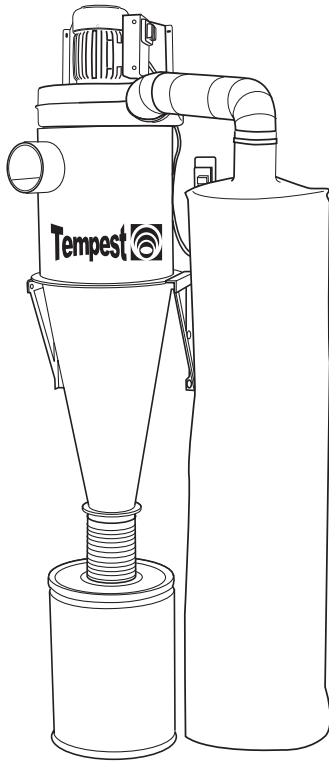
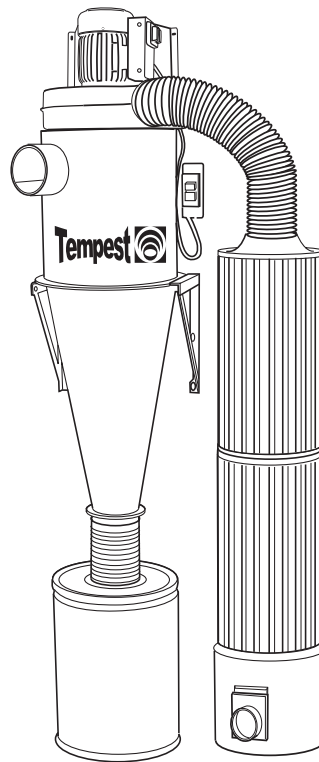


Tempest

Owner's Manual TEMPEST / TEMPESTCX



TEMPEST



TEMPESTCX

PSI Woodworking Products

Thank you for purchasing one of PSI's growing family of woodworking products. Our Tempest cyclone systems are engineered and manufactured to the highest standards of quality. You will find the Tempest to be a remarkable dust collection machine.

Warranty

This product is warranted against defects in material and workmanship for a period of five years on the motor and all other components. This warranty applies to the original purchaser of the product and is limited to the repair or replacement of the product or its parts at the discretion of PSI Woodworking Products. Excluded are parts which have been misused, abused, altered, or consumed by normal operation of the machine. Also excluded are direct or consequential damages to persons, properties, or materials. Your invoice serves as proof of purchase and must be referenced to authorize warranty repairs. Call your dealer for proper authorization. Owner is responsible for returning warranty service parts at their expense. Defective parts will be repaired or replaced at the manufacturer's discretion. Tempest cyclones are warranted for wood dust collection only.

Safety

- Do not use this system near flammable or combustible liquids or gases including gasoline or other fuels, cleaners, oil-based paints, natural gas or explosive dusts like coal dust, magnesium, grain dust, or gun powder.
- Do not vacuum anything that is burning or smoking such as cigarettes or hot ashes.
- Do not vacuum toxic materials or use near hazardous materials.
- Do not use outdoors or on wet surfaces.
- Do not operate with a full waste container.
- To avoid collapse, use 26 gauge steel or thicker for ductwork.
- Install on a stable level surface. Because the Tempest is top-heavy, be certain to secure the motor/blower unit to a wall. If assembled on a stand, make sure the base and supporting structure is stable. Secure the upper portion of the unit with safety wire.
- Do not use without filter bag or canisters attached.
- Turn off controls before unplugging. Do not pull cord to unplug, grasp plug and remove from receptacle.
- Do not operate with the motor/blower off of the cyclone- this could cause severe overheating and/or motor burnout.
- Do not use with damaged cord, plug, or other parts. Only install to a properly grounded outlet.
- Do not wear loose clothing in the area of any inlets because high suction could pull and stretch garments into blower.
- If your ductwork consists of only plastic hose or pipe, ground hose or pipe by wrapping bare copper wire around the exterior surface and ground the wire at either end.
- Keep hands free from spinning impeller.
- The Tempest is only warranted and guaranteed for the collection of wood dust although it may be quite suitable for other applications.

