consistent with their intended purposes. The level and spectral content of noise produced is dependent on the bowl 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 supplied lid, and the surrounding environment. Noise levels produced by various Burr King vibratory bowls, as measured at the Burr King factory, range from 76 to 88 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”.**

### **Warranty**

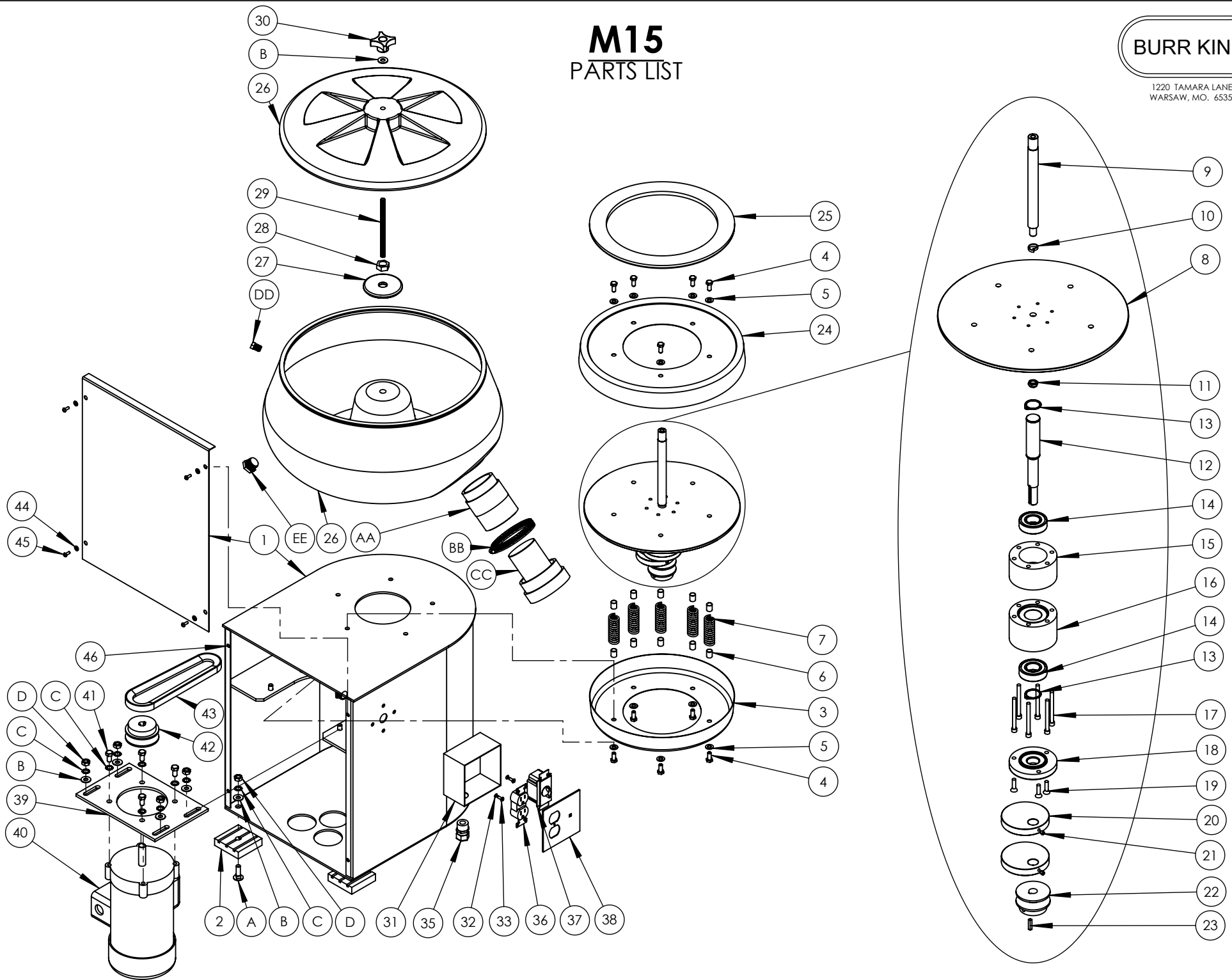
Burr King Manufacturing warrants the M15 against defects in material and/or workmanship for a period of one year after original customer purchase. This warranty is in lieu of all other warranties, either expressed or implied. Customer induced damage, miss-application, and/or abuse is not covered by warranty. To receive warranty service you must provide the serial number of your bowl, and its original date of purchase, then request a return authorization from Burr King Manufacturing, or an authorized distributor. All material, for which warranty service or replacement is requested must be returned, freight prepaid to the factory for evaluation. Burr King will (at its sole discretion) repair or replace items that qualify under this warranty. In the event warranty coverage is extended by Burr King the warranty service will be performed without charge (including return surface freight charges) to locations within the contiguous United States. For all other destinations, or for other freight modes, warranty terms are FOB Warsaw, MO USA.

