



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

1220 TAMARA LANE

WARSAW MO 65355

WWW.BURRKING.COM

**(660) 438-8998 • (800) 621-2748**

**FAX (660) 438-8991**

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)

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February 2005

## **OPERATOR, and OPERATING AREA SAFETY**

**Subject equipment includes Grinders, buffers, polishers, and other rotating equipment. Serious injury or death may occur if minimum safety precautions are not understood, and obeyed by operators and those other persons who may be in the immediate vicinity of the subject equipment. Persons who operate, or are in the immediate vicinity of the subject equipment must be properly trained in, and use, minimum safety precautions and procedures for such machinery.**

### **Minimum safety requirements to operate, or work in the immediate vicinity subject equipment:**

1. Read and understand all operating instructions, manuals, labels, and other information provided with the equipment.
2. Install the equipment according to manufacturer's instructions.
3. Securely bolt the equipment to a rigid, structurally sound mounting surface.
4. Use and wear proper eye and face protection.
5. Use and wear proper protection for the body, hands, fingers, feet, and legs.
6. Review and understand all machine guards, adjustments, and points of exposure to potential injury.
7. Do not remove, tamper with, or otherwise alter, equipment guards, and other safety features.
8. Insure the machine is adjusted, and remains adjusted according to manufacture's requirements.
9. Maintain the equipment in good operating condition.
10. Have another person who is knowledgeable in proper and safe operation of the subject equipment demonstrate proper and safe operation to all operators, and to those persons who might be in the immediate vicinity of the subject equipment.
11. Use work piece holding devices when ever possible that diminish the possibility that persons will come in contact with moving machine pieces, or spark/debris output from the machine.
12. Use spark and debris arresting apparatus. Such apparatus should be connected to the machine so as to contain dust and debris that is generated, and to suppress sparks thereby limiting human inhalation risk, and the risk of fire or explosion.
13. Use appropriate inhalation apparatus to protect person from ingestion and/or inhalation of sparks, debris, smoke, particulates, etc.
14. Avoid mixing different metals, alloys, and materials. To mix such materials might create a fire or explosion hazard.
15. Protect persons from work pieces, particulates, etc. that could be forcibly ejected from the machine. For example, a buffing wheel or grinding belt can "grab" a work piece while the work piece is being buffed, polished, ground, or otherwise conditioned, resulting in forcible ejection toward the operator or those in the vicinity of the machine. The use of leather aprons, gloves, and eye shields are examples of protective gear that may be effective. In general do not grind, buff, or otherwise engage the traveling belt, wheel, or disc surface with the work piece pointing into the direction from which the belt, wheel, or disc is traveling. However, if you choose to do so be aware the work piece may lodge in the traveling belt, wheel, or disc and be forcibly, and dangerously ejected.
16. Do not operate this machine if the gap (nip point) between a moving belt, wheel or disc and the work support surface exceeds 1/8 inch.
17. Do not operate this machine if the gap between the moving abrasive belt, disc or wheel and the adjacent face

page 1 continued on next page

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of the work rest (or table) will permit passage of the work piece through the gap (nip point). Note, however, that certain alloys such as titanium may create conditions where grinding debris can accumulate in a tight gap creating a potential fire hazard. **When in doubt consult with your safety officer.** Failure to observe this warning may result in the work piece or other item being caught in this gap, and/or being forcibly ejected. Failure to heed this warning may cause serious bodily harm to the operator and/or bystanders. **NEVER USE THIS EQUIPMENT IF YOU ARE NOT PROPERLY TRAINED IN ITS OPERATION and/or SAFE USE! IF IN DOUBT STOP and ASK FOR GUIDANCE!**

18. Never position the work rest table at an acute angle between the top of the work rest table and the moving belt or wheel. Doing so will create “nip point” that can cause serious injury should an operator body part become entangled (pulled into) the nip point created by this acute angle.

19. Do not operate the equipment, or allow others to operate the equipment without proper training in these and other rotating machinery safety requirements.

