

# DG-16

## *Diamond Grinder/Polisher*



3706 MILL CREEK DRIVE NE  
COMSTOCK PARK, MI 49321

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# INTRODUCTION

## **FORWARD**

**WARNING** READ THIS MANUAL CAREFULLY PRIOR TO OPERATING THE EQUIPMENT IN ORDER TO UNDERSTAND HOW TO OPERATE AND SERVICE THE EQUIPMENT CORRECTLY. FAILURE TO PROPERLY REVIEW THIS MANUAL COULD RESULT IN PERSONAL INJURY OR EQUIPMENT DAMAGE.

This manual should be considered a permanent part of the equipment and should remain with the equipment at all times. Please note the following:

Measurements in this manual are given in metric and standard U.S. measurement equivalents.

Use only correct replacement parts and fasteners. Fasteners may require specific tools.

Right and left hand sides are determined by facing forward while sitting in the seat behind the steering wheel.

## **THIRD-PARTY MANUFACTURER INFORMATION**

This equipment contains an engine manufactured by a third-party manufacturer. This engine may be covered by the manufacturer's standard factory warranty and the manufacturer may require that all repairs and/or service be completed pursuant to its warranty terms and conditions. Please refer to the product manual and Warranty Breakdown for additional information on this warranty and any registration requirements.

## TERMS AND CONDITIONS OF SALE

1. **Parties.** "Seller" means **BW Manufacturing, Inc.** "Buyer" means any entity or individual purchasing goods from Seller.
2. **Terms and Conditions of Sale.** These Terms and Conditions of Sale define the relationship of Buyer and Seller and apply to all sales of equipment (including, but not limited to Shotblasters, Scarifiers, Diamond Grinders/Polishers, Concrete Dust Collection Systems, and Trailers), components incorporated into equipment, parts, supplies, materials or other personal property (individually and collectively, "Equipment") by Seller to Buyer. Buyer acknowledges and agrees that these Terms and Conditions of Sale are incorporated in, and are a part of, any contract of sale and each quotation, purchase order, invoice, and any other document relating to the sale of Equipment by Seller to Buyer (these documents are collectively referred to as the "Agreement").
3. **Quotation Expiration.** Written quotations signed by Seller are valid for a period of 30 days unless otherwise noted by Seller.
4. **Pricing.** Prices for Equipment and other related information shown in any Seller product publication, including but not limited to catalogs, brochures, and websites, are subject to change without notice. Prices do not include related freight charges, use tax, sales tax, excise tax, value-added tax, or similar taxes, or charges of any nature whatsoever imposed by any governmental authority unless otherwise expressly noted by Seller.
5. **Taxes.** Prices quoted do not include (and Buyer shall pay) all taxes and fees of any kind that may be levied or imposed on either party by federal, state, municipal, or other governmental authorities in connection with the sale or delivery of the Equipment by Seller.
6. **Terms of Payment.** Unless Buyer has obtained credit approval from Seller, payment is due and payable to Seller in cash on completion of Seller's delivery obligation (COD). For Buyers with credit approval, any amounts due by Buyer to Seller that are unpaid on or after 30 days of Seller's invoice will bear interest at the simple interest rate of 2 percent (2%) per month or the maximum rate permitted by law, whichever is less. The accrual or payment of any interest as provided above will not constitute a waiver by Seller of any rights and remedies in connection with a default by Buyer. Buyer will pay all court costs, attorney fees, and other costs incurred by Seller in collecting past-due amounts, including interest. If shipment or delivery of Equipment is delayed by or at the request of Buyer, payment will remain due in full on the original delivery date for Buyers without credit approval or 30 days from the date of Seller's invoice for Buyers with credit approval. In either such event, Seller may impose, and Buyer shall pay, storage charges and other incidental expenses incurred by Seller as a result of the delay in addition to any interest on late payments as described above.
7. **Security Interest.** As security for payment of all amounts due to Seller, Buyer grants to Seller a security interest in all Equipment sold by Seller to Buyer, and Seller will have all rights of a secured party under the Uniform Commercial Code with respect to the Equipment. Buyer appoints Seller as its attorney-in-fact with authority, at Seller's option, to take actions as Seller deems reasonable in the circumstance to perfect the above security interest in any one or more jurisdictions, and Buyer shall pay all applicable filing fees.
8. **Limited Express Warranty.** For a period of ninety (90) days from the completion of Seller's delivery obligation under this Agreement, Seller warrants that a limited selection of components manufactured by Seller and incorporated into the Equipment will be free of defects in material and workmanship. A complete list of components covered under this warranty ("Warranty Breakdown") and is incorporated in its entirety into this Agreement. In the event Buyer has a claim related to the components covered under this warranty, Buyer shall be bound by the then-current Warranty Breakdown. Buyer's sole remedy for breach of this warranty is limited to repair and replacement, within the warranty period, of defective components manufactured by Seller and covered under this warranty pursuant to the Warranty Breakdown. Buyer is responsible for all shipping costs arising out of any warranty service provided by Seller. SELLER EXPRESSLY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, WITH REGARDS TO THE EQUIPMENT AND/OR COMPONENTS MANUFACTURED BY SELLER AND INCORPORATED INTO THE EQUIPMENT, WHICH ARE NOT INCLUDED IN THE ABOVE REFERENCED WARRANTY, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. BUYER ASSUMES FULL RESPONSIBILITY THAT THE EQUIPMENT PURCHASED UNDER THE AGREEMENT MEETS THE SPECIFICATIONS AND/OR INTENDED USE OF BUYER, AND SELLER MAKES NO REPRESENTATION WITH RESPECT THERETO.
9. **Disclaimer of Third-Party Component Warranties.** THE SOLE REMEDY AVAILABLE TO BUYER WITH RESPECT TO DEFECTS IN THE COMPONENTS MANUFACTURED BY THIRD PARTIES WILL BE AGAINST THE THIRD PARTY MANUFACTURER UNDER ANY APPLICABLE MANUFACTURER'S WARRANTY TO THE EXTENT AVAILABLE TO BUYER. WITH REGARDS TO COMPONENTS MANUFACTURED BY THIRD PARTIES AND INCORPORATED INTO THE EQUIPMENT, SELLER MAKES NO WARRANTY, EXPRESS OR IMPLIED, RELATING TO THE COMPONENTS, WHETHER BASED ON BREACH OF WARRANTY OR CONTRACT, NEGLIGENCE, STRICT LIABILITY OR OTHERWISE, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

## TERMS AND CONDITIONS OF SALE CONTINUED

10. **No Consequential Damages.** IN NO EVENT WILL SELLER BE LIABLE OR RESPONSIBLE FOR ANY SPECIAL, INCIDENTAL, CONSEQUENTIAL, EXEMPLARY, OR PUNITIVE DAMAGES, OR FOR EXPENSE OCCASIONED BY THE USE OF DEFECTIVE EQUIPMENT.

11. **Delivery.** Any delivery dates or other schedule of performance by Seller are approximations, and the sole obligation of Seller with respect to the schedule of delivery or performance will be to use commercially reasonable efforts to deliver the Equipment, or otherwise to perform, consistent with the reasonable demands of its business. In any event, Seller will have no liability to Buyer or any other person for delays in performance due to strikes or labor disputes of any type; accidents, fire, floods, acts of God, or actions by governmental authorities; acts, omissions, or delays of Buyer or any other third party; shortages of labor; or without limitation of the above, for any causes reasonably beyond the control of Seller.

12. **Title and Risk of Loss.** Title to and risk of loss to the Equipment will pass to Buyer on delivery by Seller F.O.B. Seller's place of business, located at 3706 Mill Creek Dr. NE, Comstock Park, Michigan, 49321.