Features

- Powerful motor blower unit has a proven flawless performance record
- Able to capture over 99% of all dust and debris before it passes through the motor blower
- 1-micron filter bag or 1/2- micron filter cartridges for fine filtration
- Includes wall support brackets
- Simple operation and easy cleaning of debris from the collection canister
- With nearly clean filters, system consistently runs at peak performance
- 12" steel impeller provides superior performance
- Designed to fit under 8 ft. ceiling (with 21" fiber drum).
- 72" x 24" 5-micron filter bag

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SPECIFICATIONS	
Max CFM Free Air	1350 CFM
VAC, Max Amps (single phase)	110V, 8 amp / 220V, 16 amp
HP	2 HP
Max Static Pressure	9.5"
Impeller Diameter	12" Steel
Sound	73 db
Gauge of Cyclone Body	17 ga
Weight (motor & cyclone)	123 lbs

Components

- 1) Motor blower unit: DC250SEMB
- 2) Cyclone Assembly consisting of:
 - top cylinder
 - center flange with 9 sets of nuts and bolts
 - bottom cone
 - gasket
 - two screw-mount wall brackets
- 3) Drum Kit consisting of:
 - 2 ea. 7" hose clamps
 - 1 ft. of 7" diameter clear hose (D07)
 - 7" diameter flange
 - 1 ea. 26 gal. fiber drum
- 4) Outflow Assembly consisting of:
 - 1 ea. 5" 90° elbow (TEMPEST)
 - 2 ea. 5" hose clamp (TEMPESTCX)
 - 3 ft. of 5" black flexible hose (TEMPESTCX)
- 5) Filter Assembly consisting of:

<p>TEMPEST</p> <ul style="list-style-type: none"> • 1 ea. 1 micron bag (BCYC2-1M) • 1 ea. adjustable elbows (R-90E05) • 2 ea. 5" hose clamp (DBC5) 	<p>TEMPESTCX</p> <ul style="list-style-type: none"> • 2 ea. 26" 1/2-Micron filter (CYFA) • 1 ea. fiber cleanout can (CYFILCAN4) • 2 ea. 5" hose clamp (DBC5) • 1 ea. 5" bell mouth hood (CYATT05) • silicon caulk (CYSCAULK) • 2 ea. foam ring (CYFRING9)
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CAUTION: Measurements are included as a guide to perfect situations. Many factors may change them. Please check and adjust to your conditions.