20. Do not perform maintenance on the equipment unless you are fully qualified to do so, and understand all necessary safety and operating requirements.

21. Do not leave the machine unattended while it is running.

22. Correct equipment or safety problems immediately. Do not operate the equipment when it requires maintenance, or correction.

23. Install and use high quality abrasive belts, wheels, discs, media, etc., as appropriate to your machine. Understand and follow the operating requirements provided by the manufacturer of these materials.

### **Rotational Speed Warning, Contact Wheels**

Scope: Contact wheels manufactured by Burr King Manufacturing Company, Inc., which have rubber or urethane tires. Examples include but are not limited to stock codes 202, 302, 402, 502, 702, 802, 902, 1002, 1202 and variants. Variants have stock codes that begin with the base number; i.e. 802-S-55 is an 802 variant.

Users are warned not to exceed the below listed revolutions per minute (RPM) on the subject wheels. Failure to heed this warning may lead to tire de-bonding, fragmentation, or other mechanical failure. Such failures may cause serious personal injury to operators or bystanders, and/or cause property damage. All Burr King products are warranted for various time periods to be free of material and/or workmanship defects. Burr King Manufacturing Companies standard warranty policy is summarized as follows for contact wheels. 1 year from date of purchase if mounted on a Burr King machine purchased on the same date or 90 days if purchased as a spare or replacement part. Our warranty does not apply to wheels that are mounted on products not manufactured by Burr King Manufacturing Company, Inc. Users who mount Burr King manufactured contact wheels on product not manufactured by Burr King Manufacturing Company, Inc. do so at their own risk and assume all liability for having so mounted the contact wheel(s).

Remember good safety practice demands guarding to protect operators and bystanders from wheel failure and/or debris. Never use the subject contact wheels without proper guarding that meets commonly accepted safe practice. See OSHA, U/L, CSA, CE, ISO and other respected safety standards.

<u>Stock code</u>	<u>Maximum Safe RPM</u>
202, 302	10000
402, 502, 702 802	4400
902, 1002	2200
1202	1600

Page 2, continued on page 3

Continued from page 2

**Occupational Noise Exposure**

Burr King products produce levels of noise consistent with their intended purposes. The level and spectral content of noise produced is dependent on the product type, the degree that the product is maintained in proper operating condition, the abrasive/media and accessories used, the specific application, and the surrounding environment. Noise levels produced by various Burr King grinders and polishers, as measured at the Burr King factory, range from 80 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, piece 1910.95 titled "Occupational Noise Exposure".

**ROTATING EQUIPMENT CAN BE DANGEROUS TO OPERATORS AND THOSE WHO MAY BE IN ITS IMMEDIATE OPERATING VICINITY. IT IS THE ABSOLUTE AND DIRECT RESPONSIBILITY OF PURCHASERS, MANAGERS, AND OPERATORS OF THIS EQUIPMENT TO UNDERSTAND AND OBEY THE FOREGOING MINIMUM OPERATING SAFETY REQUIREMENTS. IF YOU HAVE QUESTIONS OR SAFETY CONCERNS REGARDING OPERATING THE SUBJECT EQUIPMENT PLEASE CALL YOUR AUTHORIZED BURR KING DISTRIBUTOR, OR BURR KING MANUFACTURING AT 1-800-621-2748. YOUR SAFETY IS OUR FOREMOST CONCERN!**

**Burr King Manufacturing disclaims any and all responsibility for injuries, damage, loss of income, or other adverse consequence as might be incurred by purchasers, managers, and operators of this equipment.**

**Page 3 is last page**



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## Mounting Instructions

### 14xx series internal grinding attachments

June 2001

14xx internal grinding attachments provide valuable functional additions to Burr King belt grinders such as:

- extension of the belt track outward approximately 6 inches
- small diameter nose wheels for tight radii grinding
- belt tracks from ½ inch wide up to the standard belt track width of the machine
- close access to corners, radii, cavities, tubes and other part features that may be otherwise inaccessible
- reduced belt speeds for better grinding characteristics on many materials
- flexibility to mount many different Burr King nose extensions on the base attachment
- belt track and tension control via the mounted machine functions.