13. **Inspection and Acceptance.** Buyer will have two (2) days from the date of delivery to inspect the Equipment for defects and nonconformance and to notify Seller, in writing, of any defects, nonconformance, or rejection of the Equipment. After this period, Buyer will be deemed to have irrevocably accepted the Equipment. After acceptance, Buyer will have no right to reject the Equipment for any reason or to revoke acceptance. Seller is not responsible for damage to the Equipment arising out of the shipment of the Equipment to Buyer. Claims for damage due to shipping must be made by Buyer to the freight carrier.

14. **Return of Equipment.** All returns will be pursuant to Seller's instructions. Buyer must contact Seller for a Return Material Authorization (RMA) before returning any Equipment. All returns must reference the RMA number along with the original invoice number and the reason for return.

15. **Cancellation or Termination.** In the event of cancellation of the Agreement by Buyer, or in the event of default under the Agreement by Buyer that is not cured within 30 days after notice by Seller, Buyer will pay to Seller on demand all direct and indirect costs (including, without limitation, all applicable restocking or cancellation charges, including reimbursement for direct costs assessed by the manufacturer) incurred directly or indirectly by Seller in connection with the Agreement, all as reasonably determined by Seller, plus any lost profit. In no event, however, will any amount payable by Buyer under the Agreement exceed the total price payable by Buyer for the Equipment.

16. **Modifications and Waiver—Entire Agreement.** The Agreement contains the entire agreement between Seller and Buyer and can be modified or rescinded only by a writing signed by both parties. If any term of the Agreement is held invalid or unenforceable, all other terms of the Agreement shall remain in effect. Any document submitted by Buyer to Seller confirming its intention to purchase Equipment described in the Agreement will be deemed to constitute a confirmation and acceptance of the Agreement, even if the document states terms in addition to or different from those in the Agreement. All agreements between Seller and Buyer will be solely under the terms and conditions of the Agreement and Seller objects to any and all additional or different terms contained in any document submitted to Seller by Buyer. Any execution by Seller of any other document submitted by Buyer in connection with the purchase of Equipment does not constitute acceptance of or agreement to any terms and conditions in addition to or different from those contained in the Agreement, but will constitute only acknowledgment of receipt of the document. In addition, Buyer's acceptance of these terms shall be conclusively presumed by Buyer's (i) acceptance of delivery of or (ii) payment for Equipment covered under the Agreement.

17. **Compliance with Laws.** Buyer will be responsible for compliance with any and all federal, state, or local laws or regulations respecting safety or respecting use of the Equipment and shall indemnify and hold Seller harmless from and against any and all claims of violations of laws or regulations or other claims of personal injury or property damage directly or indirectly related to the installation, maintenance, or operation of the Equipment.

18. **Export Control.** Equipment supplied by Seller may be subject to various export laws and regulations. It is the responsibility of the exporter and Buyer to comply with all laws and regulations. If any required export authorization is denied, Seller will be relieved of any further obligation related to the sale and delivery of the Equipment.

19. **Governing Law and Venue.** This Agreement will be governed by and construed in accordance with the laws of the State of Michigan. Buyer submits to personal jurisdiction in Michigan. Seller and Buyer agree that any action arising out of the sale of goods or services in accordance with this document will be brought, heard, and decided in a court located in Kent County, Michigan and that this venue is convenient. .

20. **Authority.** Each signatory represents that it has all requisite authority to execute the Agreement on behalf of its principal and that the Agreement is fully enforceable against the principal in accordance with its terms.

# B W MANUFACTURING, INC.

## GENERAL SAFETY & HAZARDOUS MATERIALS WARNING

**WARNING** SURFACE PREPARATION EQUIPMENT CAN BE DANGEROUS IF NOT OPERATED PROPERLY. THE OPERATOR IS RESPONSIBLE FOR THE SAFE OPERATION OF THIS EQUIPMENT. The operator must carefully read and follow any warnings or safety instructions provided with the equipment prior to operating the equipment. Do not remove any safety devices or warnings on the equipment.

**WARNING** FLOOR AND/OR DECK SURFACES MAY BE COATED WITH OR CONTAMINATED BY HAZARDOUS MATERIALS. Typical examples of hazardous materials include (i) tile mastic (likely to contain *asbestos*); (ii) stained areas near electrical equipment (potentially containing *PCBS*); (iii) paint (potentially containing *lead*); (iv) stained floor areas in chemical or other industrial facilities (potentially containing toxic *pesticides*, *cleaning fluids*, *solvents*, or other *harmful chemicals*).

**WARNING** Preparation equipment is used to remove surface material from a variety of surfaces. The surface preparation process often generates large amounts of dust and other small particles, which are released into the air. WHEN A SURFACE CONTAINS HAZARDOUS MATERIALS, EXPOSURE TO THE DUST GENERATED BY THE PREPARATION EQUIPMENT MAY POSE A HEALTH RISK. INSPECT ALL SURFACES FOR POSSIBLE CONTAMINATES PRIOR TO USING PREPARATION EQUIPMENT AND CONSULT HAZARDOUS MATERIAL EXPERTS AND GOVERNMENT AUTHORITIES BEFORE OPERATING PREPARATION EQUIPMENT ON SURFACES SUSPECTED OF CONTAINING HAZARDOUS MATERIALS.

**WARNING** BW MANUFACTURING, INC. IN NO WAY REPRESENTS THAT ITS PREPARATION EQUIPMENT IS SUITABLE OR APPROVED FOR REMOVING HAZARDOUS MATERIALS FROM CONTAMINATED SURFACES. DO NOT ATTEMPT TO USE ANY PREPARATION EQUIPMENT MANUFACTURED BY BW MANUFACTURING, INC. ON ANY CONTAMINATED SURFACE. It is the responsibility of the preparation equipment operator and/or the contractor using the preparation equipment to inspect the proposed worksite for contaminants and obtain approval from contamination experts and/or government authorities before using BW Manufacturing, Inc. preparation equipment. It is also the responsibility of any contractor using preparation equipment to inform its employees or subcontractors of all potential health risks associated with operating preparation equipment and to ensure its employees or subcontractors are protected from exposure to harmful materials.

BW MANUFACTURING, INC. IS NOT RESPONSIBLE FOR ANY INJURY, ILLNESS, DEATH, OR PROPERTY DAMAGE THAT MAY RESULT FROM IMPROPER USE OF ITS PREPARATION EQUIPMENT OR OTHER PRODUCTS



# Test Results in accordance to OSHA 1926.1153 Respirable Silica Dust Exposure

On October 27, 2017, an Industrial Hygienist with the Consultation Education and Training (CET) Division of the Michigan Occupational Safety and Health Administration (MIOSHA) conducted air monitoring at our facility in response to our request for assistance with evaluating employee exposures to silica while using BW Manufacturing's grinders and vacuum.

The air monitoring included breathing zone samples on an employee using the DG-71-ME Hand Grinder connected to an A-101 Pulse Vac and a DG-16-2 Diamond Grinder/Polisher connected to an A-101 Pulse Vac. These were screening samples that were run long enough to ensure that the sample result's limit of detection was below the established action level limit of 0.025 mg/m<sup>3</sup>.

## Air Monitoring

The air sampling that was performed at our facility was only considered to be screening samples and do not represent a full shift monitoring period. If these operations were consistently performed for the full shift, then the Sample Results, found on the enclosed Air Contaminant Data Sheets, would be a relatively accurate employee exposure representation for a full shift.

The test results revealed that the operator using both the DG-71-ME Hand Grinder and the DG-16-2 Diamond Grinder/Polisher was not exposed to concentrations of respirable quartz (silica), respirable cristobalite and respirable nuisance dust in excess of the established limits (i.e., PEL). The results indicated that silica was not detected on the filters.

