

SMALL WALL PROP

(Models SWP08 through SWP20)

OPERATION & MAINTENANCE MANUAL



PENNBARRY™



IMPORTANT! Read before proceeding!

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.

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INTRODUCTION

Storage

Long-term storage requires special attention. Units should be stored on a level, solid surface, preferably indoors. If outside storage is necessary, protect the units against moisture and dirt by encasing the cartons in plastic or some similar weatherproof material.

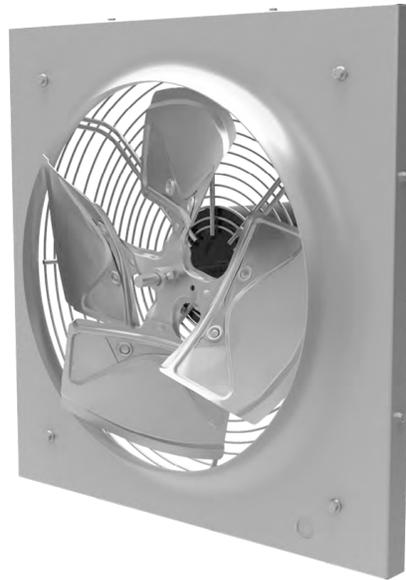
Unpacking

Place carton in an upright position and remove staples or use a sharp (knife edge) tool to CAREFULLY cut or scribe the sealing tape on both sides at the top of the carton. Open carton flaps. Remove any cardboard and wooden filler pieces, as well as loose components or accessories shipped with the unit.

Carefully remove the unit from the carton. Inspect the unit for any damage that may have occurred during transit and check for loose, missing or damaged parts.

Receiving and Handling

PennBarry fans are carefully inspected before leaving the factory. When the unit is received, inspect the carton for any signs of tampering. Inspect the unit for any damage that may have occurred during transit and check for loose, missing or damaged parts. Mishandled units can void the warranty provisions. PennBarry is not responsible for damages incurred during shipment.



INSTALLATION



For general ventilating use only, do not use to exhaust hazardous or explosive materials and vapors.

Any accessories which have been provided “knocked-down” can be assembled per illustrations provided (pages 9 - 11).

Remove internal protective shipping trays and fillers. Check for and remove any loose hardware or particles from the inside of the fan housing. Disconnect motor cord and plug from internal terminal box and receptacle.

Avoid severe jarring and/or dropping. Handle units with care to prevent damage to components or special finishes.

LOCATION AND GUARDS

All fans have moving parts which require guarding in the same way as other moving machinery. Where the fan is accessible to untrained personnel or the general public, use maximum safety guards, even at the cost of some performance. Unprotected fans located less than 7' above the floor require guarding as specified in the Occupational Safety and Health Act (OSHA). UL listed fans, to maintain their personal safety listing, must be installed not less than 10 feet above the floor. PennBarry recommends the use of guards on all exposed non-ducted fans.

INSTALLING THE PANEL FAN

Wall openings must be square and must be minimum 1/2" greater than the outside dimension of the panel fan housing, when recessed within the wall. Level and securely anchor the fan to the wall through holes pre-drilled in the mounting flange. Use the type, size and number of fasteners suitable to the unit size and wall construction. If the contractor removes ventilator parts, reassemble by placing all spacers, washers, nuts, bolts, fasteners and components exactly as they were prior to removal. Tighten and secure all fasteners.



Before attempting any repair or installation work, be certain that all power to the motor and electrical accessories are turned off and locked in off position.

ELECTRICAL CONNECTIONS

1. Connect Motor per nameplate to correct power supply.
2. Install all wiring, protection and grounding in accordance with national electrical code and local requirements.
3. Follow all local electrical and safety codes, as well as the National Electrical Code (NEC) and the Occupational Safety and Health Act (OSHA).
4. In order to prevent motor failure when speed controller is used unit must be started on high speed before turning to low speed.



Follow all local electrical, safety and building codes, the provisions of the National Electrical Code and the Occupational Safety and Health Act.

POSITIONING AND RUNNING POWER LINES

Power is normally brought from within the building through proper conduit lines to the wall opening, and in turn to the (disconnect switch, if furnished) motor. When power lines are brought up to the unit, provide a generous amount of slack to allow for motor adjustments and to permit movement of motor for belt tension adjustments. Ground motor adequately and securely. Protect power lines from sharp objects. Do not kink power line or permit it to contact hot surfaces, chemicals, grease or oil. Use only UL recognized electrical parts, rated for proper voltage, load and environment.