14xx internal grinding attachments may be mounted on any Burr King belt grinder with model numbers 562, 482, 760, and 960. The belt length required for each machine is increased by 12 inches from standard when the 14xx attachment is mounted on the machine. In example, the belt length for the model 760 is increased from 60 to 72 inches. Additionally, mounting 14xx attachment results in a reduction of belt speed to approximately 42% of the pre-mount speed. In example, mounting a 14xx attachment on a model 760 normally operating at 8000 surface feet per minute (SFPM) reduces the belt speed to approximately 3360 SFPM. If you require faster belt speed ask Burr King for the optional 4-inch diameter drive wheel. Drive wheel (P/N 412) will increase belt speed to approximately 125% of that provided by the standard 3-inch diameter drive wheel (P/N 302).

Mounting a 14xx attachment on a Burr King belt grinder requires the removal of the machine's standard contact wheel, contact wheel guard, work rest and work rest support arm, back-up platen and platen support assembly. Correctly installing the 14xx attachment provides for pinch point protection and other safety features otherwise provided by the standard machine items removed.

**Caution: Failure to mount the 14xx properly may create a safety hazard. Observe the safety instructions attached and those provided with the mounted machine.**

-----  
Mounting a 14xx attachment:

Locate the parts list for the machine on which you wish to mount the 14xx. For purposes of this instruction the Burr King model 760 belt grinder is used for explanation. Models 562, 482, and 960 follow similar sequence, except some part numbers may be different, i.e. a 702 contact wheel may be a 402 contact wheel. In the case of model 960 grinders which have a two wheel system the mounting of the 14xx is similar except for the absence of the third machine wheel shown in figure. Do not discard any part that you remove from the grinder as it will be require should you desire to return the machine to its standard configuration.

1. Disconnect the machine from its main power source. Assure that no one is able to turn the power back on without your approval.
2. Slack the abrasive belt and remove it from the machine.
3. Clean the machine thoroughly (it's just a good time to do it!).
4. Remove contact wheel retaining nut and washer (P/N 727 and 726).

5. Remove the contact wheel (P/N 702).
6. Loosen the contact wheel clamping screw (P/N 10).
7. Remove the contact wheel guard and platen assembly (P/N 703, 704b, 704a and hardware).
8. Loosen the work support clamping screw (P/N 10).
9. Remove the work support arm and work support
10. Carefully clean and lightly oil the outer diameter of the contact wheel bearing assembly (P/N 701).
11. Assure the clamping screws of the mounting bracket (P/N 1425) are loose then slide the support arm over the contact wheel bearing assembly until it stops.
12. Position the mounting bracket approximately horizontal and tighten the clamping screws.
13. Install the small drive wheel (P/N 302) on the 5/8 inch contact wheel arbor and secure it using the flange washer (P/N 1426) and the original contact wheel nut (P/N 727), tighten securely.
14. Install the belt style of your choice (must be 12 inches longer than the standard belt) as follows:
  - a. route the belt according to figure 1. If your standard machine is a model 960 the process is the same except only one idler wheel exists on the model 960
  - b. assure the belt is routed such that the red pinch guards (P/N 1429) protect the pinch points (see figure 1)
  - c. tension the belt using the rear wheel handle assembly.

Other 14xx installation instructions:

It may be necessary to adjust the position, angle, or extension length of the 14xx arm assembly. This may be necessary because of the belt you chose, the condition of your machine, or the angle that you wish the arm to be at. Do this by:

1. loosening two set screws (P/N 1445) that secure the main pivot bar (P/N 1426) to the mounting bracket (P/N 1425)
2. rotate the forward portion of the 14xx until it is in a position suitable for your work and, such that the abrasive belt can be tensioned. Note: It may be necessary to position the pivot bar (see step 12 above)
3. securely tighten the two set crews (P/N 1445) to fix the position of the forward portion of the 14xx attachment.