fig. 1 - Tempest Dimensions

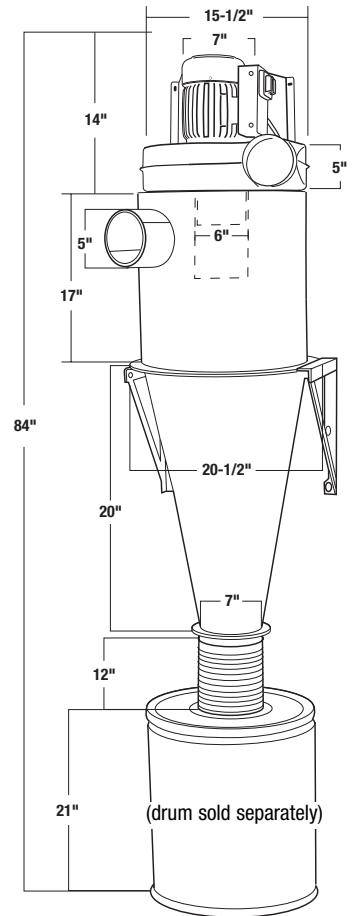


fig. 2 - Filter Dimensions

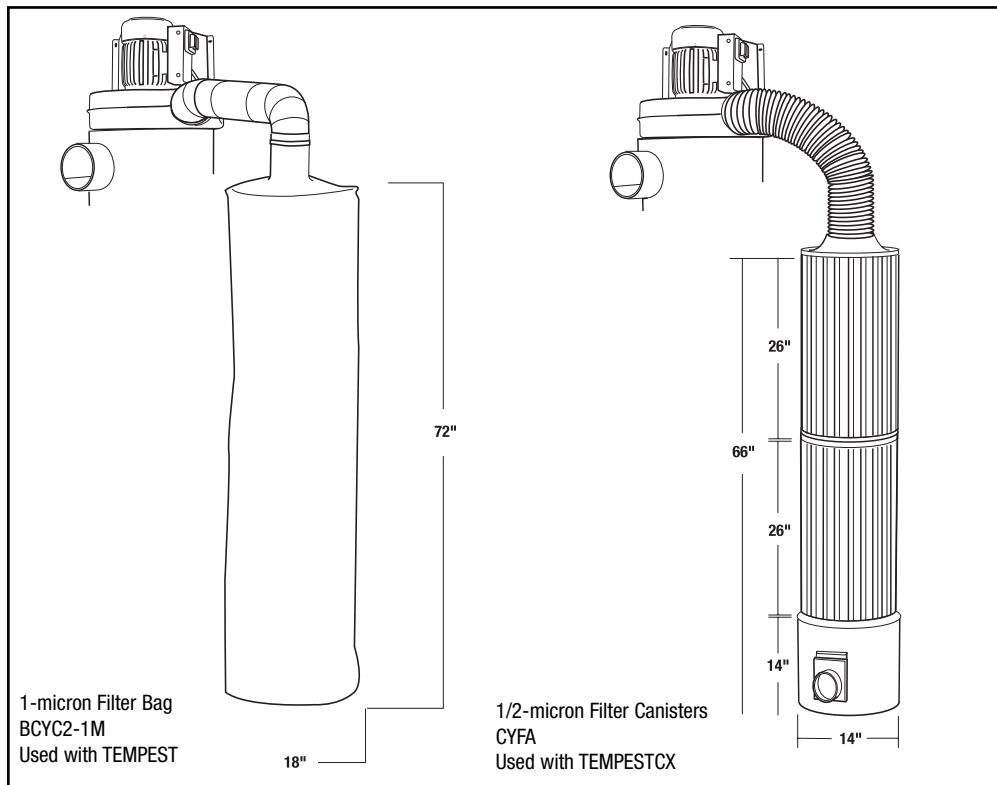
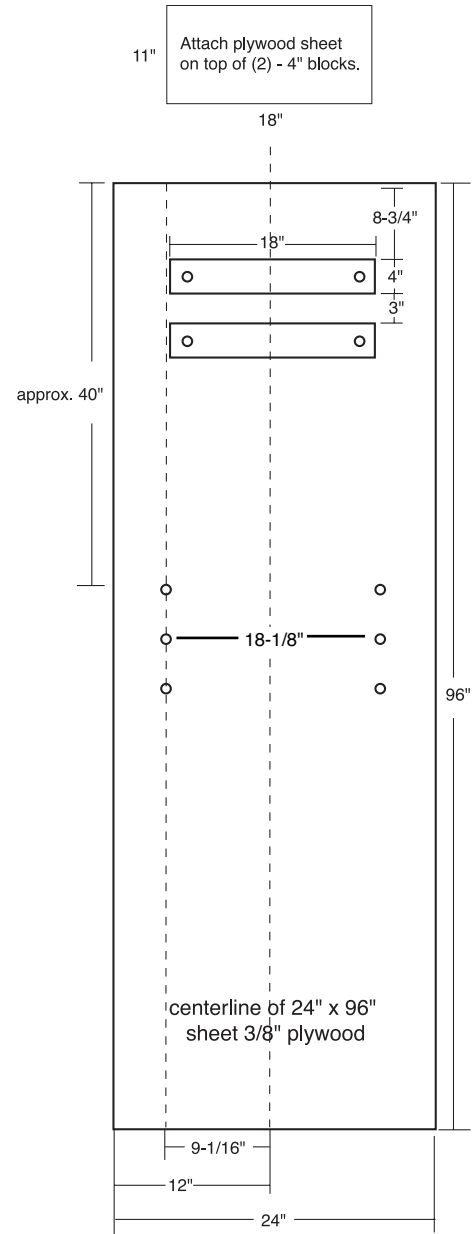
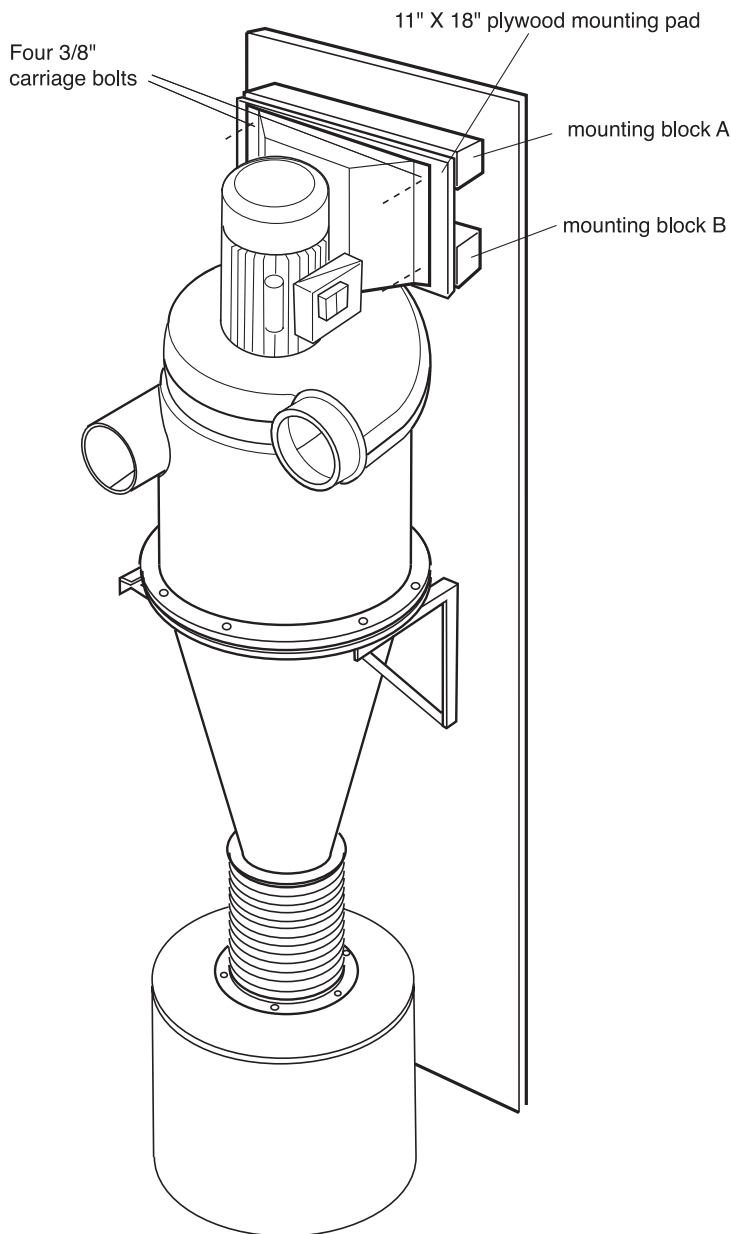