# M15

## PARTS LIST

BURR KING

1220 TAMARA LANE  
WARSAW, MO. 65355



M15			
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	5000-1	STAND ASS'Y	1
2	5019	FEET, ASS'Y	4
A	1-0037	BOLT, 3/8-16 x 1-1/4, CARRAGE	4
B	40	WASHER, SAE, 3/8	9
C	3B	WASHER, LOCK 3/8, INTERNAL STAR	12
D	12B	NUT, 3/8-16, HEX, FULL, GRD 5	8
3	1516-3	COVER, SPRING	1
4	37	BOLT, 5/16-18x3/4 HEX, GRD5	10
5	4	WASHER, 5/16 SAE ZINC PLTD	10
6	5017	SPRING, INSERT	10
7	5020	SPRING	5
8	5009	PLATE, BOWL	1
9	5012	BOWL SHAFT	1
10	1031	NUT, 3/4-16, RH, HEX, THIN	1
11	4-0024	NUT, NYLOK JAM, 3/4-16	1
12	5011	SHAFT, BEARING	1
13	10-0003	CIRCLIP 1" DIA	2
14	11-0004	BEARING	2
15	5008	HOUSING, UPPER BEARING	1
16	5007	HOUSING, LOWER BEARING	1
17	2-0058	BOLT, 1/4-28 x 2 3/4 SHCS	6
18	5016	CAP, HOUSING	1
19	7-0008	SCREW, 1/4-20 x 1 FHD	3
20	5014	WEIGHT, COUNTER	2
21	5021	SCREW, 1/4-20 x 1/4, BRASS TIP	2
22	5024	PULLEY, 2.5 x 5/8	1
23	701G	KEY, 3/16 X 3/16 X 7/8	1
24	1511-3	SKIRT	1
25	5015	PAD, BOWL	1
26	1540	BOWL, ASS'Y	1
AA	5006	CHUTE	1
BB	5018	CLAMP, HOSE	1

M15			
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
CC	1541	PLUG, CHUTE	1
DD	1506	PLUG, PLASTIC, 1/4" MALE	1
EE	3379	PLUG, PVC, 3/4" STRAIGHT	1
27	5026	FLANGE	1
28	1031	NUT, RH, 3/4 x 16 HEX	1
29	1502-1	SHAFT, 3/8-16-1A, 6 1/4 LONG	1
30	1500	KNOB	1
31	3326	BOX, 2 GANG	1
32	15	WASHER, #10 LOCK	2
33	9	SCREW, 10-24x1/2 BH	2
34	3346	NIPPLE, CHASE 1/2"	1
35	3356	RELIEF, STRAIN 1/2"	1
36	5004	RECEPTACLE, DUPLEX	1
37	5002	TIMER	1
38	5003	PLATE, COVER, BOX	1
39	5010	PLATE, MOTOR MOUNT	1
40	9098-1 9098	MOTOR, 1/2 HP, 1 PH MOTOR, 1/2 HP, 3 PH	1
41	1-0005	BOLT, 3/8-16 x 3/4, HEX	4
42	5023	PULLY, 3.0 x 5/8	1
43	5022	BELT, V-PULLY	1
44	5	WASHER, 960-416 AN	4
45	29	SCREW, 10-32 X 1/2 BH	4
46	5025	CLIP, ON NUT	4