These air sample results can be passed on as objective data to employers to utilize when developing their safety and health programs and determining employee exposure levels. Contractors must be reminded that the working conditions must be similar to the test conditions if this is going to be used as objective data. The testing was performed outdoors on concrete that contained 50% silica as determined through a bulk sample submitted to the lab. This objective data would not be applicable to work conditions that contain more than 50% silica or is performed indoors. Further testing (air monitoring) for indoor environments would be required for use as objective data indoors.

Sheet A #1

## AIR CONTAMINANT DATA SHEET

I# BWM2017  
Date: 10/26/17

Employer: BW Manufacturing, Inc.  
3706 Mill Creek Dr., NE  
Location: Comstock Park, MI 49321

Michigan Department of Licensing & Regulatory  
Affairs  
MIOSHA  
Consultation, Education & Training Division  
IH: David A. Humenick

Contaminant	TWA	STEL	C	AL	Equipment
Respirable Quartz	0.050 mg/m <sup>3</sup>	NA	NA	0.025 mg/m <sup>3</sup>	LAPVC filter w/ cyclone & personal air sampling pump.
Respirable Cristobalite	0.050 mg/m <sup>3</sup>	NA	NA	0.025 mg/m <sup>3</sup>	LAPVC filter w/ cyclone & personal air sampling pump.
Dust - Respirable nuisance dust	5 mg/m <sup>3</sup>	NA	NA	NA	LAPVC filter w/ cyclone & personal air sampling pump.

Identification/Description	Time	Contaminant	Results	Type	Exposure	Note
BW#000: Bulk sample of silica from vacuum.	am	% Silica % Cristobalite	50% ND	Bulk Bulk	50% ND	
BW#1: Area sample located on A-101 Pulse Vac above the air discharge.	10:10 am To 12:40 pm	Respirable quartz Respirable cristobalite Respirable nuisance dust	<0.017 mg/m <sup>3</sup> <0.017 mg/m <sup>3</sup> <0.10 mg/m <sup>3</sup>	TWA TWA TWA	ND ND ND	1 1 1
BW#2: Breathing zone sample of John Larsen, angle grinding concrete outdoors. 7", 4.5 hp, Metabo angle grinder connected to a A-101 Pulse Vac utilizing the BW flexible shroud. 24 segment cup grinding wheel w/ 30-40 grit. Grinding ~170 sq. ft., 15 ft. of 2" hose (standard). Environmental conditions: 39-44 degree F, slight breeze 6 mph w/ gust to 7 mph (calm). Humidity 86%, dew point 36 degree F, wet bulb 38 degree F. No respiratory protection worn.	10:14 am To 11:39 am	Respirable quartz Respirable cristobalite Respirable nuisance dust	<0.024 mg/m <sup>3</sup> <0.024 mg/m <sup>3</sup> <0.20 mg/m <sup>3</sup>	TWA TWA TWA	ND ND ND	1 1 1
BW#3: Breathing zone of John Larsen, operating the DG-16-2 grinder (walk behind) w/ pulse vac, outdoors. 80 grit medium cut pressure. Grinding ~300 sq. ft., 15 ft of 2" hose (standard). Environmental conditions: 48-51 degree F, slight breeze 6 mph w/ gust to 8 mph. Humidity 64%, dew point 36 degree F, wet bulb 42 degree F. No respiratory protection worn.	12:20 pm To 1:49 pm	Respirable quartz Respirable cristobalite Respirable nuisance dust	<0.022 mg/m <sup>3</sup> <0.022 mg/m <sup>3</sup> <0.20 mg/m <sup>3</sup>	TWA TWA TWA	ND ND ND	1 1 1



# Test Results in accordance to OSHA 1926.1153 Respirable Silica Dust Exposure

Sheet A #2

## AIR CONTAMINANT DATA SHEET

Michigan Department of Licensing & Regulatory  
Affairs  
MIOSHA  
Consultation, Education & Training Division  
IH: David A. Humenick

I# BWM2017  
Date: 10/26/17

Employer: BW Manufacturing, Inc.  
3706 Mill Creek Dr., NE  
Location: Comstock Park, MI 49321

Identification/Description	Time	Contaminant	Results	Type	Exposure	Note
Note 1: Employee exposure does not exceed the limit. Note 2: Employee exposure exceeds the limit. Note 3: Screening samples only.						

TWA (Time-Weighted Average) = exposure limit averaged over an 8-hour period  
 STEL (Short-Term Exposure Limit) = averaged over a 15-minute period  
 C (Ceiling) = exposure limit not to be exceeded during any part of the workday  
 AL (Action Level) = exposure limit averaged over an 8-hour period  
 Results = average exposure concentration during the sample period  
 Exposure = employee's exposure; compare it to the limit

$E_m$  = exposure for mixture: see R325.51104  
 $E_m$  shall not exceed 1  
 > = greater than  
 < = less than  
 NA = not applicable  
 ND = none detected

ppm = parts per million  
 ppb = parts per billion  
 $\mu\text{g}/\text{m}^3$  = micrograms per cubic meter  
 $\text{mg}/\text{m}^3$  = milligrams per cubic meter  
 f/cc = fibers per cubic centimeter



## Air/Material Sampling Report

Michigan Department of Licensing and Regulatory Affairs  
Michigan OSHA/Occupational Health Laboratory

1. Reporting ID		2. Inspection/Visit/Intervention Number BWM2017		3. Sampling Number	
4. Establishment Name BW Manufacturing				5. Public/Private (For Consultation use only) <input type="checkbox"/> Self-Help <input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	
6. Person Performing Sampling (Signature) <i>David A. Herman</i>		7. CSHO ID Y4658		8. Sampling Date 10/26/17	9. Shipping Date 10/27/17
10. Employee Name: John Larsen			11. Job Title: DG -16-2 grinder w/ pulse vac		
12. Exposure Information		a. Number: 1		b. Frequency: as needed	
				13. Photo(s) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<b>Exposure Summary</b>					
14. Line No.	15. Substance Code	16. Rqstd.	17. Smpl. Type	18. Exp. Type	19. Exposure Level
20. Units	21. PEL	22. Adj.	23. Severity	24. Citation/Hazard Information	
				No Cit.	FTA
				Over Exp.	Eng.
				PPE	Trng.
				Med.	Other
				No Haz.	
1.					
2.					
3.					
4.					
5.					
25. Additives (Enter Line Numbers for those agents contributing to additive effect)					
26. Total Number of Lines (14):			27. Date Results Received from Laboratory:		
28. Pump Model: SKC		Pump #: 06447		Sampling Data <i>aa 11-3-17</i>	
29. Sample Submission Number		BW#3		<i>BW #3</i>	
30. Sample Type/Media		p/L			
31. Filter/Tube Number		32918		<i>B</i>	
32. Time On		12:20 pm		<i>L</i>	
Time Off		1:49 pm		<i>A</i>	
33. Total Time (in minutes)		89 min		<i>N</i>	
34. Flow Rate <input checked="" type="checkbox"/> l/min <input type="checkbox"/> ml/min		2.5		<i>K</i>	
35. Volume (in liters)		222.5			
36. Lab Sample Number		<i>180234</i>		<i>180235</i>	
37. Analyze For:		38. RL*		Results	
1.	Resp Quartz 9010	<i>5mg</i>	<i>ND &lt; 0.022</i>	<i>NP</i>	
2.	Resp Cristobalite 9015	<i>5mg</i>	<i>ND &lt; 0.022</i>	<i>NP</i>	
3.	<i>9130</i>	<i>40mg</i>	<i>ND &lt; 0.20</i>	<i>ND</i>	
4.				<i>AN 11-20-17</i>	
5.					
39. Results expressed in $\text{mg}/\text{m}^3$ unless otherwise noted.			40. Test Method: <i>OHL20045015v011</i>		
41. Interferences and IH Comments to Lab		42. Supporting Samples		43. Chain of Custody	
<i>Bulk sent separately if results provided by Bureau for Maryam. 12-11-17</i>		a. Blanks: BW#00 (L32891)		a. Seals Intact?	Date
				b. Rec'd in Lab	Initials
				c. Rec'd by Anal.	
				d. Anal. Completed	
				e. Calc. Checked	
				f. Supr. OK'd	
44. Analyst's Comments <i>F2018 0032 F2018 0090</i>		b. Bulks: BW#000			
* Reporting Limit		Samples NOT blank corrected unless otherwise indicated. Results relate only to the items tested.			