fig. 2A - Mounting the Cyclone



STEP ONE - Assembly (fig. 2A)

1. Follow directions to assemble unit. With the unit assembled, mark centerline from body to get the right plywood thickness.
2. To make the assembly easier, it is suggested that the entire unit be assembled on the floor using a sheet of 3/8" plywood- 24" wide by 96" high.
3. Rip a sheet of plywood 24" wide by 96" high. If your ceiling height is not 96" cut the plywood to the appropriate ceiling height.
4. Mark a centerline 12" from the mill side of the plywood.

STEP TWO - Preparing the Motor Riser

3. Decide on the overall height of the cyclone (typically 90" high or 6" down from the top of the plywood). Mark this height on the plywood sheet.
4. Assemble body cone and brackets in position desired. Mount to plywood sheet. Check front to back relationship. The TEMPEST motor blower has a centerline of 9-3/8". The assembled body has a centerline of 11-3/8". Yours may vary and shim blocks may need to be added to accomodate your local conditions.

Step THREE - Mounting the Body

- Draw 2 lines lengthwise on the mounting board (parallel to the centerline), each 9-1/16" from the center. These will indicate the vertical centers of left and right mounting brackets.

- Set up each of the mounting brackets on the plywood so the top of the bracket is 22-1/2" from the bottom of the motor mount and centered on one of the vertically drawn lines. Secure brackets to the plywood.
- Locate the adhesive-backed foam strip (G) 64" x 3/8" x 1/16" and carefully attach it to the large flange at the top of the cyclone cone (E). This will assure an airtight seal between the body (B) and the cone (E) sections.
- With the seam of the cone facing the plywood, use two bolt holes in front and two holes in the rear of cyclone to join the body to the cone at the flange.
- Insert the bottom flange of the motor blower (A) into the top of the cyclone body (B).
- Align the cyclone rim to the brackets using only the outer-most hole on each bracket. Once positioned, insert the two remaining bolts through both flange and bracket and tighten
- Be sure the connection between motor blower and Tempest body are snug. Adjust the height of the mounting brackets to account for any space remaining between these parts.