INSTALLATION

Figure 1: Internal Electrical Connections 120 V motor

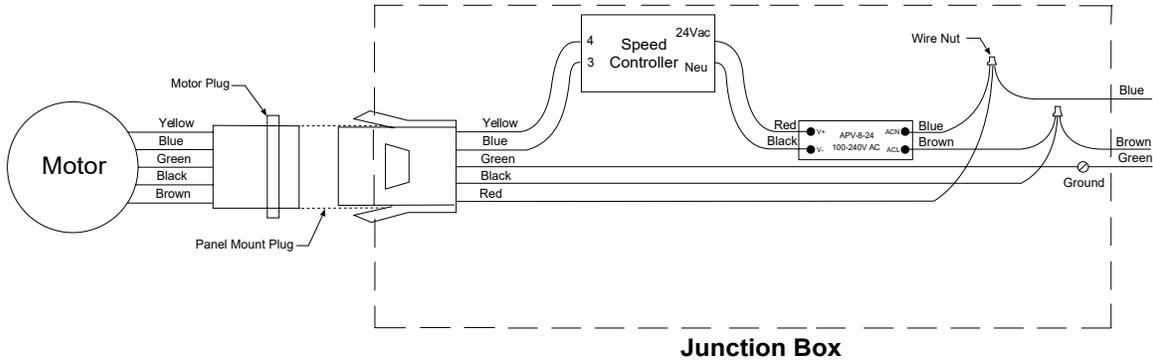
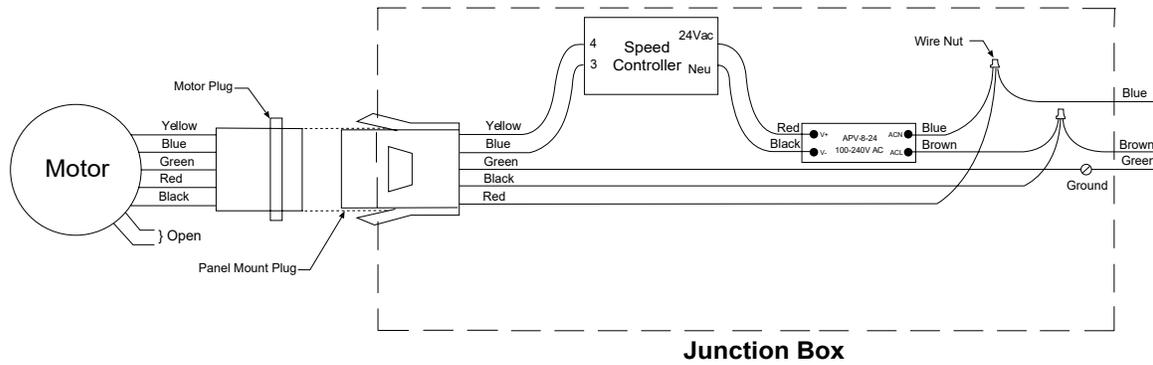
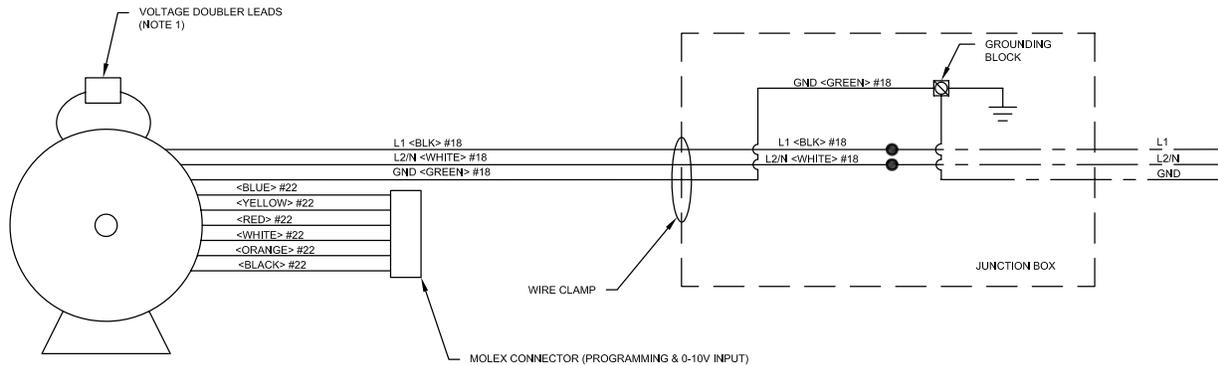


Figure 2: Internal Electrical Connections 208-230/277 V motor



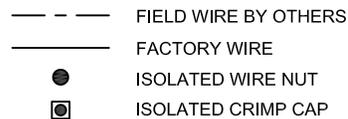
INSTALLATION

ODP motors 120v/208v-230v/277v single phase

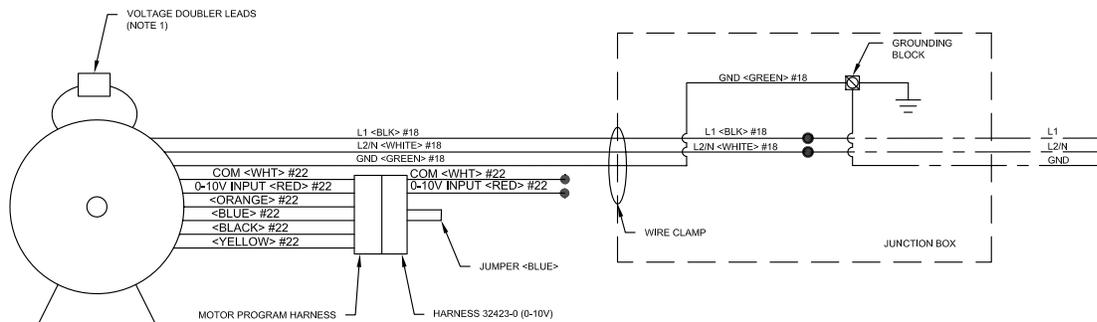


NOTES:

1. VOLTAGE DOUBLER LEADS TO BE CONNECTED ONLY FOR 120V. MUST BE DISCONNECTED WHEN 208-277V IS USED.

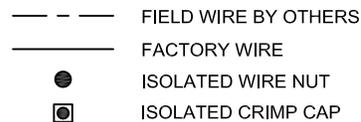


ODP motors 120v/208v-230v/277v single phase with external signal harness



NOTES:

1. VOLTAGE DOUBLER LEADS TO BE CONNECTED ONLY FOR 120V. MUST BE DISCONNECTED WHEN 208-277V IS USED.



INSTALLING THE WALL SHUTTER

When required, level and fasten the wall shutter through the mounting holes provided in the shutter mounting flange. Consult Figure 1 for the proper mounting arrangements. Secure the shutter to the wall opening without undue twisting which may distort the frame. Check for free operation. If shutters are motor operated type, ascertain the proper voltage is present on motor terminals.

The fan is now ready for service.

This drawing illustrates our understanding of order requirements. When approved, it represents details for fabrication, as such, PennBarry will not be responsible for revisions in the field or other changes after release for fabrication. Published and protected by PennBarry, Plano, TX. All rights reserved. May not be reproduced partially or in full without permission from the publisher. No rights conveyed to manufacture partially or in full, use or sell either the method of construction represented or any invention in any way related thereto.

INSTALLATION

Minimum Clearance between Fan and Shutter – Figure 4

Model	Dimension(D)						
	8	10	12	14	16	18	20
SWP	6	6	6	6	6	6	6

Exhaust Application

Figure 3: Typical Wall Sleeve Installation

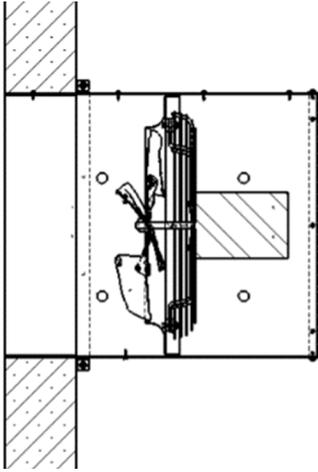


Figure 4: Typical Wall Sleeve and Damper Installation

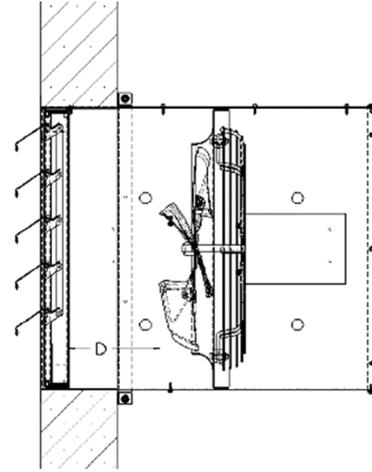
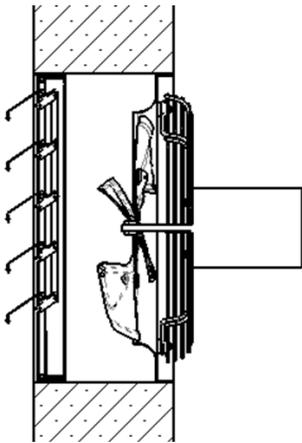
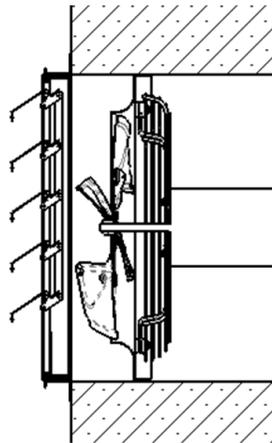


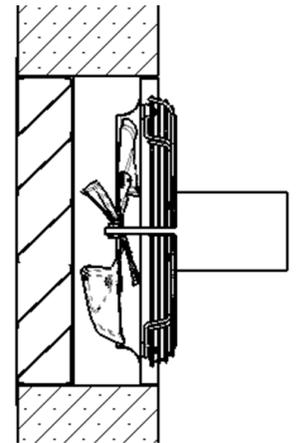
Figure 5: Other Typical Mounting Arrangements



Wall Shutter Recess Mounting



Wall Shutter Surface Mounting



Louver

INSTALLATION

Minimum Clearance between Fan and Shutter – Figure 4

Model	Dimension(D)						
	8	10	12	14	16	18	20
SWP	6	6	6	6	6	6	6

Supply Application

Figure 5: Typical Wall Sleeve Installation

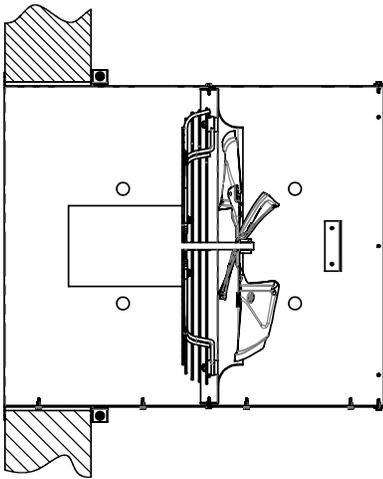
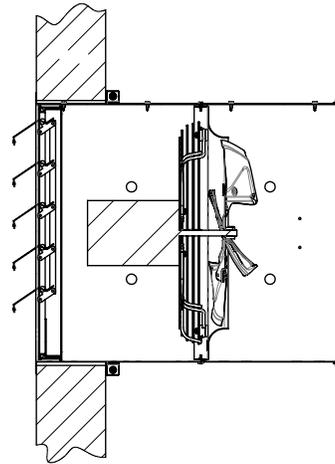


Figure 6: Typical Wall Sleeve and Damper Installation



Note: For Supply configuration wall sleeve is must.

