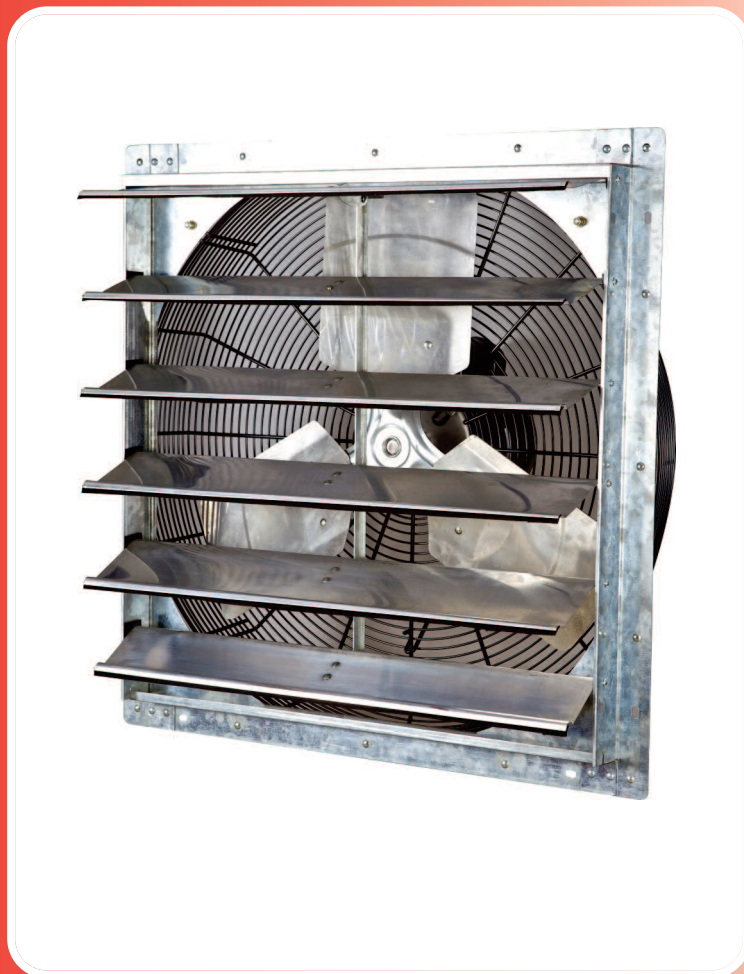


<sup>®</sup>  
**Dayton**



## **Utility Shutter- Mounted Exhaust Fans**

**Models: 1HKL9C, 1HLA1C, 1HLA2C, 1HLA3C,  
1HLA4C, 1HLA5C, 1HLA7C, 1HLA8C, 1HLA9C,  
1HLB1C, 1HLB2C, 1HLB3C, 1HLB4C, 1HLB5C  
and 1HLB6C**

®  
**Dayton**

**PLEASE READ AND SAVE  
THESE INSTRUCTIONS.  
READ CAREFULLY  
BEFORE ATTEMPTING  
TO ASSEMBLE, INSTALL,  
OPERATE OR MAINTAIN THE  
PRODUCT DESCRIBED.**

**PROTECT YOURSELF AND  
OTHERS BY OBSERVING ALL  
SAFETY INFORMATION. FAILURE  
TO COMPLY WITH INSTRUCTIONS  
COULD RESULT IN PERSONAL  
INJURY AND/OR PROPERTY  
DAMAGE! RETAIN INSTRUCTIONS  
FOR FUTURE REFERENCE.**

**PLEASE REFER TO BACK COVER  
FOR INFORMATION REGARDING  
DAYTON'S WARRANTY  
AND OTHER IMPORTANT  
INFORMATION.**

**Model #:** \_\_\_\_\_

**Serial #:** \_\_\_\_\_

**Purch. Date:** \_\_\_\_\_

*Form 5S7662 / Printed in China*

*PUC200 Version 1 06/2015*

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**BEFORE YOU BEGIN****⚠ WARNING**

**Installation, troubleshooting and parts replacement are to be performed only by qualified personnel.**

**Electrical Requirements:**

- The motor amperage and voltage ratings must be checked for compatibility to supply voltage prior to final electrical connection. Please refer to the motor's nameplate label.
- Wiring must conform to local and national codes.