Step FOUR - Shimming the motor

- Cut 2 ea. 4" x 18" blocks to be used to raise the motor mount off of the plywood backing.
- Measure centerline for mounting block A 8-3/4" down from selected cyclone height.
- Measure centerline for mounting block B 5" below centerline of block A.
- Glue the 4" blocks horizontally on the plywood sheet.
- Cut a 11" x 18" mounting pad from plywood waste. This will cover the mounting blocks.
- Glue 11" x 18" pad over the blocks evenly.
- Place the motor blower on the pad and allow glue to dry.

Step FIVE- Mounting the Motor

- When glue is dry, mark bolt holes and bore for 4 ea. 3/8" carriage bolts (not supplied). These bolts will secure the motor blower to the riser pad.
- Center the motor mount (fig. 3-K) on top of the riser block.
- Using the carriage bolts, secure the motor support bracket to the riser block through the four holes in the motor support bracket.

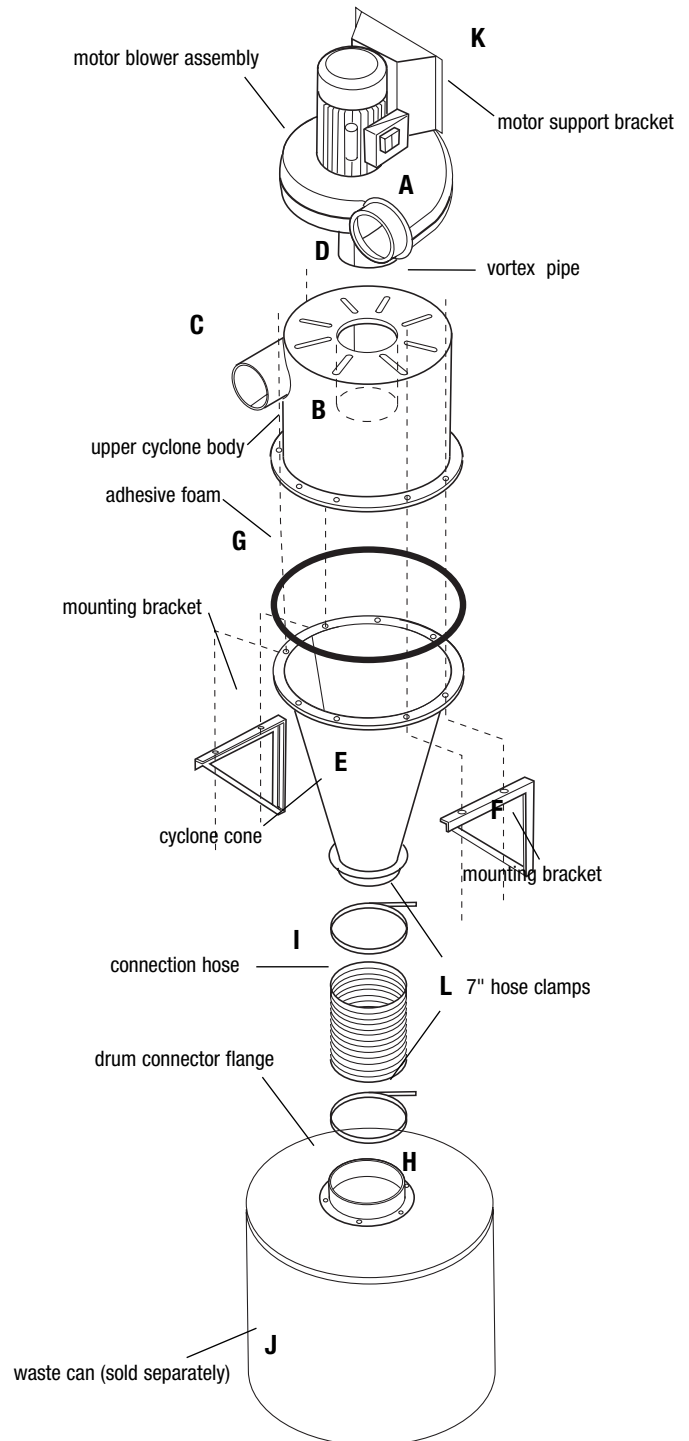
Step SIX - Mounting Assembly to Wall

Now you are ready to lift the cyclone into place and mount it's plywood back to the wall.