START-UP AND OPERATION

Carefully inspect the unit before start-up. All motor bearings should be properly lubricated and all fasteners should be securely tightened. Rotate propeller by hand to insure free movement.



Before placing hand on impeller or belts, lock out power source. Check all set-screws and keys. Tighten when necessary

Make sure inlets and approaches to the unit are free from obstruction. To assure maximum air movement, make sure adequate supply air is available. Before putting fan into operation, complete the following check list:

- a. Turn off and LOCK OUT power source.
- b. Make sure installation is in accordance with manufacturer's instructions.
- c. Check and tighten all fasteners.
- d. Spin propeller to see if rotation is free.
- e. Check all set-screws and keys: tighten if necessary.
- f. Torqued set-screws have a colored Torque Seal mark indicating the correct torque has been applied.
- g. Make sure there is no foreign or loose material in ductwork leading to and from fan or in the fan itself.
- h. Properly secure all safety guards.
- i. Secure all access doors to fan and ductwork.
- j. Check line voltage with motor nameplate.
- k. Check wiring.

The fan has been checked at the factory prior to shipment for mechanical noises. If mechanical noises should develop:

- a. Check rotating components for adequate clearance.
- b. Check installation and anchoring.

Switch on electrical supply and allow fan to reach full speed. Check carefully for:

1. Correct rotation of the impeller.



Incorrect rotation overloads motor severely and results in serious motor damage. On single phase units, change the terminal block set-up following the wiring diagram on the motor.

2. Check motor and bearing temperatures for excessive heat against the manufacturer's recommendations.



Use care when touching the exterior of an operating motor. Modern motors normally run hot. They are designed to operate at higher temperatures. This is a normal condition but they may be hot enough to be painful or injurious to the touch.

If any problem is indicated, TURN OFF POWER TO UNIT IMMEDIATELY. Lock out the electrical supply, check carefully for the cause of the trouble and correct as needed. Even if the fan appears to be operating satisfactorily, shut down after a brief period and check all fasteners, setscrews and keys for tightness. During the first eight (8) hours of operation, check the fan periodically for excessive vibration or noise. At this time, also check motor input current and motor bearing temperatures to insure that they do not exceed manufacturer's recommendations. After eight hours of satisfactory operation, shut down the fan and lock out the electrical power to check the following items and adjust all set-screws, keys, and fasteners as necessary.

MAINTENANCE



To reduce the risk of injury, disconnect from power supply before servicing.

Do not attempt maintenance on fan until the electrical supply has been completely disconnected. If a disconnect switch has not been provided, remove all fuses from the circuit and lock the fuse panel so they cannot accidentally be replaced.

The propeller, venturi panel, motor, and wire grill should be cleaned of dust and grease if required. Power should be disconnected before cleaning the internal parts of the ceiling fan.

In general, standard motors are furnished with pre-lubricated, sealed-for-life ball bearings which require no lubrication is required.

HIDDEN DANGER

In addition to the normal dangers of rotating machinery, fans present an additional hazard in their ability to suck in not only air, but loose material as well. Solid objects can pass through the fan and be discharged by the impeller as potentially dangerous projectiles. Therefore, screen intake to ductwork, whenever possible, to prevent the accidental entrance of solid objects. Never open access doors to a duct system with the fan running.

When starting the fan for the first time, completely inspect the ductwork and interior of the fan (with power locked off), to make certain there is no foreign material which can be sucked into or blown through the ductwork.

GUARDS

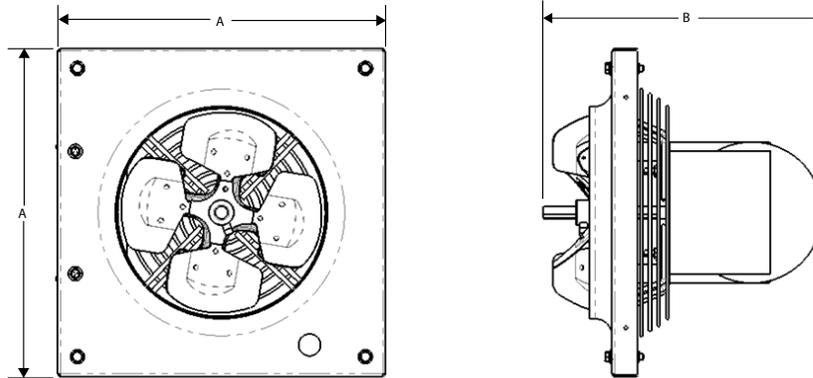
All fans have moving parts which require guarding in the same way as other moving machinery.