## Pre-Sampling Calibration Records

P r e	45. Pump Mfg. & No. SKC 06447	46. Flow Rate Calculations LAPVC w/ cyclone = 2.5 lpm (SKC)		
	47. Location Home Office			
	48. Flow Rate 2.5 LPM	49. Pump Calibrator Tag # 00743	50. Initials DAH	51. Date 10/25/17

2.5 LHM 00745	DAH	10/25/17
Post-Sampling Calibration Records		

P o s t	52. Location Home Office	53. Flow Rate Calculations		
	54. Flow Rate 2.5 LPM	Pump Calibrator Tag # 00743	55. Initials DAH	56. Date 10/26/17

57. PPE - Respiratory Protection (Type and Effectiveness)	DAH	10/26/17
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[illegible]

## 58. Job Description, Operation, Work Location(s), Ventilation, Controls, Field Notes and Calculations

DG-16-2 grinder (walk behind) done outdoors, connected to a A-101 Pulse Vac. 80 grit, medium cut pressure. Grinding approximately 300 sq ft. 15 ft of 2" hose (standard). 48-51 degree F, slight breeze 6 mph w/gust to 8 mph. Humidity 64%, Dew point 36 degree F, wet bulb 42 degree F.

Questions regarding the analyses should be directed to Ann Whitaker, Laboratory Director  
Phone: (517) 322-2132 E-mail: [whitakera@michigan.gov](mailto:whitakera@michigan.gov) Fax: (517) 322-3219

Mail to: Michigan Department of Licensing and Regulatory Affairs  
 MIOSHA / Occupational Health Laboratory  
 P.O. Box 30677  
 Lansing, MI 48909-8177

Ship to: Michigan Department of Licensing and Regulatory Affairs  
MIOSHA / Occupational Health Laboratory  
7707 Rickle Street  
Lansing, MI 48917

## Air/Material Sampling Report

## Michigan Department of Licensing and Regulatory Affairs

Michigan OSHA/Occupational Health Laboratory

1. Reporting ID		2. Inspection/Visit/Intervention Number BWM2017		3. Sampling Number	
4. Establishment Name BW Manufacturing				5. Public/Private (For Consultation use only) <input type="checkbox"/> Self-Help <input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	
6. Person Performing Sampling (Signature) <i>David A. H.</i>		7. CSHO ID Y4658		8. Sampling Date 10/26/17	
10. Employee Name:		11. Job Title:			
12. Exposure Information		a. Number:		b. Frequency:	
				13. Photo(s) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Exposure Summary					
14. Line No.	15. Substance Code	16. Rqstd.	17. Smpl. Type	18. Exp. Type	19. Exposure Level
20. Units	21. PEL	22. Adj.	23. Severity	24. Citation/Hazard Information	
				No Cit.	FTA Over Exp. Eng. PPE Trng. Med. Other No Haz.
1.					
2.					
3.					
4.					
5.					
25. Additives (Enter Line Numbers for those agents contributing to additive effect)					
26. Total Number of Lines (14):			27. Date Results Received from Laboratory:		
28. Pump Model: SKC		Pump #: 06447		Sampling Data	
29. Sample Submission Number		BW#000			
30. Sample Type/Media		Bulk			
31. Filter/Tube Number					
32. Time On					
Time Off					
33. Total Time (in minutes)					
34. Flow Rate <input type="checkbox"/> l/min <input type="checkbox"/> ml/min					
35. Volume (in liters)					
36. Lab Sample Number		180236			
37. Analyze For:		38. RL*		Results	
1.	Resp Quartz 9010 0.25%	0.50%	50		
2.	Resp Cristobalite 9015 0.50%	0.25%	ND		
3.	9120	40mg	8/16/17		
4.					
5.					
39. Results expressed in $\text{mg}/\text{m}^3$ unless otherwise noted.		40. Test Method: OHL 20045015 v.011			
41. Interferences and IH Comments to Lab		42. Supporting Samples		43. Chain of Custody	
Please determine % silica Silica content provided by Bryan Ventar, Maxxam. At 12-11-17		a. Blanks:		Date Initials	
		b. Bulks: BW#000		a. Seals Intact? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <i>CC</i>	
				b. Rec'd in Lab 11-3-17 <i>CC</i>	
				c. Rec'd by Anal. 11/14/17 <i>g 998</i>	
44. Analyst's Comments F2018 0032 8/16/17 F2018 0090				d. Anal. Completed 11-15-17 <i>g 998</i>	
				e. Calc. Checked 12-11-17 <i>g 991</i>	
				f. Supr. OK'd 12-11-17 <i>g 991</i>	
* Reporting Limit		Samples NOT blank corrected unless otherwise indicated. Results relate only to the items tested.			



## WARRANTY BREAKDOWN

Item	NONE	90 DAYS	1YEAR	3 YEARS	WARRANTED BY:
Chassis		O			B W Mfg., Inc.
Elect. Motor			O		Leeson Electric
Gas Motor			O		Honda Power

## WARRANTY CONTACT INFORMATION

B W Mfg., Inc.	B W Manufacturing, Inc.
	Voice: 616-447-9076
	Fax: 616-447-9078
	E-mail: <a href="mailto:info@bwmanufacturing.com">info@bwmanufacturing.com</a>
	<b><i>Warranty does not include travel time</i></b>

## WARRANTY CONTACT INFORMATION

Honda Power Equipment Group	Honda Power Equipment Group
	Voice: 770-497-6400
	940 Lively Blvd.
	Wood Dale, IL 60191-1204
	<a href="http://www.honda-engines.com">www.honda-engines.com</a>

# DG-16

## DIAMOND GRINDER/POLISHER

### OPERATING & MAINTENANCE INSTRUCTIONS

#### Starting & Operating Instructions

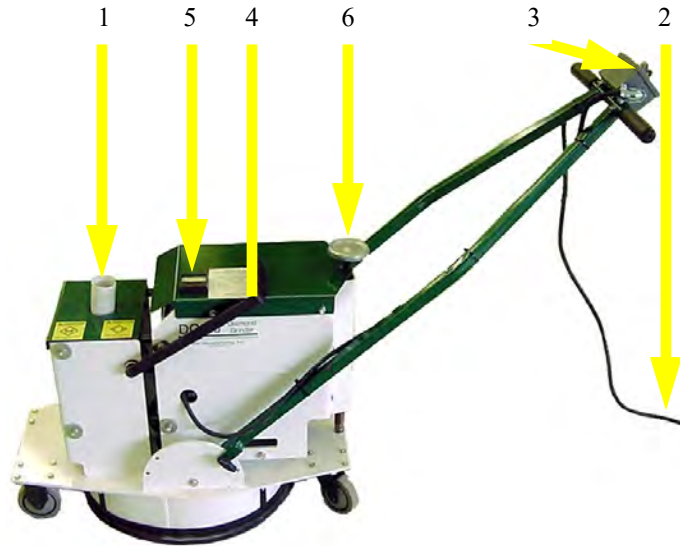
Connect vacuum hose to dust port (1), plug machine into power supply (2), flip switch to start motor (3), flip handle (4) to engage diamonds, check amp gauge (5) for proper operation, to adjust grinding pressure use the adjustment knob (6) to proper amperage draw.