**BURR KING**

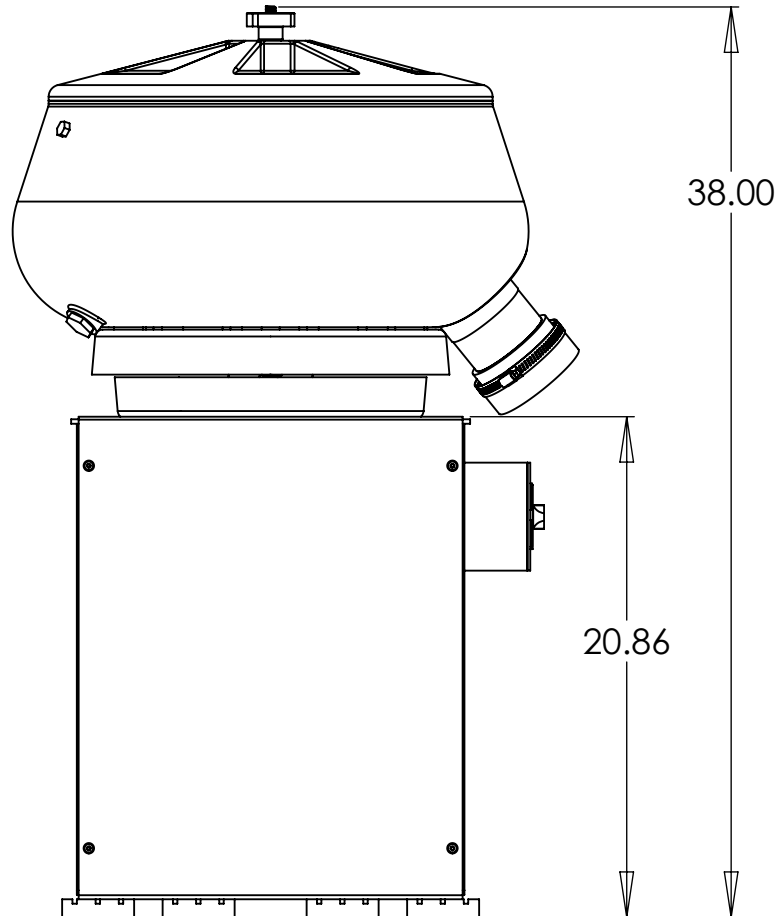
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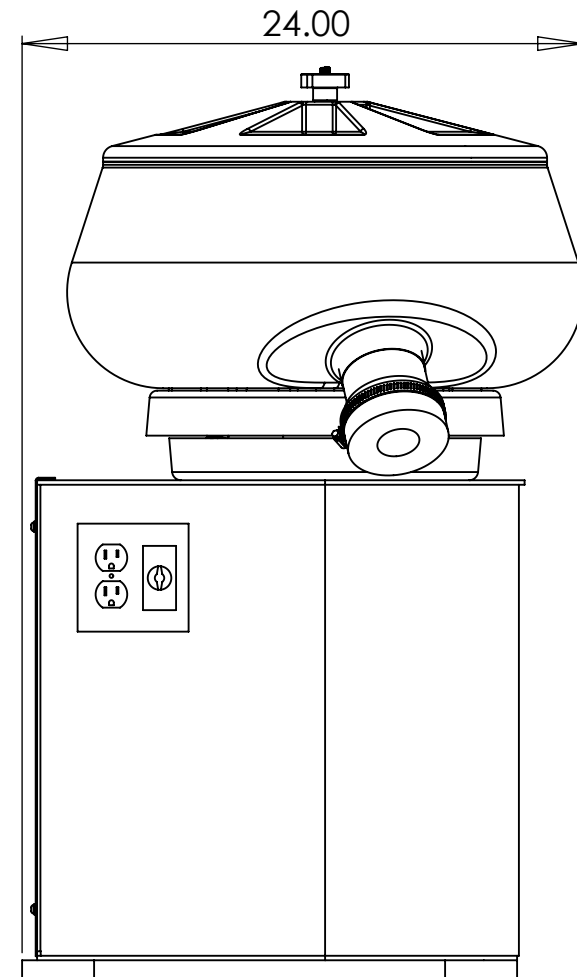
LINE DRAWING

BURR KING

1220 TAMARA LANE  
WARSAW, MO. 65355



BACK VIEW



LEFT SIDE VIEW


**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.  
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 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					
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®

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# 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)