Where the fan is accessible to untrained personnel or the general public, use maximum safety guards, even at the cost of some performance loss. Unprotected fans located less than 7' above the floor also require guarding as specified in the Occupational Safety and Health Act (OSHA).

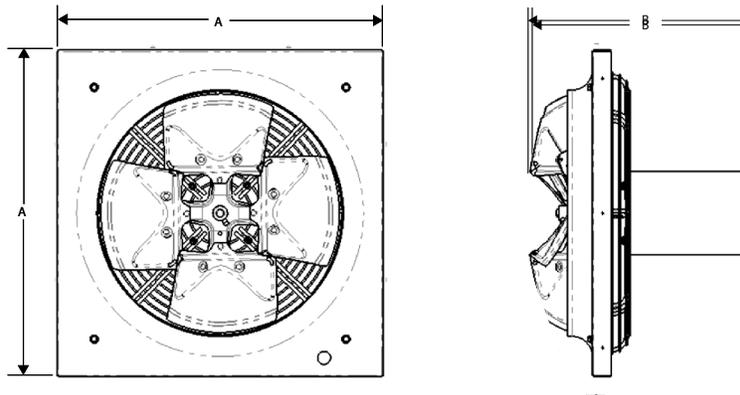
PennBarry recommends the use of guards on all exposed non-ducted fans, ceiling and wall mounted.

DIMENSIONAL DATA

Sizes 08 - 12



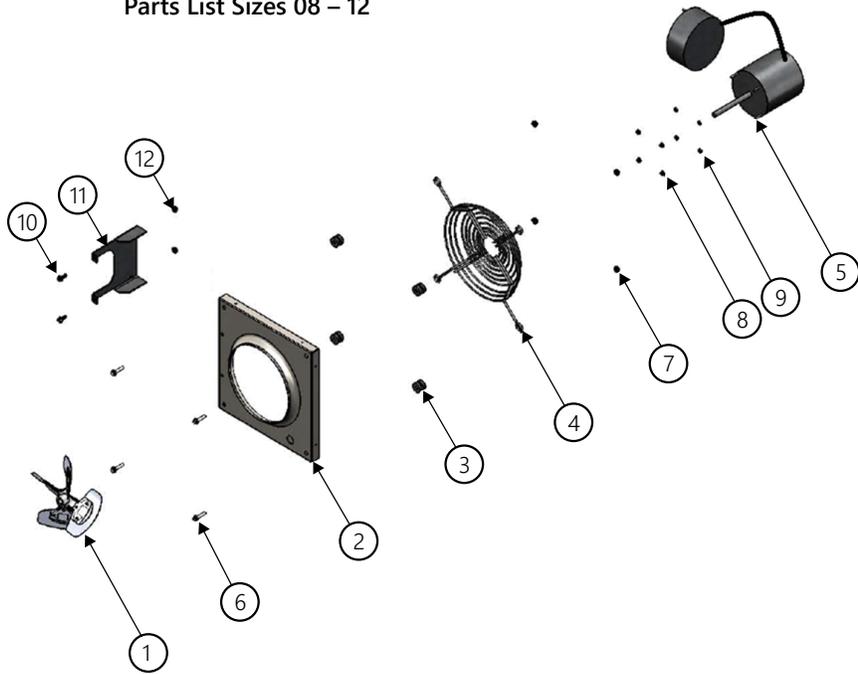
Sizes 14 - 20



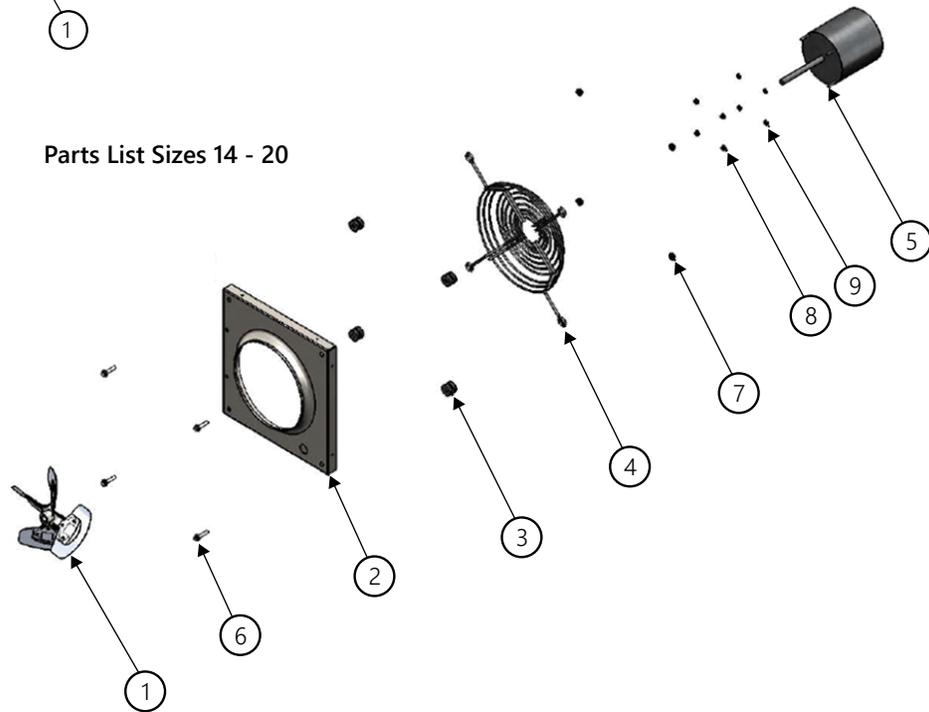
Size	DIM A	DIM B
08	13.0	11.06
10	15.0	11.13
12	18.0	11.75
14	20.0	13.88
16	22.0	14.68
18	24.0	14.13
20	26.0	13.94

