

SPECIFICATION NUMBER:

3HMH7\_TSREV3 PRODUCT DESCRIPTION: Blower, 12 VDC GGS MODEL NUMBER(s): 3HMH7

PROGRAM NAME: Small Blowers Phase 2

PROGRAM YEAR: 2010

1.0 BRAND: Dayton

| 2.0 PRODUCT DESCRIPTION (from SYSPRO): | Blower, 12 VDC; Forward Curve, Direct Drive |
|--|---|

| 3.0 PRODUCT PHOTO(S): | NOTE: Product images are shown for <u>display purposes only</u> and may not be representative of the final product. The product is to be built according to the specific requirements listed in Sections 4.0 through 11.0 below. |
|-----------------------|--|
|-----------------------|--|



#### 4.0 PRODUCT REQUIREMENTS:

4.1 Key Product Attributes (Special characteristics, features, design, style, etc. that the product must have. Examples: cord-reinforced rubber, NSD certified for use in wet locations, permanently lubricated bearings)
 12V DC

- DC Class B Insulation, Auto Thermal Protection
- 274.7 CFM (@ 0.000 In. SP)
- Forward Curve, Direct Drive
- Ball Bearings

| 4.2 Properties & Performance              | Requirement          |           |  |
|---|----------------------|-----------|--|
|   | All dimension tolera | ances:    |  |
|   | <1.00", ±1/16"       |           |  |
|   | ≥1.00", ±1/8"        |           |  |
|   |                      |           |  |
|   | All performance tol  | erances:  |  |
|   | ±10%                 |           |  |
| Wheel Diameter                            | 5.125"               |           |  |
| Wheel Width                               | 3"                   |           |  |
|   | @ 0.000 In. SP       | 274.7 CFM |  |
|   | @ 0.100 In. SP       | 245 CFM   |  |
| CEM @ Static Proceure (See figures below) | @ 0.200 In. SP       | 230 CFM   |  |
|   | @ 0.300 In. SP       | 210 CFM   |  |
| 00112                                     | @ 0.400 In. SP       | 183 CFM   |  |
|   | @ 0.500 In. SP       | 135 CFM   |  |
|   | @ 0.600 In. SP       | N/A       |  |
| Voltage                                   | 12V DC               |           |  |
| Amps                                      | 4.5                  |           |  |
| RPM                                       | 1700                 |           |  |
| Bearing Type                              | Ball                 |           |  |
| Motor Type                                | DC carbon brushes    | motor     |  |

Tech Spec Form v4

v4 ©Grainger International, Inc. 2008 This specification is based on the manufacturer's design and is to be used as a Quality Control document.

Page 1 of 9



3HMH7\_TSREV3 PRODUCT DESCRIPTION: Blower, 12 VDC

SPECIFICATION NUMBER:

3HMH7 PROGRAM NAME: Small Blowers Phase 2 PROGRAM YEAR: 2010

| Motor Enclosure         | Open         |
|-------------------------|--------------|
| Motor Insulation        | Class B      |
| Thermal Protection      | Auto         |
| Lead Length             | 13"          |
| Conduit Box             | No           |
| Max Ambient Temperature | 40°C / 104°F |
| Max Inlet Temperature   | 40°C / 104°F |
| Inlet Diameter          | 4.625"       |
| Outlet Height           | 3.625"       |
| Outlet Width            | 4.125"       |
| Overall Height          | 9.875"       |
| Overall Width           | 8.5"         |
| Overall Depth           | 8.875"       |
| Mounting                | All position |





| Α      | В        | С    | D     | E      | F      | J    | K  | L      | М      |
|--------|----------|------|-------|--------|--------|------|----|--------|--------|
| 8.875" | 10.4375" | 8.5" | 4.25" | 9.875" | 3.125" | 5.5" | 5" | 4.875" | 4.375" |

Page 2 of 9



SPECIFICATION NUMBER: 3HMH7\_TSREV3

PRODUCT DESCRIPTION: Blower, 12 VDC GGS MODEL NUMBER(s) 3HMH7

PROGRAM NAME: Small Blowers Phase 2
PROGRAM YEAR: 2010

Performance data:



# Dayton Electric Mfg. Co.

## Fan/Blower P-Q Performance Report

### AMCA STANDARD 210-85

| Test Unit: 3HMH7            | Date of Test: 2008/11/20             |
|-----------------------------|--------------------------------------|
| Outlet Dim.: 4.1 X 3.7 inch | Contract No.: 97222                  |
| Inlet Dim.: $\psi$ 4.6 inch | Wheel Dia.: 5.1*2.9inch              |
| Motor/Drive: 12VDC          | Test Standard: AMCA 210-85 Figure 12 |



Tech Spec Form v4 ©Grainger International, Inc. 2008 This specification is based on the manufacturer's design and is to be used as a Quality Control document. Page 3 of 9

GRAINGER GRAINGER INTERNATIONAL, INC. GLOBAL SOURCING DIVISION

### -- GGS TECHNICAL SPECIFICATION --

SPECIFICATION NUMBER: 3HMH7\_TSREV3

PRODUCT DESCRIPTION: Blower, 12 VDC GGS MODEL NUMBER(s): 3HMH7

PROGRAM NAME: Small Blowers Phase 2
PROGRAM YEAR: 2010

| 5   | avton | ® |
|---|-------|---|
| -   |       |   |
| Concession.   |       |   |
| Contraction of the second   |       |   |
| 100000000000000000000000000000000000000   |       |   |
|   |       |   |
|   |       |   |
|   |       |   |
| the second se |       |   |

# Dayton Electric Mfg. Co.

## Fan/Blower P-Q Performance Report AMCA STANDARD 210-85

| Test Unit: 3HMH7            | Date of Test: 2008/11/20             |
|-----------------------------|--------------------------------------|
| Outlet Dim.: 4.1 X 3.7 inch | Contract No.: 97222                  |
| Inlet Dim.: $\psi$ 4.6 inch | Wheel Dia.: 5.1*2.9inch              |
| Motor/Drive: 12VDC          | Test Standard: AMCA 210-85 Figure 12 |

| State                  | Item                 | P 1   | P 2   | P 3   | P 4   | P 5   | P 6   | Р7    |
|------------------------|----------------------|-------|-------|-------|-------|-------|-------|-------|
|                        | Ps7 , mmAq           | 0.10  | 8.10  | 12.30 | 14.50 | 15.70 | 17.10 | 19.70 |
|                        | Ps5 , mmAq           | 16.10 | 10.60 | 23.00 | 16.20 | 18.60 | 29.40 | 20.50 |
|                        | $\triangle P$ , mmAq | 0.30  | 8.70  | 13.10 | 15.70 | 16.80 | 18.20 | 20.90 |
| s u                    | Td5 , °C             | 23.8  | 23.8  | 23.8  | 23.8  | 23.8  | 23.8  | 23.8  |
| a t<br>i o             | Tdo, °C              | 23.9  | 23.9  | 23.9  | 23.9  | 23.9  | 23.9  | 23.9  |
| i t                    | Two , °C             | 16.5  | 16.5  | 16.5  | 16.5  | 16.5  | 16.5  | 16.5  |
| a l t<br>t d           | Pbo , mmHg           | 756.0 | 756.0 | 756.0 | 756.0 | 756.0 | 756.0 | 756.0 |
| e s l<br>C o           | Voltage              | 12.0  | 12.0  | 12.0  | 12.0  | 12.0  | 0.0   | 0.0   |
| t R                    | Amp                  | 4.300 | 3.400 | 2.800 | 2.100 | 1.600 | 0.000 | 0.800 |
| e<br>e                 | Power, Watt          | 52.00 | 41.00 | 33.00 | 25.00 | 19.00 | 12.00 | 9.00  |
| Т                      | Nozzle(L)            | 00001 | 00001 | 00000 | 00000 | 00000 | 00000 | 00000 |
|                        | Nozzle(R)            | 00000 | 00000 | 01110 | 01100 | 01010 | 00011 | 00000 |
|                        | RPM                  | 1677  | 1745  | 1793  | 1867  | 1915  | 1905  | 1901  |
| t<br>S                 | Qs , cfm             | 274.7 | 222.6 | 183.5 | 136.8 | 91.50 | 45.78 | 0.000 |
| r d<br>o n             | Ps , inWg            | 0.00  | 0.33  | 0.49  | 0.58  | 0.63  | 0.69  | 0.79  |
| t s<br>d a<br>t i      | Pt , inWg            | 0.42  | 0.60  | 0.68  | 0.69  | 0.68  | 0.70  | 0.79  |
| Resul<br>Stan<br>Condi | Power, Watt          | 53.12 | 41.89 | 33.71 | 25.54 | 19.41 | 12.26 | 9.19  |
|                        | Eff. <ηs> %          | 0.24  | 20.28 | 31.54 | 36.59 | 34.87 | 30.09 | 0.00  |
|                        | Eff. <ηt>%           | 25.63 | 37.41 | 43.46 | 43.11 | 37.44 | 30.60 | 0.00  |
|                        | Noise dBA            |       |       |       |       |       |       |       |