Tracking the abrasive belt on the nose wheel is done by using the standard belt-tracking knob of the left side of the mounted machine. Note: The ½-inch wide small diameter extensions (P/N 1438/1439) has an additional tracking adjustment located on the left side of P/N 1438. Rotate the adjusting screw CW or CCW as required to make small tracking adjustments on this assembly. Usually once this adjustment is performed it is not often again required.

Tips for obtaining the best service from your 14xx attachment

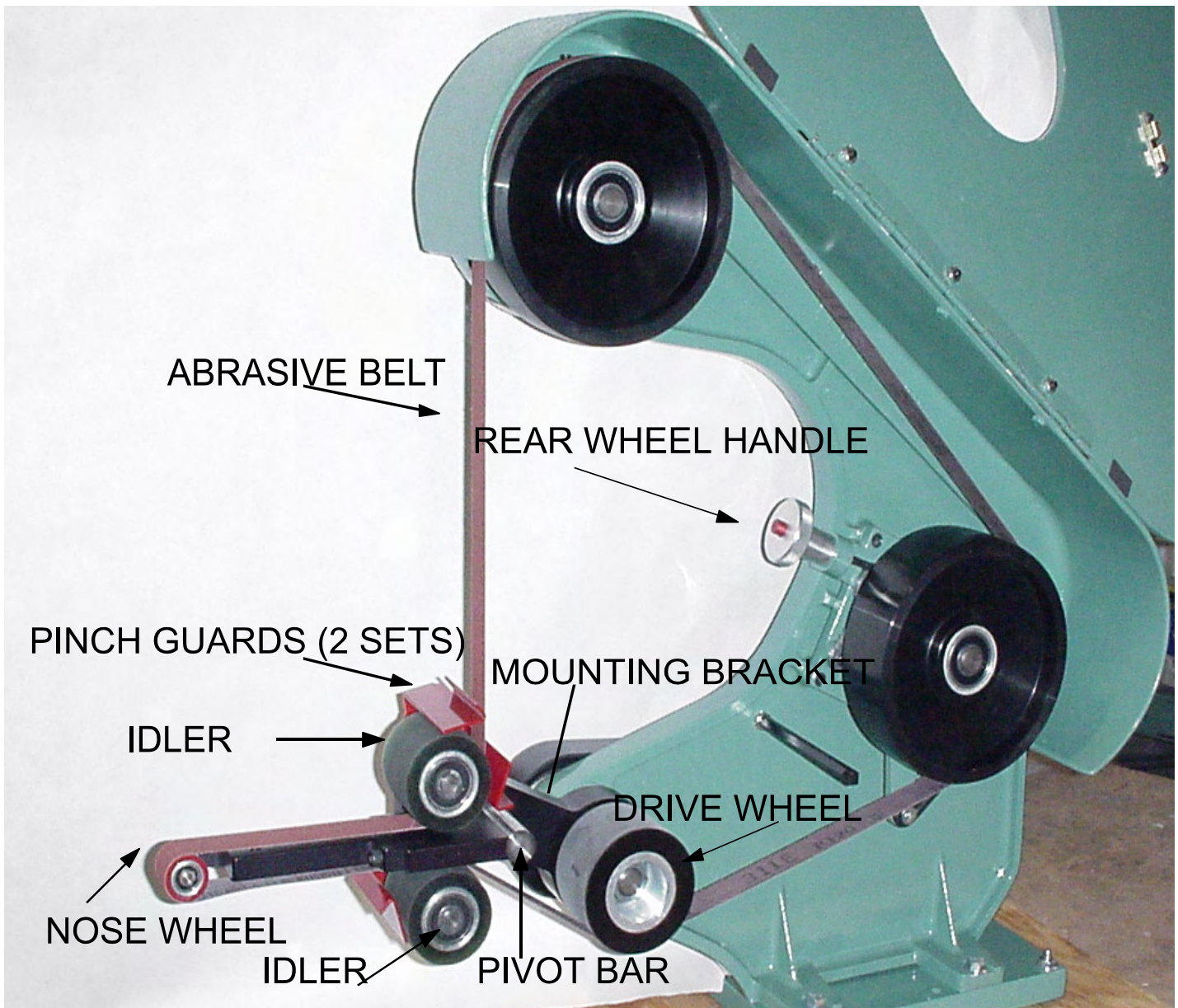
1. Use good quality abrasive belts.
2. Whenever possible use pliant, flex back belts. Doing so will help in blending, particularly in tight radii, cavities, etc.
3. Use the nose wheel whenever possible as the preferred grinding site.
4. Maintain sufficient but not extreme abrasive belt tension. Normally the mounted machine rear wheel arm should be pushed back about 4 ratchet clicks past initial belt contact. Note: belts of different composition behave differently, i.e. a nylon belt will tend to stretch more than a cloth backed belt.
5. When using thick belts such as nylon web types it may be necessary to adjust the pinch guards for sufficient but not excessive clearance. **CAUTION: There should be no more than 1/8 inch clearance between the moving belt (or wheel) surface and the pinch guard.**
6. Assure that the 14xx idlers (P/N 1444) remain serviceable. The idler wheels are made of very tough urethane (or steel optional) and will provide good service life. They will, however, wear progressively. If they wear to the point that they are severely coned, tapered, out of round, or simply too small they need to be replaced. Continued use of badly worn idlers will result in excessive wear to the mounted machine's wheels since the mounted machine will override the worn idlers and wear excessively.
7. Small diameter nose wheels turn at high revolutions per minute (RPM). In example, a 9/16-inch wheel will revolve at over 20000 RPM. The nose wheel bearings at designed to operate at this speed, however, applying high radial or axial loads to the nose wheel will shorten its service life. In general,