When adjusting the amperage draw, maintain the following:

220V - 18 Amps MAX.

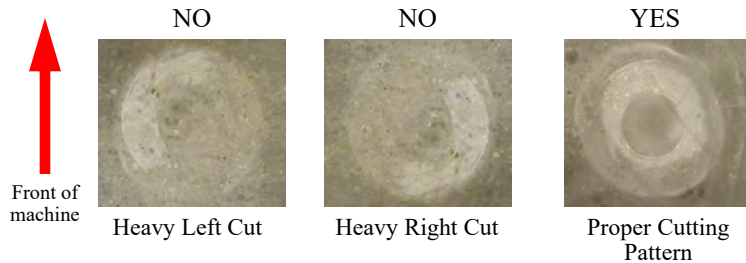
&

440V - 6 Amps MAX.



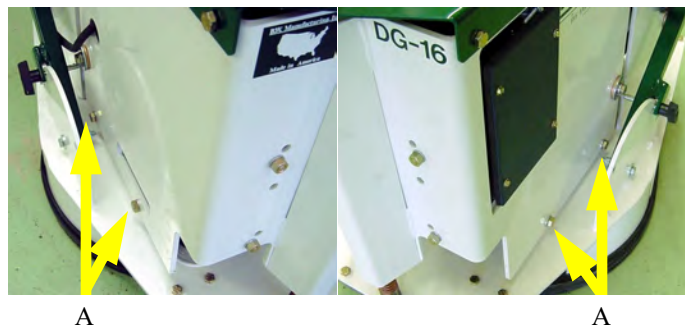
#### Generator Requirements for 220V version

15,000 Running Watts with a 50 Amp Breaker  
(special plug set up may be required)



#### Proper Cutting Pattern

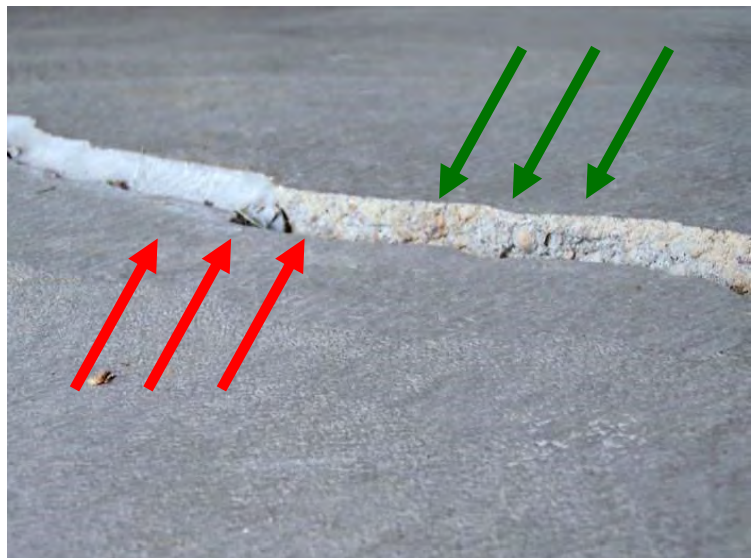
To achieve the proper cutting pattern you will need to adjust the machine with the four bolts (A).



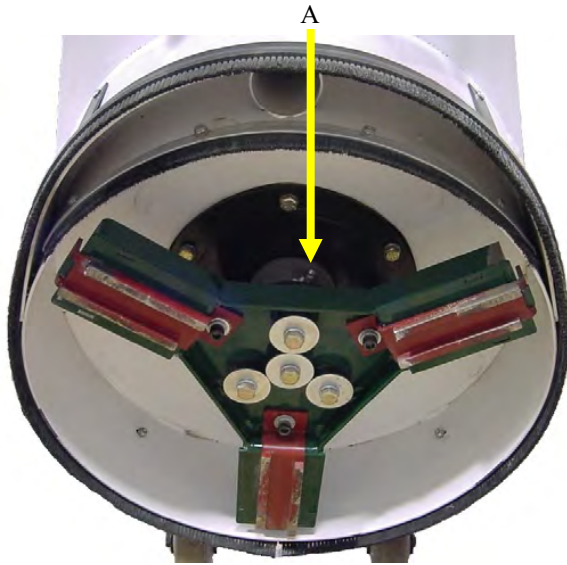
# DG-16

## DIAMOND GRINDER/POLISHER OPERATING & MAINTENANCE INSTRUCTIONS

When grinding offset cracks as seen in the Figures 1A & 1B you will want to grind from the high side down to the low side. Allowing the grinder to “roll” down (green arrows) over the crack. If you try to grind “up” (red arrows) a crack larger than 1/8” you can cause damage to the equipment and the diamond tooling.



# DG-16 DIAMOND GRINDER/POLISHER OPERATING & MAINTENANCE INSTRUCTIONS



**Greasing The Main Shaft Bearings**  
Grease main shaft bearings (A)  
every 8 hours of operation with high temp  
silicone grease.



**Brush Seal Adjustment**  
Loosen seal clamp ring (A) and lower  
seal (B) to make contact with the floor.



# DG-16 DIAMOND GRINDING & POLISHING INSTRUCTIONS

**Recommended procedure for heavy grinding to polish finish.**

<b><u>Diamond/Polishing Pad</u></b>	<b><u>DG-16-2 (220V)</u></b>	<b><u>DG-16-4 (440V)</u></b>
R-07-30 Diamond segment	12 to 15 amps	4 to 6 amps
R-07-80 Diamond segment	12 to 15 amps	4 to 6 amps
R-07-80 Diamond segment	5 to 6 amps	1 to 2 amps
R-07-140 Diamond segment	5 to 6 amps	1 to 2 amps

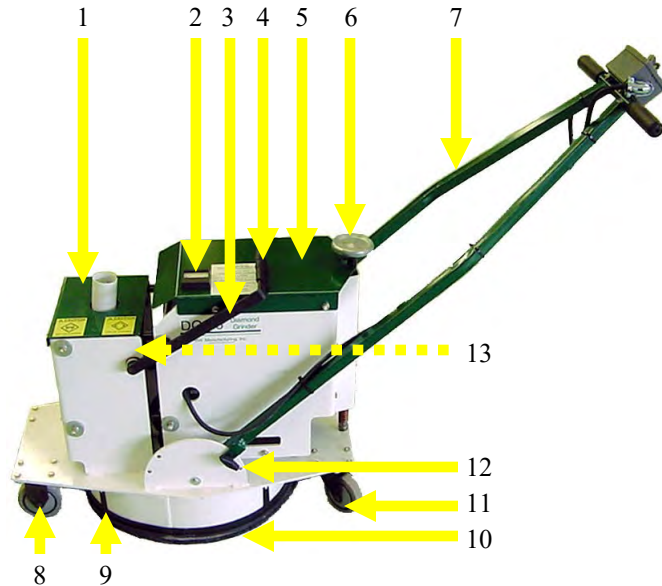
RP-50 Polishing pad	5 to 6 amps	1 to 2 amps
RP-120 Polishing pad	5 to 6 amps	1 to 2 amps
RP-220 Polishing Pad	5 to 6 amps	1 to 2 amps
RP-400 Polishing pad	5 to 6 amps	1 to 2 amps
RP-800 Polishing pad	5 to 6 amps	1 to 2 amps

## **Recommended steps for a polished floor (see chart above for more details)**

1. R-07-30 (Coarse Grit) RED
2. R-07-80 (Medium Grit) YELLOW
3. R-07-140 (Medium/Fine Grit) BLUE
4. RP-50 (50 Grit)
5. RP-120 (100 Grit)
6. RP-220 (200 Grit)
7. RP-400 (400 Grit)
8. RP-800 (800 Grit)