- Determine an appropriate location for your cyclone. Setting the Tempest upright in its final position will require the assistance of another person.
- Depending on the construction of the selected wall, use six best grade 1/4" lag bolts or concrete fasteners. After the cyclone is mounted in place on the wall, seal the connection between the motor blower (A) and the cyclone body (B) with a generous application of silicon caulk, giving it ample time to dry.
- Using the 7" waste can flange (H) as a template cut a 7" hole in the lid of your waste can and drill 8 each 3/8" holes for 3/8" hex bolts (not provided). Bolt and seal the flange to the top of the can with a quality silicone sealant (**#CYSKAULK**). Let this cure for 24 hours before testing. Connect the waste can lid to the bottom cyclone flange with the included 12" x 7" clear flex hose (I) and hose clamps (L).
- Install filter bag or cartridges as described on page 6.

- Finally, with the unit operating, inspect all seams and connections for pin-hole leaks. If any appear, they should be filled with a premium silicone caulk and given enough time to fully cure before re-testing. Failure to seal properly will result in excess dust in your final stage filter bag or cartridges.

fig. 3 - Tempest Components



Assembling 1-micron Collection Bags

TEMPEST with Standard 1-micron Felt Bag (BCYC2-1M)

This high filtration bag collects any super fine particles that may pass through the cyclone unit. It has a zipper on the bottom for easy cleaning access. It may hang vertically from the motor blower or positioned anywhere else in the shop, even along the ceiling. Remember, virtually no dust will collect in this bag. It is primarily used to prevent super-fine dust from re-entering the air. A 5" diameter metal duct elbow connects the bag to the motor blower.

Connecting the 1-Micron Bag to the Motor Blower Exhaust Port.

Fit together two 5" adjustable sheet metal elbows (included). Secure the two together with pop rivets, small sheet metal screws, adhesive caulk, or duct tape. Insert corrugated end of elbow into the exhaust port of the motor blower and seal. Now, connect the 72-inch bag to the adjustable elbow with the 5" hose clamp provided.

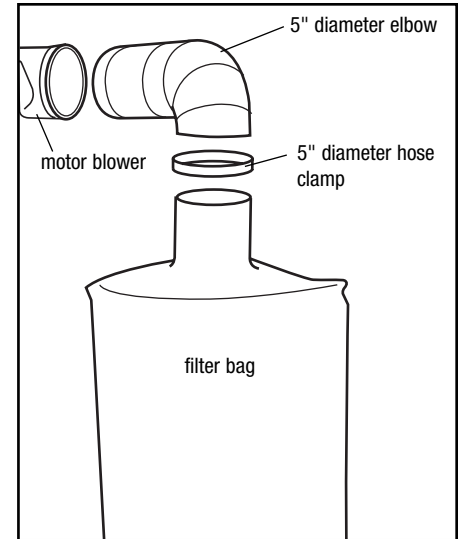
Bag Positioning

Hang the 1-micron bag vertically, with the zipper on the floor. However, if needed the bag can be suspended horizontally using two hangers (not provided) attached at either end of the bag at the seams.

Bag Maintenance

Never wash the bag. Water will cause the material to lose its effectiveness. After using the bag for approximately 6 hours, whack the outside of the bag with the equivalent of a wooden yard stick. This will free up most of the fine dust attached to the inside walls. Periodically unzip the bottom and clean out.

fig. 4 - Bag Filter Diagram



Assembly of the 1/2-micron Cartridges and Cleanout Can

Preparation of Cleanout Can

For CYFILCAN4 (C), cut a 8" hole in the center of the can's lid. Next, use the blast gate to scribe a 4" cutout hole on the side of the can. Cut the hole and use a generous amount of caulk to seal the gate into the hole. Set the cartridge filters on top of the cleanout can. Use one 9" foam gasket to secure the lower cartridge to the cleanout can.