keep applied force below 5 pounds for very small wheels. Larger wheels have larger bearings, turn slower and will tolerate higher applied loads.

8. Where heavier grinding is desired use harder and/or serrated nose wheels. Burr King can help you with the best wheel selection. Burr King can supply nose wheels from 3/8 inch to 3 inches in diameter and from 1.2 to 2 inches wide. Nose wheels require the use of the proper support extension.
9. Use different front extensions for access to close corners, cavities, or special grinding needs. Burr King can help you select the best front section for your 14xx attachment.
10. Maintain the 14xx attachment, and the mounted machine in clean, serviceable condition. Assure all pinch guards, and other guards on the attachment and mounted machine are serviceable and used.

Burr King Manufacturing will help you with all of your finishing needs. If you have an application problem, or need other assistance please contact us at any of the indicated phone numbers or at [WWW.burking.com](http://WWW.burking.com) . Thank you for choosing Burr King products!

Figure 1: SAFETY GUARD SHOWN OPEN FOR CLARITY. **DO NOT OPERATE WITH SAFETY GUARD OPEN**



**ALL 1400 SERIES ATTACHMENTS USE  
THE SAME (COMMON) PARTS LISTED BELOW**

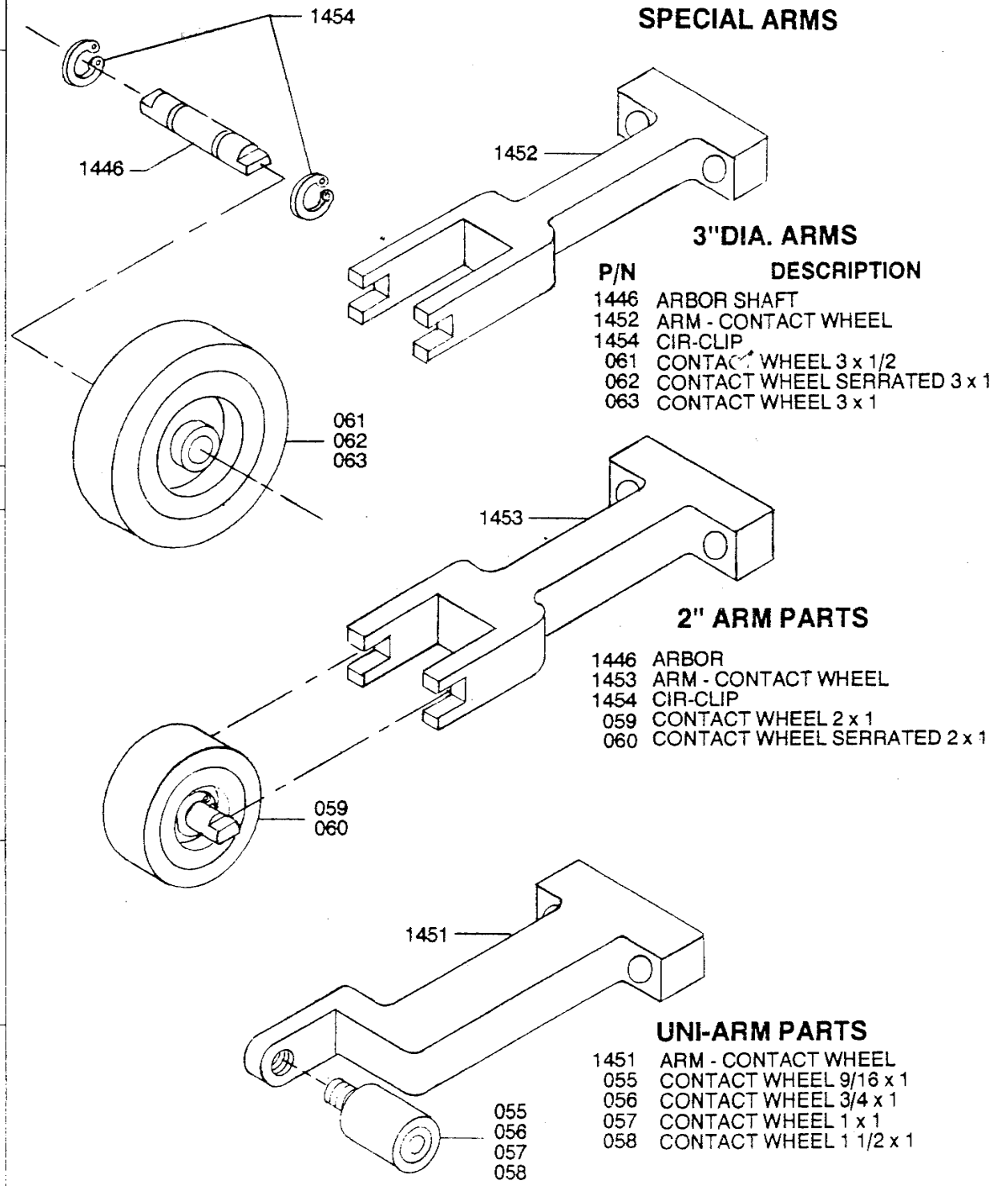
P/N	DESCRIPTION	QTY.
5	WASHER AN916-416	8
30	SCREW-ALLEN CAP 1/4-20 x 1	2
32	SCREW-ALLEN CAP 1/4-20 x 1 1/2	2
302	DRIVE WHEEL 3" DIA.	1
709	IDLER WHEEL BEARING	2
1425	MOUNTING BRACKET	1
1426	PIVOT BAR	1
1427	ARM SUPPORT	1
1428	IDLER WHEEL BRACKET	1
1429	PINCH GUARD	3
1430	SCREW-ALLEN CAP 5/16-18 x 1	1
1431	SCREW-ALLEN CAP 1/4-20 x 1/2	2
1433	SCREW-ALLEN CAP 1/4-20 x 3/4	2
1437	ROLL PIN 1/8 x 3/8	2
1444	IDLER WHEEL	2
1445	SET SCREW 1/4-20 x 5/8	4
1456	WASHER-DRIVE WHEEL	1