**Tools / Materials Needed:**

- Mounting Fasteners (8)
- Sealant or Caulk
- Regular Screw Driver Set

**Recommended Accessories:**

- Speed control (48C172) for 1HKL9C, 1HLA1C, 1HLA2C, 1HLA3C, 1HLA4C, 1HLA9C & 1HLB3C. 2 - Speed Fan Switch(1DGZ9) for 1HLB1C.

**UNPACKING****Contents:**

- Dayton® Utility Shutter-Mounted Exhaust Fans(1)
- Operating Instructions and Parts Manual (1)

**Inspect:**

- After unpacking unit, inspect carefully for any damage that may have occurred during transit. Check for loose, missing, or damaged parts. Shipping damage claim must be filed with carrier.
- Check all bolts, screws, set-screws, etc. for looseness that may have occurred during transit. Retighten as required. Rotate propeller by hand to be sure it turns freely.



- See General Safety Instructions on page 4, and Cautions and Warnings as shown.

## GENERAL SAFETY INSTRUCTIONS

Fans are UL/cUL Listed, Standard 705.

**⚠ DANGER**

***Do not depend on any switch as the sole means of disconnecting power when installing or servicing the fan.***

***Always disconnect, lock-out and tag-out power source before installing or servicing.***

***Failure to disconnect power source can result in fire, shock or serious injury.***

***Motor will restart without warning after thermal protector trips. Do not touch operating motor, it may be hot enough to cause injury.***

**⚠ DANGER**

***Do not place body parts or objects in fan or motor openings while motor is connected to the power source.***

**⚠ CAUTION**

***All electrical connections should be made by a qualified electrician.***

**⚠ WARNING**

***These utility exhaust fans are for general purpose exhaust applications only. Do not use these exhaust fans in explosive or corrosive***

***atmospheres.***

1. Follow all local electrical and safety codes in the United States and Canada, as well as the National Electrical Code (NEC) and the Occupational Safety and Health Act (OSHA) in the United States, and the Canadian Electric Code (CEC) in Canada.
2. Always disconnect power source before working on or near a motor or its connected load.
3. Protect the power cable from coming in contact with sharp objects.
4. Do not kink or create tight bends in the power cable and never allow the cable to come in contact with oil, grease, hot surfaces, or chemicals.
5. Make certain that the power source conforms to the requirements of your specific exhaust fan model.
6. The fan frame and motor must be electrically grounded to a suitable electrical ground, such as a grounded water pipe or ground wire system.

**⚠ CAUTION**

***To reduce the risk of injury to persons, observe the following:***

***In United States to reduce the risk of injury to persons, OSHA complying guards are required when fan is installed within 7 feet of floor or working level.***

***In Canada to reduce the risk of injury to persons, CSA complying guards are required when fan is installed below 2.5 meters (8.2 feet) above floor or grade level.***

## GENERAL SPECIFICATIONS

Power source	115V, 60Hz
Mounting Position	Vertical
Frame Material	Galvanized Steel
Shutter Blade Material	Aluminum Alloy
Propeller Material	Aluminum Alloy and Galvanized Steel
Agency Compliance	UL/cUL 705