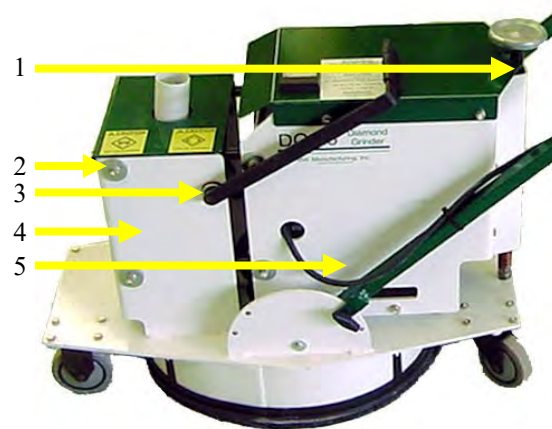
# DG-16 DIAMOND GRINDER/POLISHER PARTS

1. R-30-AS Frame Cover
2. G-108 Amp Gauge
3. R-25-AS Raise Handle
4. R-111 Raise Handle Grip
5. R-18-AS Motor Cover
6. S-067 Adjustment Knob
7. R-11-AS Handle
8. U-05 Stationary Caster
9. R-16-AS Brush Seal Clamp
10. U-04 Brush Seal
11. U-08 Swivel Caster
12. G-100 T-Handle
13. R-22 Raise Cam (*not shown*)



Dia. DG-16-1

1. R-26-AS Adjuster Tube Assembly
2. 3/8LDFW Fender Washer
3. C-1681 Bushing
4. R-08-AS Frame Assembly
5. R-10-AS Motor Mount

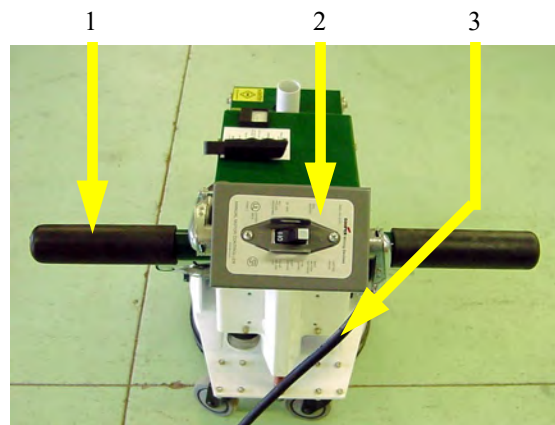


Dia. DG-16-2

1. A-8629 Handle Grip
2. A-8601 Switch & Box (220V)  
I-109 Switch & Box (460V)
3. A-8635 Cord (30 ft.) (220V)  
I-116 Cord (30 ft.) (460V)

Plug Ends (*not shown*)

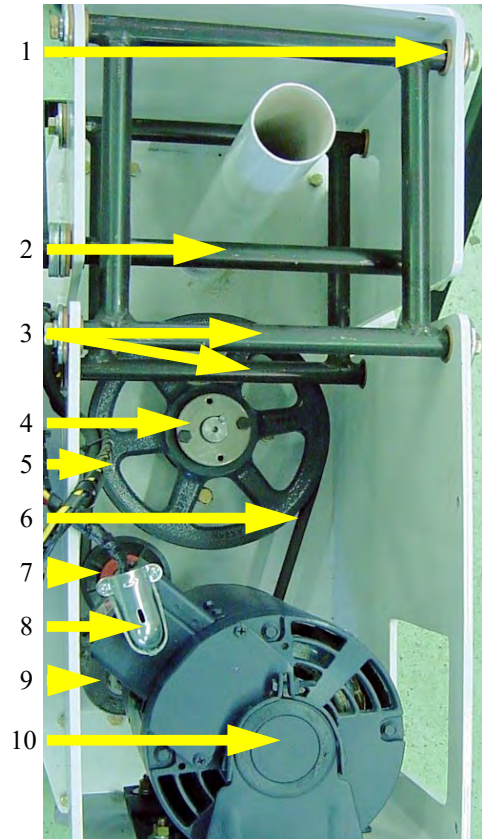
- A-8636 Plug (220V)  
A-8642 Plug (460V)



Dia. DG-16-3

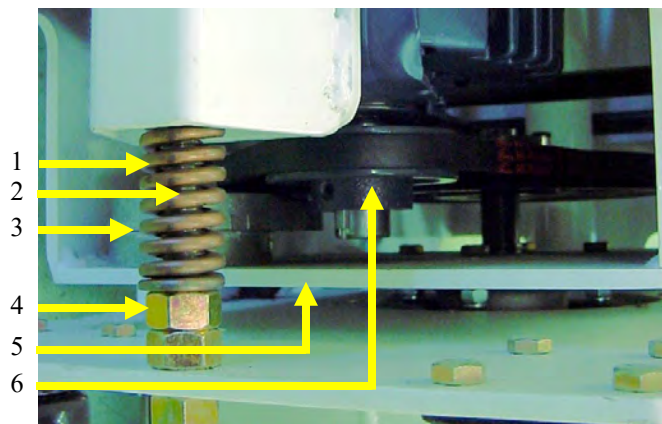
# DG-16 DIAMOND GRINDER/POLISHER PARTS

- |     |          |                         |
|-----|----------|-------------------------|
| 1.  | C-1681   | Bushing (8 per mach.)   |
| 2.  | R-25-AS  | Raise Handle            |
| 3.  | R-29-AS  | Pivot Arm               |
| 4.  | D-1295   | Taper Lock Bushing      |
| 5.  | R-118    | Sheave                  |
| 6.  | R-115    | Belt (ELECTRIC)         |
| 7.  | D-1300   | Idler Pulley (Electric) |
| 8.  | A-8637   | Conduit Elbow           |
| 9.  | D-1311   | Belt Tensioner          |
| 10. | A-8639-1 | Motor (460V)            |
|     | A-8607   | Motor (220V)            |



Dia. DG-16-4

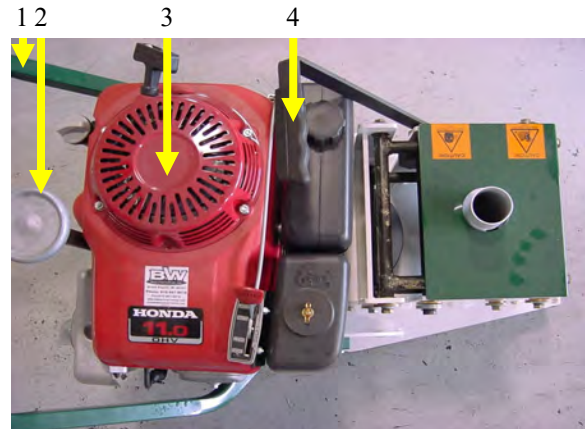
- |    |         |                      |
|----|---------|----------------------|
| 1. | R-114   | Down Pressure Spring |
| 2. | R-06    | Adjuster Rod         |
| 3. | D-1311  | Belt Tensioner       |
| 4. | R-124   | Adjuster Rod Nut     |
| 5. | R-23-AS | Hub Mount            |
| 6. | R-116   | Motor Sheave (460V)  |
|    | R-34-A  | Motor Sheave (220V)  |