Preparation of Cartridges

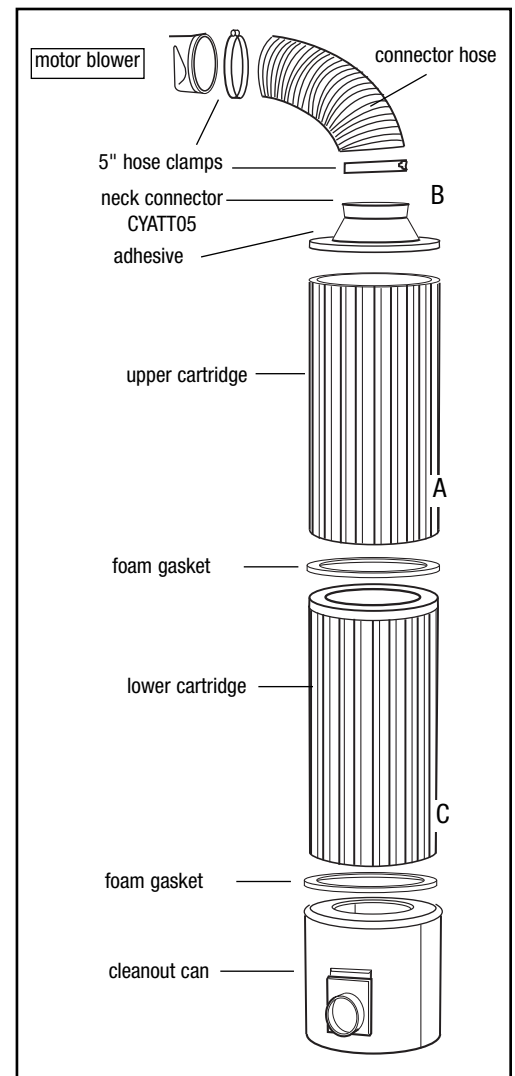
Use the remaining 9" foam gasket to connect the upper and lower cartridges. Attach the connector hose to the motor blower and neck connector as shown. Next, using adhesive on the bottom of the neck connector, attach it to the top of the upper cartridge.

Cartridge and Cleanout Can Maintenance

Keep filters dry at all times. Use compressed air or a shop vacuum to clean the cartridges. Set the compressor to 40 psi and move the air source up and down the outside of the cartridge, aiming towards the center. Take time to clean each pleat of the filter from top to bottom. Very fine dust will fall into the cleanout can and accumulate.

Periodically, use your shop vacuum to remove dust from the cleanout can. For best results, insert the suction end of the shop vac into the can via the mounted blast gate or access door and turn it on. Blow the filters clean with the vacuum's exhaust while pulling the dust through the cleanout port on the can. This will prevent fine dust from travelling back through the system. The can should be checked about every three months.