FAN EXPLODED VIEW

Parts List Sizes 08 - 12



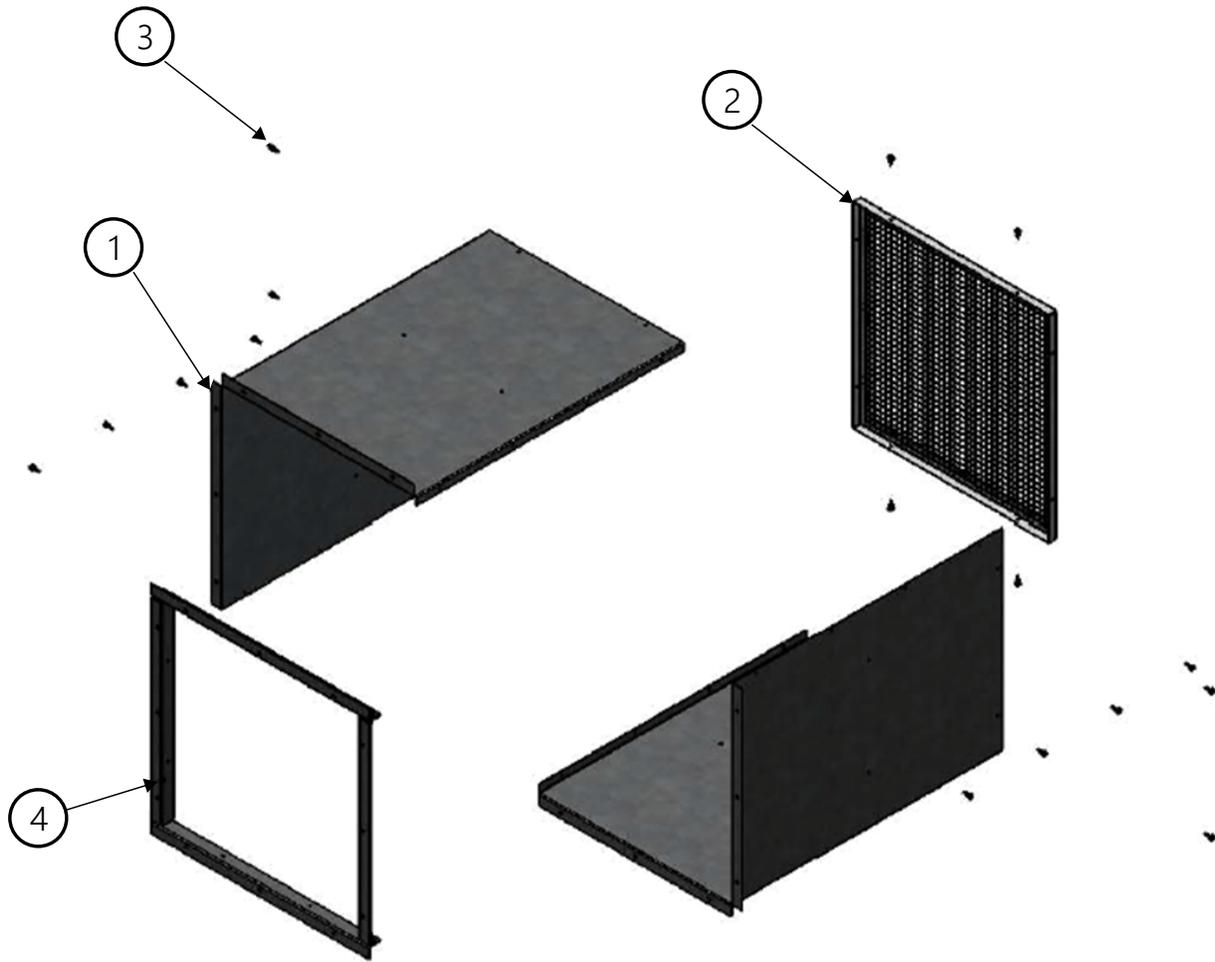
Parts List Sizes 14 - 20



Legend

1. Propeller
2. Venturi Panel
3. Wire Guard H/W package
4. Wire Guard
5. Motor
6. 1/4-20 x 1.25" Whiz Bolt
7. 1/4-20 Whiz Nut
8. #8-32 Whiz Nut
9. #8 Washer
10. 10-32 x 1.00" Bolt
11. Controller Support Bracket
12. #10-32 Whiz Nut