Dia. DG-16-5

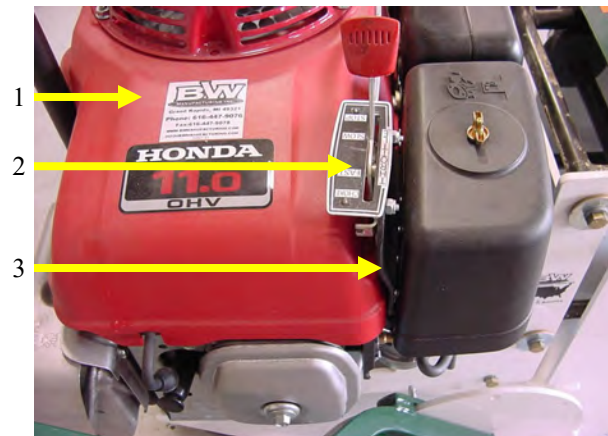
# DG-16 DIAMOND GRINDER/POLISHER PARTS

1. R-11-GAS Handle
2. S-067 Adjustment Knob
3. R-102 Gas Engine
4. R-25-AS Raise Handle



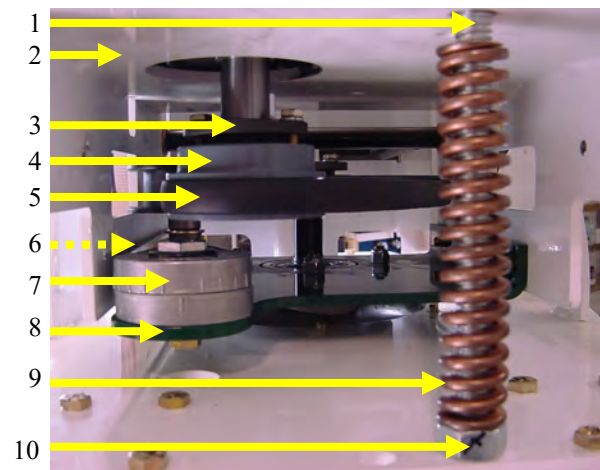
Dia. DG-16-6

1. R-102 Gas Engine
2. R-103 Throttle Cable
3. U-19-AS Throttle Mount



Dia. DG-16-7

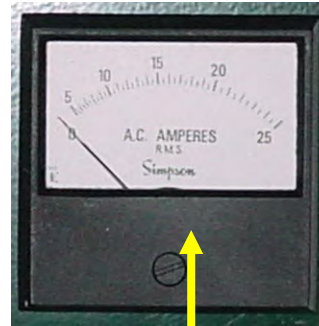
1. R-06 Adjuster Rod
2. R-10-GAS Motor Mount
3. Q-1202 Bushing (GAS)
4. R-105 Sheave (GAS)
5. R-107 Belt (GAS)
6. Q-1234 Idler Pulley (*not shown*) (GAS)
7. D-1311 Belt Tensioner
8. R-23-AS Hub Mount
9. R-114 Spring
10. R-124 Adjuster Rod Nut



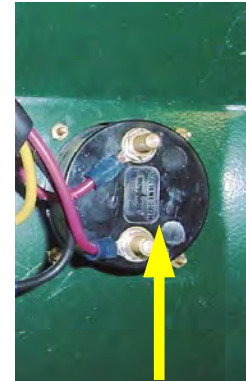
Dia. DG-16-8

# DG-16 DIAMOND GRINDER/POLISHER PARTS

1. G-108 Amp Gauge
2. G-108 Amp Gauge (underside)



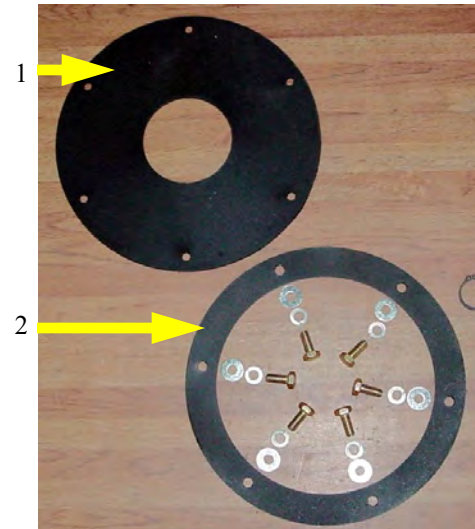
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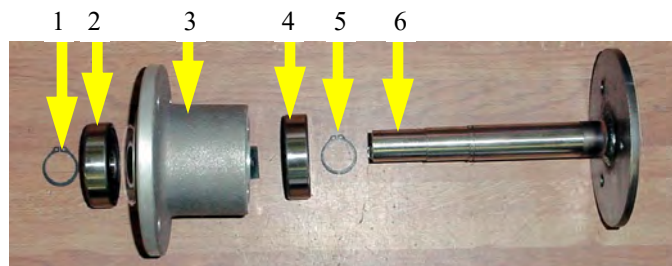
Dia. DG-16-9

1. R-27 Hub Seal
2. R-01-AS Hub Seal Ring



Dia. DG-16-10

1. D-1309 Snap Ring
2. D-1290 Bearing
3. R-36 Bearing Housing
4. D-1290 Bearing
5. D-1309 Snap Ring
6. R-03-AS Main Shaft



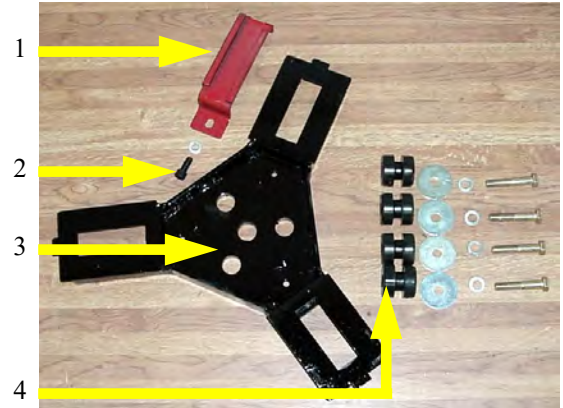
Dia. DG-16-11



# DG-16 DIAMOND GRINDER/POLISHER PARTS

Dia. DG-16-12

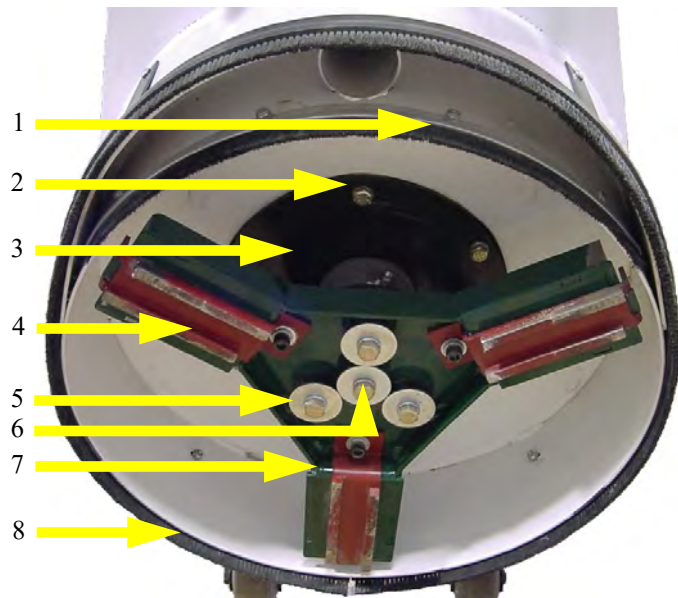
1. R-07-\_\_\_ Diamond Cutter (3 per set)  
(DG-16 requires 1 set)
2. 5/16-18X3/4 SHCS Diamond Mount Bolt
3. R-21-AS Diamond Mount Plate
4. R-112 Rubber Bushing (hard - blue & white dots) (center)
- R-119 Rubber Bushing (soft - red & white dots) (outside)



Dia. DG-16-13

1. U-04-AS Inner Brush
2. R-01-AS Hub Seal Ring
3. R-27 Hub Seal
4. R-07-\_\_\_ Diamond Cutter\*
5. R-119 Rubber Bushing
6. R-112 Rubber Bushing
7. R-21-AS Diamond Mount
8. U-09 Rubber Seal