### Dimensions(Inches)

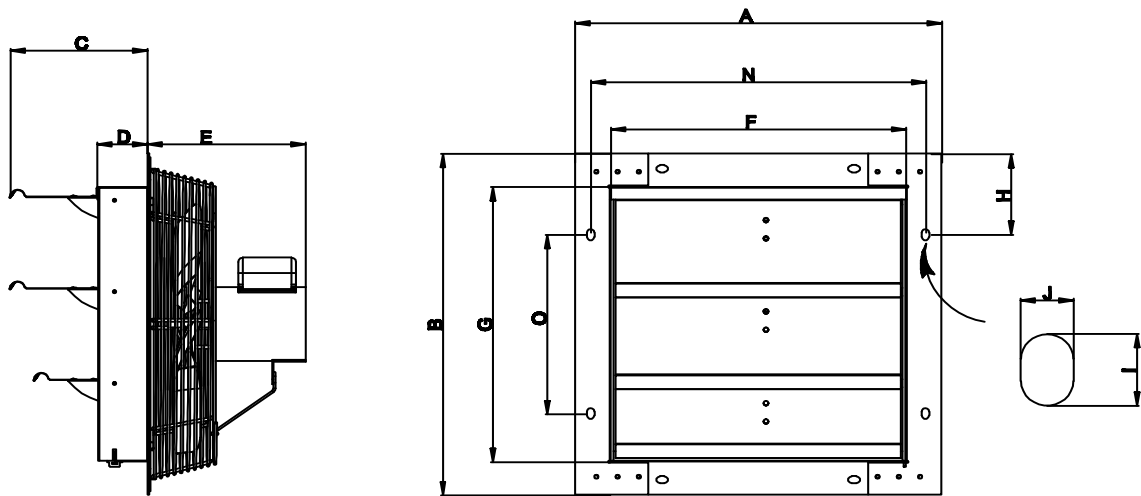


Figure 1

MODEL	Prop. Dia.	A	B	C	D	E	N	G	F	O	H	J	I	Suggested wall opening (Sq)
1HKL9C	7"	11"	11"	5 3/4"	2"	5 7/8"	9 21/32"	8 1/8"	8 1/8"	4 1/16"	3 17/32"	9/32"	1/2"	8 1/2"
1HLA1C	10"	13"	13"	4 17/32"	2"	5 7/8"	11 21/32"	10 1/8"	10 1/8"	6"	3 17/32"	9/32"	1/2"	10 1/2"
1HLA2C	12"	15"	15"	5 3/4"	2"	6 5/32"	13 5/8"	12 1/8"	12 1/8"	8"	3 1/2"	9/32"	1/2"	13"
1HLA3C	16"	18 29/32"	18 29/32"	5 3/4"	2"	7 7/8"	17 3/4"	16"	16"	11 29/32"	3 17/32"	9/32"	1/2"	17"
1HLA4C	18"	21"	21"	5 3/4"	2"	8 3/4"	19 11/16"	18"	18"	14"	3 17/32"	9/32"	1/2"	19"
1HLA5C	18"	21"	21"	5 3/4"	2"	10 13/16"	19 11/16"	18"	18"	14"	3 17/32"	9/32"	1/2"	19"
1HLA7C	20"	23"	23"	5 3/4"	2"	11"	21 25/32"	20"	20"	16"	3 17/32"	9/32"	1/2"	21"
1HLA8C	20"	23"	23"	5 3/4"	2"	11"	21 25/32"	20"	20"	16"	3 17/32"	9/32"	1/2"	21"
1HLA9C	20"	23"	23"	5 3/4"	2"	11"	21 25/32"	20"	20"	16"	3 17/32"	9/32"	1/2"	21"
1HLB1C	24"	27"	27"	5 3/4"	2"	11 1/2"	25 21/32"	24 1/8"	24 1/8"	20 1/32"	3 17/32"	9/32"	1/2"	25"
1HLB2C	24"	27"	27"	5 3/4"	2"	11"	25 21/32"	24 1/8"	24 1/8"	20 1/32"	3 17/32"	9/32"	1/2"	25"
1HLB3C	24"	27"	27"	5 3/4"	2"	11"	25 21/32"	24 1/8"	24 1/8"	20 1/32"	3 17/32"	9/32"	1/2"	25"
1HLB4C	24"	27"	27"	5 3/4"	2"	11 1/2"	25 21/32"	24 1/8"	24 1/8"	20 1/32"	3 17/32"	9/32"	1/2"	25"
1HLB5C	30"	33"	33"	5 3/4"	3"	13 3/32"	31 5/8"	30 1/8"	30 1/8"	26"	3 17/32"	9/32"	1/2"	31"
1HLB6C	36"	39"	39"	5 3/4"	3"	13 11/16"	37 21/32"	36 5/32"	36 5/32"	32"	3 17/32"	9/32"	1/2"	37"