WALL MOUNTING SLEEVE ASSEMBLY

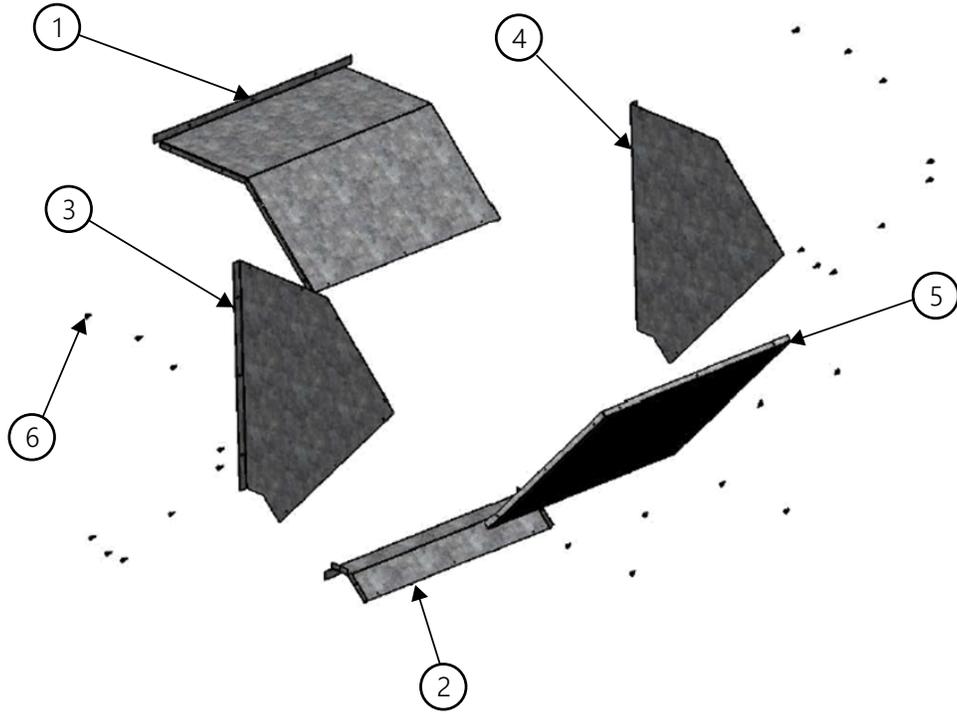


Legend

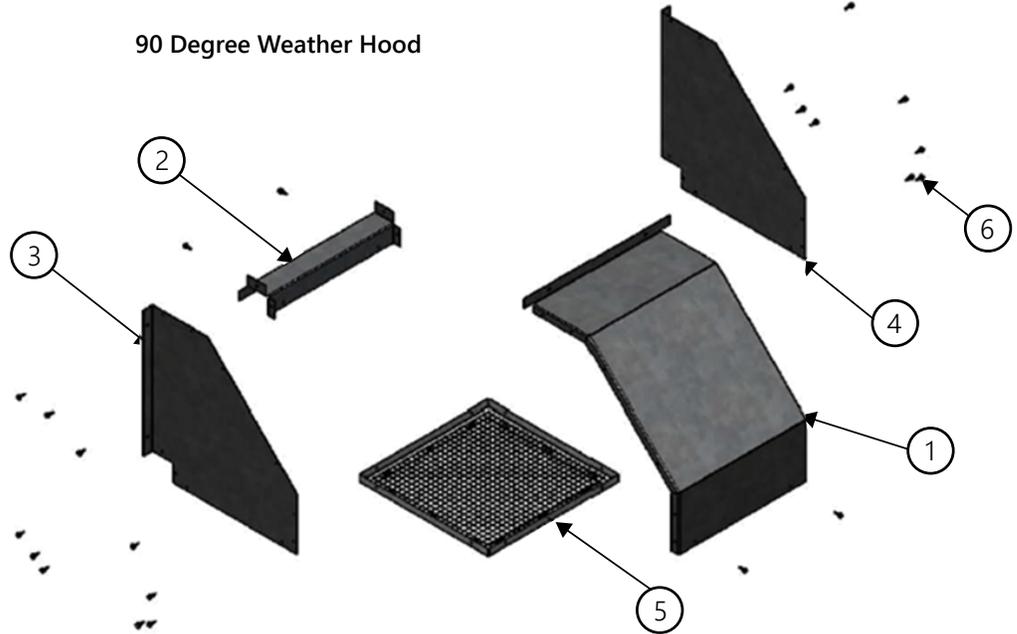
- 1. L Panels
- 2. Screen Guard
- 3. Hex #10 X 5/8 Self Drilling
- 4. Slip Flange