\*part number is determined by grit see exploded view for description of grits





## Diamond Cutters - PCD Cutters - Carbide Scrapers

### Hard Concrete Diamond Cutters (Sold in sets of 3) US Patent# 7,997,960B2

<u>Part Number</u>	<u>Grit</u>	<u>Color</u>	
R-07-16S	Extra Coarse 16 Grit	Dark Green	
R-07-30S	Coarse 30 Grit	Red	
R-07-80S	Medium 80 Grit	Yellow	
R-07-140S	Medium/Fine 140 Grit	Blue	
R-07-180S	Fine 180 Grit	Black	

### Soft Concrete Diamond Cutters (Sold in sets of 3) US Patent# 7,997,960B2

<u>Part Number</u>	<u>Grit</u>	<u>Color</u>	
R-07-30HS	Coarse 30 Grit	Silver	
R-07-80HS	Medium 80 Grit	Orange	
R-07-140HS	Medium/Fine 140 Grit	Gold	
R-07-180HS	Fine 180 Grit	Dark Gray	

### PCD Cutters for heavy coating removal (Sold in sets of 3)



#### PCD Cutters

R-07-PCDFS Poly-Carbonate Diamond

**Minimal down pressure required when using PCD Cutters**  
**PCD Cutters carry NO WARRANTY**

### Carbide Scrapers & Mounts for carpet glue and mastic (Sold in sets of 3)



#### Carbide mount

R-07-CS Carbide mount  
R-07-CC-S Carbide segment  
R-08 Cap screw

†Production rates achieved will be affected by variables specific to each job site. These figures are not guarantees of performance. For proper operation, the shot blasting unit must be used in conjunction with an appropriate dust collector.



Always wear appropriate eye, ear and respiratory protection for the application, as specified by OSHA regulations and your employer. Never operate or maintain equipment before reading and understanding the instructions for operation and maintenance. Obey all safety signs and instructions while operating or maintaining equipment.

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**BW Manufacturing**

3706 Mill Creek Drive NE  
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# Polishing Pads & Accessories

## DG-16, DG-25 & DG-50 Grinding & Polishing Accessories

### Round Diamond Cutters for smoothing concrete prior to polishing



Round Diamond Cutters  
(Sold in sets of 6)  
Hard Concrete

R-07-D31S Coarse (RED)  
R-07-D81S Medium (YELLOW)  
R-07-D141S Med/Fine (BLUE)



Round Diamond Cutters  
(Sold in sets of 6)  
Soft Concrete

R-07-D81HS Medium (ORANGE)  
R-07-D141HS Med/Fine (GOLD)

### Double Polishing Pad & Round Diamond Mounts

(Sold in sets of 3)

R-07-P2AS 3" Mount Set



### Single Polishing Pad Mounts

(Sold in sets of 3)

R-07-PS 3" Mount Set



### 3" Polishing pads (Sold Individually)

RP-50 3" 50 Grit  
RP-120 3" 120 Grit  
RP-220 3" 220 Grit  
RP-400 3" 400 Grit  
RP-800 3" 800 Grit  
RP-1800 3" 1800 Grit  
RP-3500 3" 3500 Grit



### 3" Polishing Kit

(For heavy removal to a polish)

Part#	Includes
R-130	1ea. R-07-P2AS 1ea. R-07-D81S 1ea. R-07-D141S 6ea. RP-50 6ea. RP-120 6ea. RP-220 6ea. RP-400 6ea. RP-800



## 4.5" Hand Grinder Polishing Accessories

### 4.5" Backer Pad

R-132-A 4.5" Polishing Backer Pad (5/8-11 Thread)



### 4.5" Polishing Pads

R-133 4.5" 50 Grit  
R-134 4.5" 200 Grit  
R-135 4.5" 400 Grit

†Production rates achieved will be affected by variables specific to each job site. These figures are not guarantees of performance. For proper operation, the shot blasting unit must be used in conjunction with an appropriate dust collector.



Always wear appropriate eye, ear and respiratory protection for the application, as specified by OSHA regulations and your employer. Never operate or maintain equipment before reading and understanding the instructions for operation and maintenance. Obey all safety signs and instructions while operating or maintaining equipment.

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# DG-16

## DIAMOND GRINDER/POLISHER

### ACCESSORIES

<b>Hard Concrete Diamond Cutters</b> <b>(Sold in sets of 3) US Patent# 7,997,960B2</b>
---

<u>Part Number</u>	<u>Grit</u>	<u>Color</u>	
R-07-16S	Extra Coarse 16 Grit	Dark Green	
R-07-30S	Coarse 30 Grit	Red	
R-07-80S	Medium 80 Grit	Yellow	
R-07-140S	Medium/Fine 140 Grit	Blue	
R-07-180S	Fine 180 Grit	Black	

<b>Soft Concrete Diamond Cutters</b> <b>(Sold in sets of 3) US Patent# 7,997,960B2</b>
---

<u>Part Number</u>	<u>Grit</u>	<u>Color</u>	
R-07-30HS	Coarse 30 Grit	Silver	
R-07-80HS	Medium 80 Grit	Orange	
R-07-140HS	Medium/Fine 140 Grit	Gold	
R-07-180HS	Fine 180 Grit	Dark Gray	

<b>PCD Cutters for heavy coating removal</b> <b>(Sold in sets of 3)</b>
--



#### PCD Cutters

R-07-PCDFS    Poly-Carbonate Diamond

***Minimal down pressure required when using PCD Cutters***  
**PCD Cutters carry NO WARRANTY**

<b>Carbide Scrapers &amp; Mounts for carpet glue and mastic</b> <b>(Sold in sets of 3)</b>
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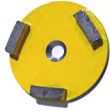
#### Carbide mount

R-07-CS	Carbide mount
R-07-CC-S	Carbide segment
R-08	Cap screw

# DG-16

## DIAMOND GRINDER/POLISHER ACCESSORIES

### Round Diamond Cutters for smoothing concrete prior to polishing



Round Diamond Cutters  
(Sold in sets of 6)  
Hard Concrete

R-07-D31S	Coarse (RED)
R-07-D81S	Medium (YELLOW)
R-07-D141S	Med/Fine (BLUE)

Round Diamond Cutters  
(Sold in sets of 6)  
Soft Concrete

R-07-D81HS	Medium (ORANGE)
R-07-D141HS	Med/Fine (GOLD)



### Double Polishing Pad & Round Diamond Mounts

(Sold in sets of 3)

R-07-P2AS 3" Mount Set



### Single Polishing Pad Mounts

(Sold in sets of 3)

R-07-PS 3" Mount Set



### 3" Polishing pads

(Sold Individually)

RP-50	3" 50 Grit
RP-120	3" 120 Grit
RP-220	3" 220 Grit
RP-400	3" 400 Grit
RP-800	3" 800 Grit
RP-1800	3" 1800 Grit
RP-3500	3" 3500 Grit

### 3" Polishing Kit

(For heavy removal to a polish)

Part#	Includes
R-130	1ea. R-07-P2AS
	1ea. R-07-D81S
	1ea. R-07-D141S
	6ea. RP-50
	6ea. RP-120
	6ea. RP-220
	6ea. RP-400
	6ea. RP-800



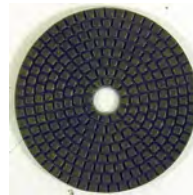
## 4.5" Hand Grinder Polishing Accessories



R-132-A

### 4.5" Backer Pad

4.5" Polishing Backer Pad (5/8-11 Thread)



### 4.5" Polishing Pads

R-133	4.5" 50 Grit
R-134	4.5" 200 Grit
R-135	4.5" 400 Grit