Note : For eplanation of Terminology, see AMCA Standard 210-85 ...

...Laboratory Methods of Testing Fans for Rating

Tech Spec Form v4

v4 ©Grainger International, Inc. 2008 This specification is based on the manufacturer's design and is to be used as a Quality Control document.



SPECIFICATION NUMBER:

3HMH7\_TSREV3 PRODUCT DESCRIPTION:

Blower, 12 VDC

GGS MODEL NUMBER(s): 3HMH7

PROGRAM NAME: Small Blowers Phase 2 PROGRAM YEAR: 2010

## MOTOR TEST REPORT

Date: 1.Customer: Product type: DC Motor Model No: 3HMH7 2.Electrical Specification: Direction RPM Output Volt Freq Pole Capacitor Load Remark Lead End DC 12V 2P 37 W CW 1640 3.RPM Test: Starting Capacitor Case Line Amb Main Aux RPM Volt Watt P.F S.D Current Current Current Current Volt Temp Temp **RPM** V W % V °C A A A A °C 1700 4.300 12 51.6 4. Temperature Rise Test: Coil T1 T2 RPM Remark  $\Delta T$ 12V 18.6 22.8 T1: motor case temp. before test 4.2 1700 T2: motor case temp. after 2 hours operation 5.Connection Diagram

| 4.3 Materials & Construction | Requirement  |
|------------------------------|--------------|
| Housing Material             | Rolled Steel |

| 4.4 Finish / Color   | Requirement  |
|----------------------|--|
|                      | a) Surface finishes must be uniform and continuous. The surface finish must not exhibit any visual defects such as |
|                      | blisters, rust, corrosion, scratches, peeling, bubbles, and/or cracking.   |
| All Surface Finishes | b) All exposed surfaces must be free of burrs and sharp edges.   |
|                      | c) All applied finishes must adhere to the surface and show no signs of delamination or peeling.                   |
|                      | d) All painted or coated surface finishes must be lead-free.   |
| Color                | Gray Enamel blower, black motor  |

| <b>4.5 Labels or Printing <u>Applied to Product</u></b> (Include all labels/graphics that are to be applied to the product.) | Requirement  |
|--|--|
| Appearance of all Labels and/or Printing   | All labels must be applied straight and even without any air-bubbles or creases. The labels must adhere uniformly to the surface. Any surface printing must be permanent and legible without pinholes, smearing, or other such defects that would render the print unreadable. |
| Nameplate  | Dayton nameplate label(s) with motor rating and connection diagram<br>applied to product   |
|  |  |
| 4.6 Ship Test Durability   | Requirement  |
| Product Packaging: Ship Test Integrity & Durability  | <ul> <li>All products must be securely packaged in such a manner as to pass<br/>the ISTA 1A or 1B (refer to <u>www.ista.org</u>) shock/drop test or other<br/>GGS Engineering defined tests as outlined in this specification. These</li> </ul>                                |

Tech Spec Form v4 ©Grainger International, Inc. 2008 This specification is based on the manufacturer's design and is to be used as a Quality Control document. Page 5 of 9

The information contained in this document may be privileged and confidential and protected from disclosure. You are hereby notified that any unauthorized dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone, delete any electronic copy and destroy any printed copy.