**NON-COMMON OR SPECIFIC BY PART NO.**

1400 1/2" PARTS		
1432	ARBOR PIN .1245	1
1434	BEARING - 1/8 x 1/4	1
1435	SCREW-ALLEN CAP 1/4-28 x 3/4	2
1438	CONTACT ARM SUPPORT	1
1439	ARM - CONTACT WHEEL 3/8" & 1/2"	1
1441	SET SCREW 1/4-28 x 1/2	1
1448	CONTACT PAD .050 THICK	2
1450	CONTACT PAD .125 THICK	2
1455	ARM - CONTACT WHEEL 5/8"	1
△ WHEELS		
051	CONTACT WHEEL RUBBER 3/8 DIA.	1
052	CONTACT WHEEL STEEL 3/8 DIA.	1
053	CONTACT WHEEL RUBBER 1/2 DIA. <i>steel</i>	1
054	CONTACT WHEEL RUBBER 5/8 DIA.	1

1401 1" PARTS		
1436	BUSHING 9/16 & 3/4 WHEELS ONLY	2
1442	ARM - CONTACT WHEEL	1
△ WHEELS		
038	CONTACT WHEEL 9/16 DIA.	1
039	CONTACT WHEEL 3/4 DIA.	1
040	CONTACT WHEEL 1 DIA.	1
041	CONTACT WHEEL 1 1/2 DIA.	1

1402 2" PARTS		
1436	BUSHING 9/16 & 3/4 WHEELS ONLY	1
1443	ARM - CONTACT WHEEL	1
△ WHEELS		
042	CONTACT WHEEL 9/16 DIA.	1
043	CONTACT WHEEL 3/4 DIA.	1
044	CONTACT WHEEL 1 DIA.	1
045	CONTACT WHEEL 1 1/2 DIA.	1