## PERFORMANCE

MODEL	Prop. Dia.	Nom. HP	Amps	Nom. RPM	Bearing Type	Sones @ 0.0" SP @ 5'	CFM Air Delivery @ Static Pressure Shown			Recommended Speed Control
							0.00"	0.125"	0.25"	
1HKL9C	7"	1/25	0.40	1550	Sleeve	5.37	242	N/A	N/A	48C172
1HLA1C	10"	1/25	0.55	1550	Sleeve	6.19	600	354	N/A	48C172
1HLA2C	12"	1/20	0.60	1625	Sleeve	5.9	772	418	N/A	48C172
1HLA3C	16"	1/20	0.85	1550	Ball	6.39	1200	416	180	48C172
1HLA4C	18"	1/15	0.85	1075	Ball	7.4	1736	1108	N/A	48C172
1HLA5C	18"	1/4	3.50	1725	Ball	7.28	3852	2836	2172	
1HLA7C	20"	1/3	4.00	1725	Ball	8.1	4700	3068	2388	
1HLA8C	20"	1/4	3.50	1725	Ball	7.01	3948	2444	1732	
1HLA9C	20"	1/4	2.75	1075	Ball	6.67	3368	2312	1868	48C172
1HLB1C	24"	1/3	3.30	1075/945	Ball	7.42/6.91	4608/3483	3524/1800	3020/0	1DGZ9
1HLB2C	24"	1/4	2.75	1075	Ball	7.0	4244	2676	2220	
1HLB3C	24"	1/4	2.75	1075	Ball	7.0	4244	2676	2220	48C172
1HLB4C	24"	1/3	3.30	1075	Ball	7.42	4600	3040	2260	
1HLB5C	30"	1/3	3.30	825	Ball	7.01	5088	3432	1552	
1HLB6C	36"	1/2	6.00	825	Ball	8.24	6128	4380	2620	

## INSTALLATION INSTRUCTION

1. The unit should be securely mounted in a rigid framework.

**NOTE:** Allowing the fan frame to flex or move will result in undue vibrations and possible premature motor, propeller, or shutter failure.

2. Install any auxiliary components such as thermostats, switches, or speed controls.
3. Connect power to the motor, using an approved wiring method.

Refer to the following wiring diagrams: Figures 2 through 4.

### **WARNING**

*Fan frame and motor must be securely and adequately grounded to a suitable electrical ground, such as a ground water pipe or ground wiring system.*

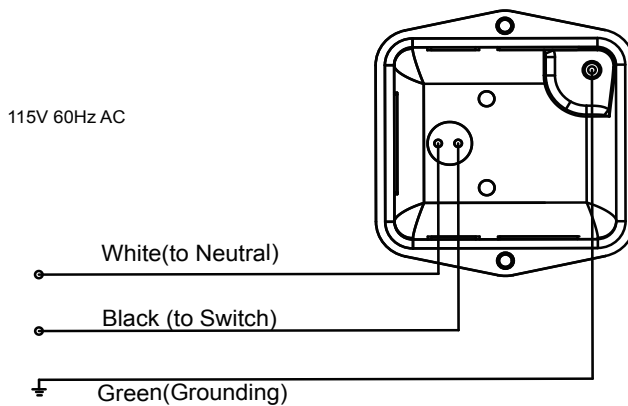


Figure 2 - Wiring Diagram Single speed. 115 volts connection.

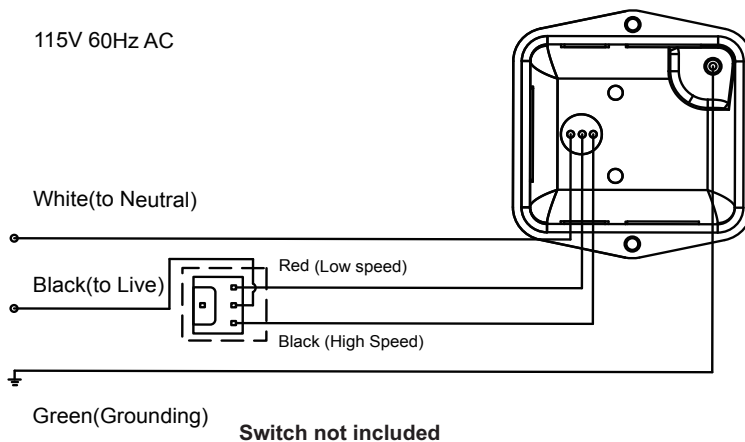


Figure 3 - Wiring Diagram Two speed. 115 volts connection.