Prototype

| CDAINCED                     |            | GGS TECHNICAL SPECIFICATION                                   |   |   |  |
|------------------------------|------------|---|---|---|--|
|                              | SPECIFICAT | SPECIFICATION NUMBER:<br>3HMH7_TSREV3<br>PRODUCT DESCRIPTION: |   | GGS MODEL NUMBER(s):<br>3HMH7   |  |
| GRAINGER INTERNATIONAL. INC. | PRODUCT    |   |   | PROGRAM NAME: Small Blowers Phase 2   |  |
| GLOBAL SOURCING DIVISION     |            | PROGRAM YEAR: 2010  |   |   |  |
|                              |            |   |   |   |  |
|                              |            | b)<br>c)  | tests simulate repeated<br>and truck.<br>The product must be parany<br>any shipping damage th<br>humidity, vibration and/c<br>Upon receipt at GGS, al<br>components must remai<br>as when the unit was or | product handling and shipping by sea, air, rail<br>ckaged and protected as necessary to prevent<br>at may be incurred by abrasion, corrosion,<br>or shock.<br>I packaging must be intact and all product<br>n functional and firmly attached to the product<br>ginally built. There shall be no evidence of |  |

#### 5.0 ACCESSORIES to be INCLUDED with the PRODUCT:

| Description               | Quantity / Notes |
|---------------------------|------------------|
| OIPM or Instruction Sheet | 1 PER UNIT       |

#### 6.0 CERTIFICATION & COMPLIANCE:

| 6.1 Agency Certification (UL, CSA, NSF, ANSI, etc.)   | Requirement  |
|---|--|
|   | Proof of agency certification must be submitted to GGS Compliance Department prior to shipment. Email to <u>ggscompliance@grainger.com</u> . |
| UL Component Recognition  | N/A  |
| 6.2 Environmental Compliance  | Dequirement  |
| 6.2 Environmental Compliance  | Requirement  |
| Prior to shipment, supplier must notify the GGS Compliance<br>Department if the product contains lead or lead compounds,<br>nickel, mercury, cadmium, hexavalent chromium, poly vinyl<br>chloride (PVC), asbestos, brass, bronze, or any other controlled | Proof of compliance must be submitted to GGS Compliance<br>Department prior to shipment. Email to ggscompliance@grainger.com.                |

#### 

Refer to the GGS Supplier Handbook for specific information regarding bar code labels and packaging. The GGS Supplier Handbook can be found on the GGS Supplier Connect Website, located at www.supplierconnect.com/ggs/.

#### 7.0 BAR CODE LABELS:

substance.

| 7.1 Bar Code Label Data |                       |                         |                       |                         |                       |                         |  |
|-------------------------|-----------------------|-------------------------|-----------------------|-------------------------|-----------------------|-------------------------|--|
|                         | Master Pack           |                         | Inner Pack            |                         | Sell Pack             |                         |  |
| SKU                     | Human<br>Readable as: | Machine<br>Readable as: | Human<br>Readable as: | Machine<br>Readable as: | Human<br>Readable as: | Machine<br>Readable as: | PK (pack<br>quantity<br>designator –<br>see section<br>2.5 of the GGS<br>Supplier<br>Handbook) |
| 3HMH7                   | (1) 3HMH7             | 1 3HMH7                 |                       |                         |                       |                         |  |

| Bar Coc | Bar Code Label Requirements:   |  |  |  |  |
|---------|--|--|--|--|--|
| a).     | All Bar Codes must meet the requirements described in Section 2.5 of the GGS Supplier Handbook.  |  |  |  |  |
| b).     | If the GGS Model Number contains a suffix, the suffix must visually appear in the human readable area only and must not machine scan. Example: (8) 1A234B would machine scan as 8 1A234. |  |  |  |  |
| c).     | There must be only one space between the quantity () and the GGS Model Number. Examples: 100 1A234; 8 1A234  |  |  |  |  |
| d).     | All bar code labels must be approved by GGS prior to the first shipment.   |  |  |  |  |