WEATHER SHIELD ASSEMBLY

45 Degree Weather Hood



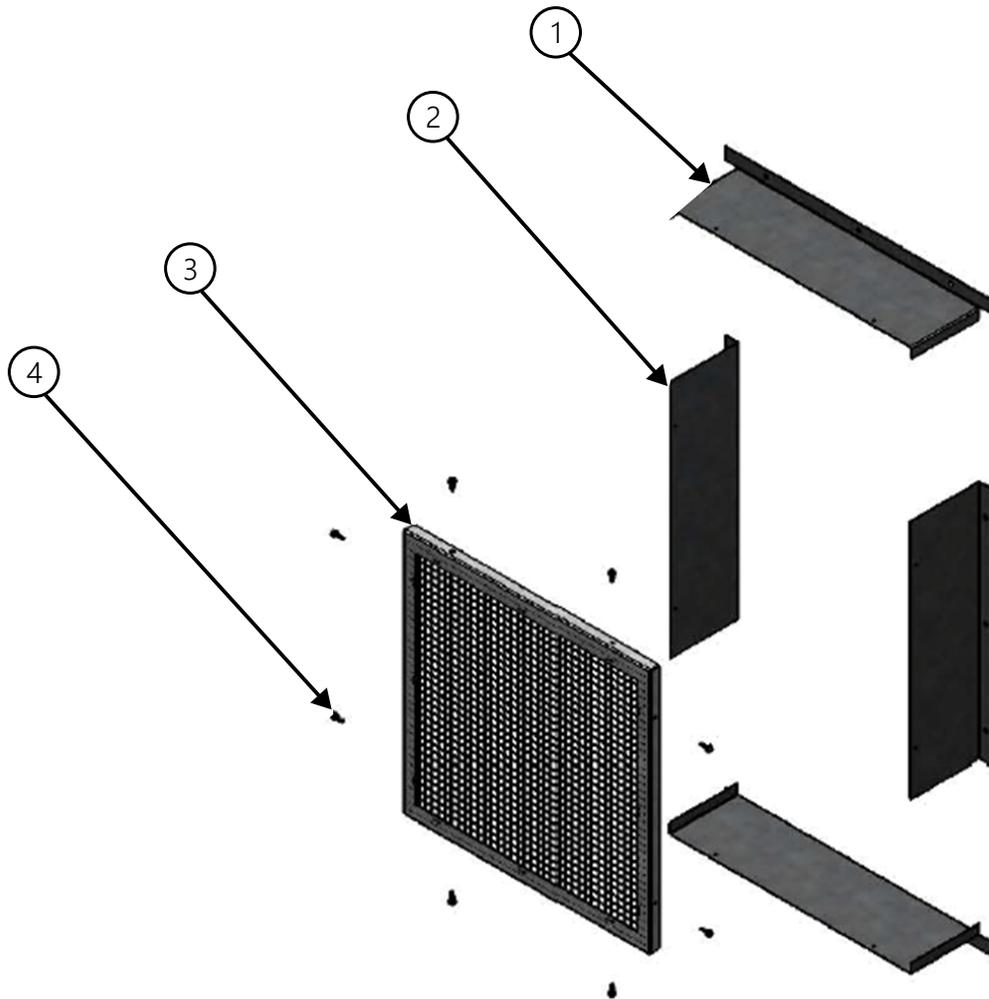
90 Degree Weather Hood



Legend

- 1. Top Panel
- 2. Bottom Panel
- 3. Left Panel
- 4. Right Panel
- 5. Screen Guard
- 6. Hex #10 X 5/8 Self Drilling

DAMPER GUARD ASSEMBLY



Legend

- 1. L Panels Top
- 2. L Panels Side
- 3. Screen Guard
- 4. Hex #10 X 5/8 Self Drilling

TROUBLESHOOTING CHECKLIST

Symptom	Possible Cause(s)	Corrective Action
Excessive Noise	1. Defective or loose motor bearings	1. Replace motor with same frame size, RPM, HP
	2. Ventilator not securely anchored	2. Reset properly
	3. Loose or unbalanced impeller	3. Tighten fasteners, remove build-up, balance propeller
	4. Loose or damaged impeller	4. Replace propeller
	5. Propeller rotating in wrong direction	5. Reverse direction
Fan Inoperative	1. Blown fuse or open circuit breaker	1. Replace fuses or circuit breaker
	2. Loose or disconnected wiring	2. Shut off power and check wiring for proper connections
	3. Defective motor	3. Repair motor
Insufficient Airflow	1. Open access doors or loose section of ducts	1. Check for leakage
	2. Clogged filters	2. Clean filters
	3. Operation in wrong direction	3. Correct rotation of propeller
	4. Insufficient make-up air direction	4. Add make-up fan or louver opening
Motor Overheating	2. Overvoltage or under voltage	2. Contact power supply company
	3. Operation in wrong direction	3. Reverse direction of motor
	4. Fan speed too high	4. Use PWM controller to reduce motor speed
	8. Undersized motor	8. Check motor ratings with catalog speed and air capacity chart

Note: Care should be taken to follow all local electrical, safety and building codes. Provisions of the National Electric Code (NEC), as well as the Occupational Safety and Health Act (OSHA) should be followed.

All motors are checked prior to shipment. If motor defects should develop, prompt service can be obtained from the nearest authorized service station of the motor manufacturer while under warranty. Exchange, repair or replacement will be provided on a no charge basis if the motor is defective within the warranty period. The PennBarry representative in your area will provide a name and address of an authorized service station if requested. **WARNING:** Motor guarantee is void unless overload protection is provided in motor wiring circuit.



PENNBARRY™

PennBarry is proud to be your preferred manufacturer of commercial and industrial fans and blowers. Learn how PennBarry can assist you in your next application by contacting your PennBarry Representative or visiting us on the web at www.pennbarry.com.

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PennBarry reserves the right to make changes at any time, without notice, to models, construction, specifications, options and availability. This manual illustrates the appearance of PennBarry products at the time of publication.

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