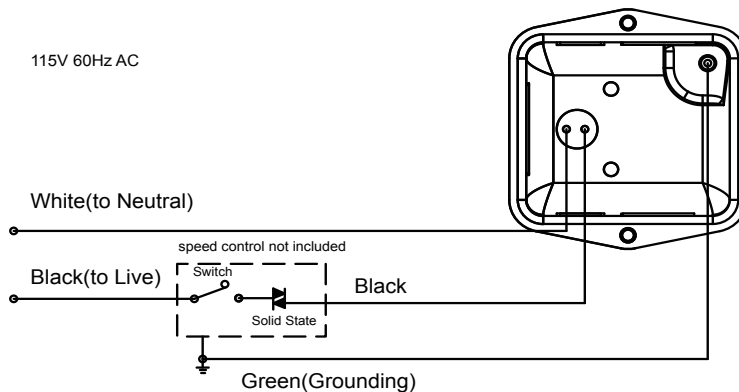


Figure 4 - Wiring Diagram - Speed Controllable . 115 volts connection.

**OPERATION**

1. Keep the area free of objects that could impede air flow on both the intake and exhaust side of fan.
2. For proper exhaust operation, a window, door, or louver should be opened for fresh air intake on the opposite side of the area to be ventilated.
3. Turn the fan ON, the shutter will open automatically. When the unit is turned OFF, the shutter will close.
4. Speed controllable units are designed to operate at a minimum of fifty percent line voltage.

**MAINTENANCE**

1. Disconnect power source before servicing.
2. Periodically clean the propeller, guard, motor, and shutter of any accumulated dirt.

**⚠ DANGER**

***Do not depend on any switch as sole means of disconnecting power when installing or servicing. If power disconnect is not visible utilize OSHA Lock out/Tag out procedure.***

***Failure to do so may result in fatal electrical shock.***

***Employ proper lock-out/tag-out procedures when performing maintenance.***

**REPAIR PARTS AND DISASSEMBLY**

1. Disconnect power before servicing.
2. Refer to illustration of parts placement (Figure 5).
3. Remove the four screws holding the guard to the venturi panel. Remove the guard/motor/propeller assembly.
4. Loosen the set screw on propeller hub and remove the propeller.



## TROUBLESHOOTING GUIDE

Symptom	Possible Cause(s)	Corrective Action
Excessive noise	<ol style="list-style-type: none"> <li>1. Dry motor bearings</li> <li>2. Loose propeller</li> <li>3. Bent or damaged propeller</li> <li>4. Loose guard assembly or motor fasteners.</li> </ol>	<ol style="list-style-type: none"> <li>1. Relubricate motor bearings as per instructions or replace motor.</li> <li>2. Tighten set screws on propeller hub.</li> <li>3. Replace propeller</li> <li>4. Tighten as required to 15-20 inch lbs.</li> </ol>
Fan inoperative	<ol style="list-style-type: none"> <li>1. Blown fuse or open circuit breaker</li> <li>2. Defective motor</li> <li>3. Speed control off or too low or inoperative</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace fuse or reset circuit breaker</li> <li>2. Replace motor (see Figure 5)</li> <li>3. Turn controller on. if not working replace Speed controller</li> </ol>
Insufficient air flow	<ol style="list-style-type: none"> <li>1. Blocked intake or exhaust opening</li> <li>2. Low voltage</li> <li>3. Speed control set too low</li> </ol>	<ol style="list-style-type: none"> <li>1. Clear intake and exhaust openings of any obstructions. Clean, motor, guard, propeller, and shutter assembly. Increase fresh air intake opening size.</li> <li>2. Determine cause and correct</li> <li>3. Increase speed with controller</li> </ol>