### 8.0 CARTON/PACKAGING: GRAPHICS, MARKINGS & LABELS (Bar code label data is located in Section 7.0):

Tech Spec Form v4

v4 ©Grainger International, Inc. 2008 This specification is based on the manufacturer's design and is to be used as a Quality Control document.



#### -- GGS TECHNICAL SPECIFICATION --IGGS MODEL NUMBER(s):

SPECIFICATION NUMBER:

3HMH7\_TSREV3 PRODUCT DESCRIPTION: Blower, 12 VDC

PROGRAM NAME: Small Blowers Phase 2

3HMH7

PROGRAM YEAR: 2010

| 8.1 Carton Markings & Labels  |   |   |  |  |
|---|---|---|--|--|
| Marking Description   | Reference Section in the GGS Supplier<br>Handbook                               | Additional Information  |  |  |
| Master Pack Bar Code Specifications   | 2.5 Bar Code Specifications   | N/A   |  |  |
| Master Pack General Carton Markings<br>and Bar Code Label Requirements                    | 2.6 GGS Master Pack: General Carton<br>Markings and Bar Code Label Requirements | See Carton Marking Illustration Below   |  |  |
| Inner (Ship) Pack Bar Code<br>Specifications  | 2.5 Bar Code Specifications   | N/A   |  |  |
| Inner (Ship) Pack Bar Code Label<br>Requirements  | 2.7 GGS Inner (Ship) Pack: Bar Code Label Requirements                          | N/A   |  |  |
| DAYTON® Brand Carton Printing and Bar<br>Code Label Requirements for Sell (Unit)<br>Packs | 2.9 DAYTON® Brand Carton Printing and Bar Code Label Requirements               | Country of origin must appear.<br>Dayton carton labels must meet the criteria<br>outlined in the Dayton Graphic Identity<br>Standards Manual. |  |  |



CONTENTS: Blower, 12 VDC

GGS PO: (SUPPLIER TO DISPLAY THE GGS PURCHASE ORDER NUMBER)

CARTON \_\_\_\_\_ OF \_\_\_\_\_ (SUPPLIER TO PROVIDE AND DISPLAY THE NUMBER OF CARTONS)

**GROSS WEIGHT:** (SUPPLIER TO DISPLAY THE TOTAL WEIGHT OF CARTON AND CONTENTS IN US POUNDS)

MADE IN: (SUPPLER TO DISPLAY THE NAME OF THE COUNTRY WHERE THE PRODUCT WAS MADE)

Carton Marking Illustration



#### -- GGS TECHNICAL SPECIFICATION --GGS MODEL NUMBER(s)

3HMH7

SPECIFICATION NUMBER:

3HMH7\_TSREV3 PRODUCT DESCRIPTION: Blower, 12 VDC

PROGRAM NAME: Small Blowers Phase 2

PROGRAM YEAR: 2010

| Dayton <sup>®</sup> (1)3HMH7  |
|---|
| Blower<br>CFM: 274.7 Free Air<br>Volts: 12VDC   |
| Made in China<br>Manufactured for Dayton Electric Mfg. Co.,Niles, Illinois 60714 U.S.A.   |
| Soplador  |
| CFM : 274.7 de aire libre<br>Voltios : 12VDC  |
| Hecho en China<br>Fabricado para Dayton Electric Mfg. Co.,Niles, Illinois 60714 U.S.A.    |
| Soufflerie  |
| CFM : 274.7 d'air libre<br>Volts : 12VDC  |
| Fabriqué aux China<br>Fabriqué pour Dayton Electric Mfg. Co.,Niles, Illinois 60714 U.S.A. |
| 1.3HMH7   |