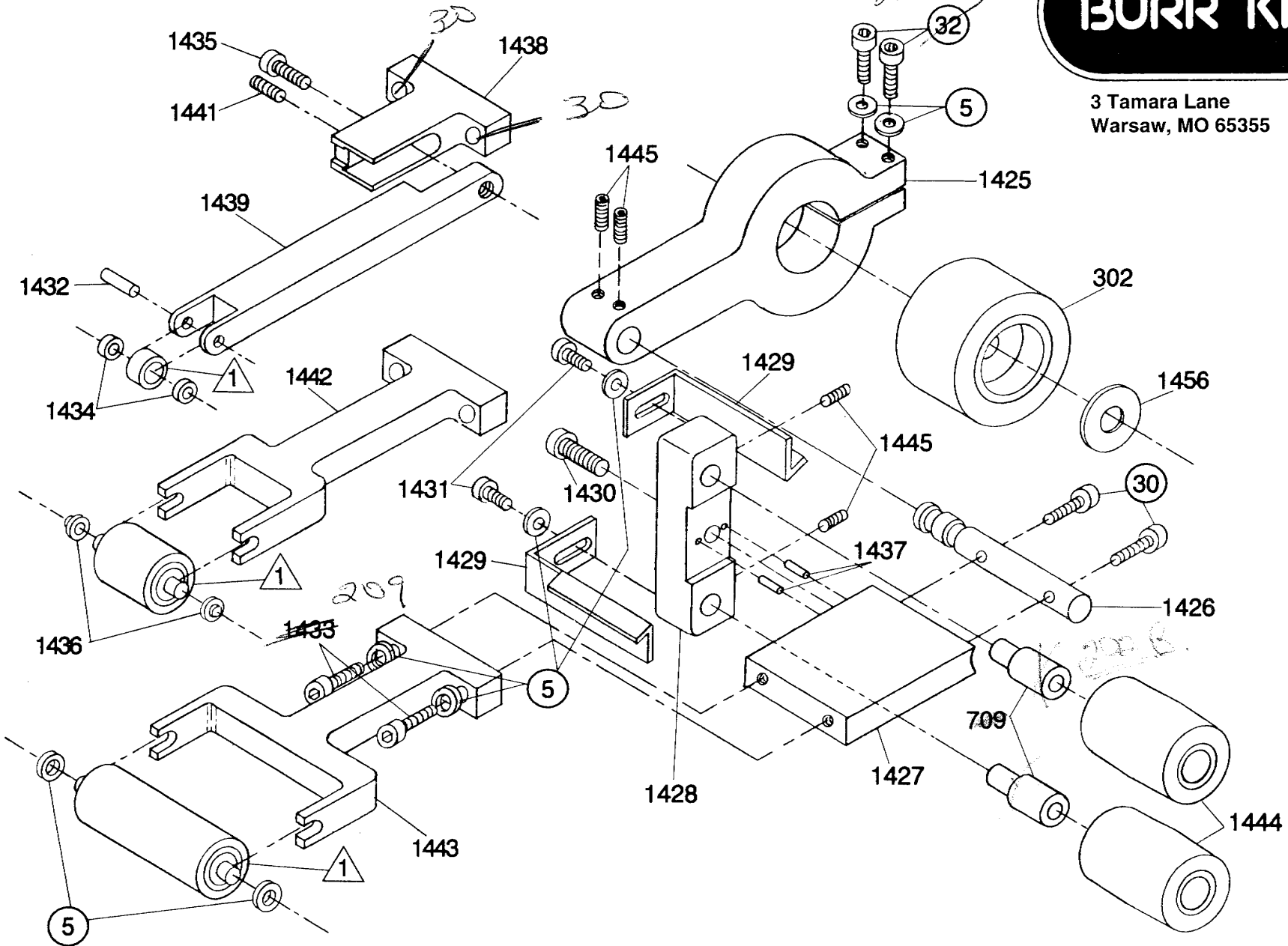




# 1400 SERIES ATTACHMENTS



3 Tamara Lane  
Warsaw, MO 65355



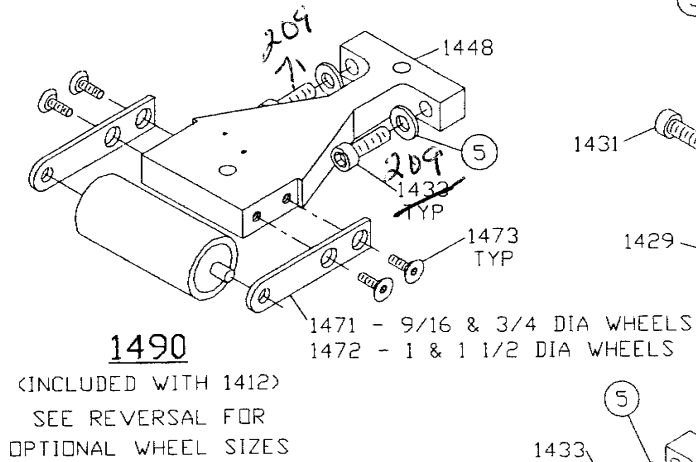
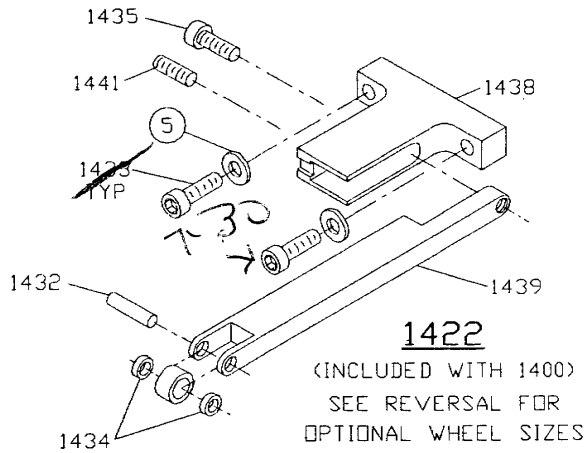
:SEE REVERSE SIDE FOR WHEEL SIZES

PRELIM - 1-5-99/line

**BURR KING**

3 TAMARA LANE  
WARSAW, MD 65355

1400 (1/2x72) FULL ACCESS ATTACHMENT  
1411 (1x72) FULL ACCESS ATTACHMENT  
1412 (2x72) FULL ACCESS ATTACHMENT



with  
nuts  
1470  
(INCLUDED WITH 1411)  
SEE REVERSAL FOR  
OPTIONAL WHEEL SIZES