#### 9.0 PACKAGING:

| 9.1 Quantity In Each Package Type   |   | Refer to the Official Product Detail for package quantities.  |  |  |
|---|---|---|--|--|
|   |   |   |  |  |
| 9.2 Package Weight:   |   | Refer to the Official Product Detail for package weights. The tolerance for package weights is +/-5%. |  |  |
|   |   |   |  |  |
| 9.3 Special Packaging Requ  | irements:   |   |  |  |
|   |   |   |  |  |
| 9.4 General Packaging Requirements:   |   | Refer to the GGS Supplier Handbook Section 2.2  |  |  |
|   |   |   |  |  |
| <b>9.5 Skid / Pallet / Understructure Requirements:</b> Refer to the GGS Supplier Handbook Sections 2.2 and 5.2 |   | Refer to the GGS Supplier Handbook Sections 2.2 and 5.2   |  |  |
|   |   |   |  |  |
| 9.6 Packaging Approval:   | <b>9.6 Packaging Approval:</b> Supplier must submit a sample of all packaging including carton printing and bar code labels to GGS Engineering for approval prior to the first shipment. Refer to the GGS Supplier Handbook Section 2.4 |   |  |  |

#### **10.0 QUALITY AND INSPECTION REQUIREMENTS:**

Prior to packaging, each unit shall be inspected and tested by the manufacturer for function, appearance and adherence to these a) specifications. The unit must function properly in accordance with the procedures and operations cited within the Operator's Manual (OIPM) and must be free of dirt, dust, rust, corrosion, dents, and/or scratches.

If this is the first shipment of this product to GGS, GGS Engineering must approve production samples before the product is shipped to b) GGS. Refer to the GGS Supplier Handbook Section 7.0.

#### **11.0 IMPORTANT NOTES AND CONDITIONS:**

- After approval of the initial Production Sample, SUPPLIERS MUST COMMUNICATE ANY AND ALL PROPOSED PRODUCT or a) FACTORY CHANGES TO GGS ENGINEERING PRIOR TO MAKING ANY CHANGES TO THE PRODUCT. No product changes can be made or accepted without prior communication with GGS Engineering.
- Refer to the GGS Supplier Handbook for additional information regarding packaging, shipping, carton markings, bar-code labels, b) quality and GGS contact information. Contact your local GGS Procurement representative to obtain a copy of the GGS Supplier Handbook.

| 12.0 REVISION HISTORY: |                         |                    |                     |
|------------------------|-------------------------|--------------------|---------------------|
|                        |                         |                    |                     |
| Rev. No. Rev. Date     | Description of Revision | Revised By & Title | Approved By & Title |

| Rev. No. | Rev. Date | Description of Revision | Revised By & Litle | Approved By & Litle |
|----------|-----------|-------------------------|--------------------|---------------------|
|          |           |                         |                    |                     |

Tech Spec Form v4

©Grainger International, Inc. 2008 This specification is based on the manufacturer's design and is to be used as a Quality Control document. Page 8 of 9



SPECIFICATION NUMBER:

Blower, 12 VDC

3HMH7\_TSREV3 PRODUCT DESCRIPTION:

PROGRAM NAME: Small Blowers Phase 2

3HMH7

GGS MODEL NUMBER(s):

PROGRAM YEAR: 2010

| 0 | 1/15/09  | Initial Release of Document  | Adam Hoskinson<br>Product Engineer | Nate Lucas<br>CEM |
|---|----------|--|------------------------------------|-------------------|
| 1 | 3/5/09   | UL Component Recognition not required per PM                                       | Adam Hoskinson<br>Product Engineer |                   |
| 2 | 5/21/09  | No conduit box on item;<br>Motor color is black;<br>Changed amps from 4.3A to 4.5A | Adam Hoskinson<br>Product Engineer |                   |
| 3 | 03/31/11 | Added motor type   | J. Kelpsch                         |                   |