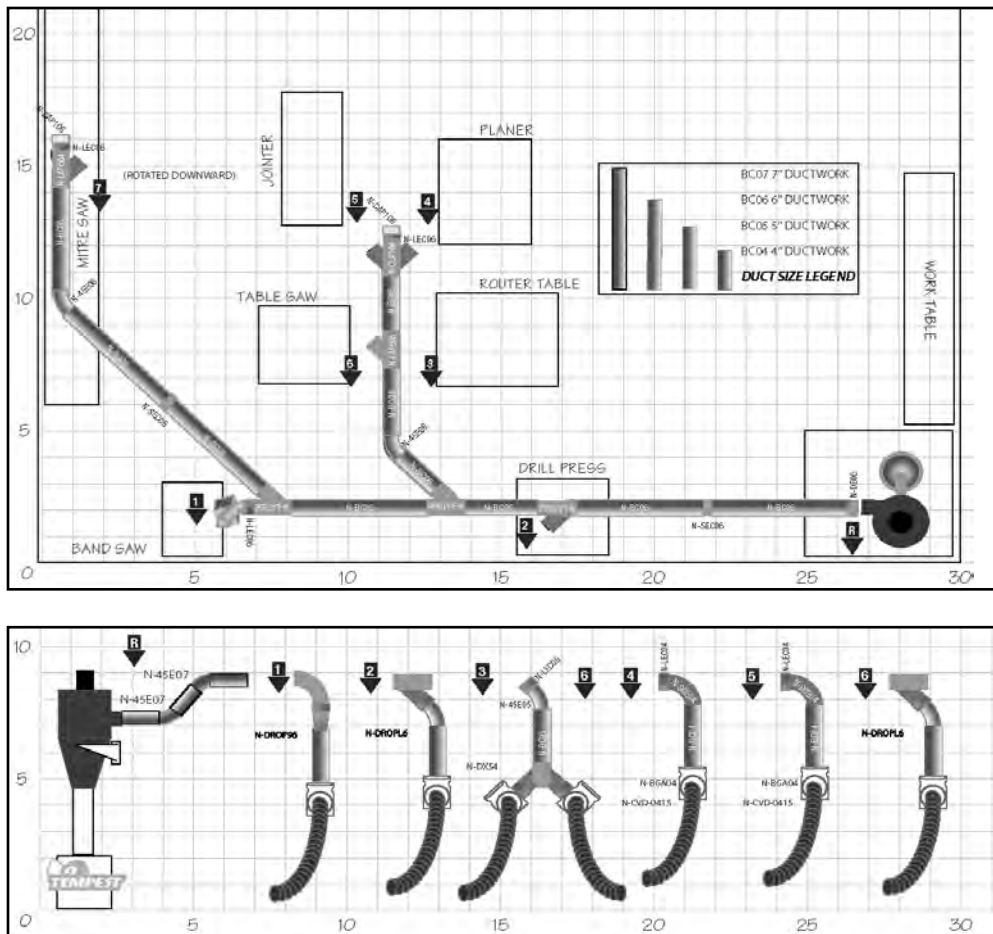
fig. 5 - Canister Filter Assembly



Ductwork Operation and Installation Suggestions

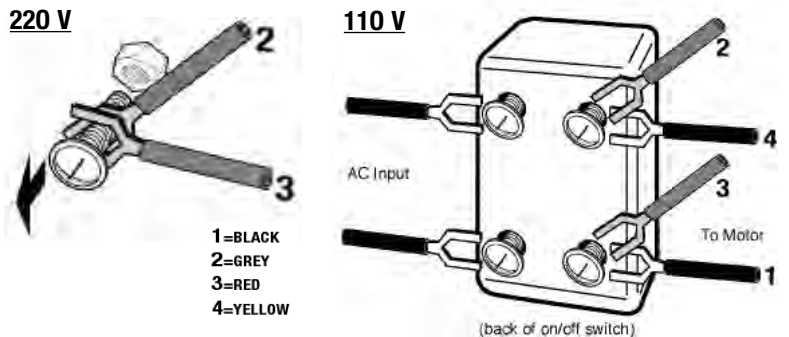
- 1) Try to maintain the largest possible diameter of ductwork throughout the shop leading up to connections with your machines. The air inlet to the Tempest cyclone is 5" in diameter. Therefore, use 5" ductwork throughout the shop if possible. Because 30ga. galvanized HVAC may collapse under pressure from the vacuum, we suggest using strong (26ga. or heavier) spiral metal pipe as distributed by PSI.
- 2) Use "Y" or lateral type bleed offs from the main (as opposed to a "T"). This will help to maintain more efficient airflow.
- 3) Use blast gates at every connection between machinery and ductwork in order to close branches when not in use.
- 4) Since it is conductive, no grounding is necessary when using galvanized metal ductwork. Check continuity to be sure the entire system is grounded.
- 5) To maximize airflow, avoid sharp 90° turns and excessive reductions in hose diameter.
- 6) Poor air flow or excessive dust in the filter bag may be a result of a poorly sealed system. The most common leak is at the drum lid. Check the lid and all other connections at the cyclone to ensure the best performance.

fig. 6 - Ductwork Layout Diagram



Changing Voltage on the Motor from 220V to 110V.

- Remove the electrical tape, nut, and bolt from wires 2 and 3, exposing the crimped lugs on the wire ends.
- Connect wire 2 to the post with wire 4.
- Connect wire 3 to the post with wire 1. This converts the voltage wiring from 220V to 110V.



1. 26ga Snaplock Pipe

Snaplock metal pipe is economical, smooth, and practical. It is delivered open and flat—snap it together and lock it along the length of the pipe's seam to make your pipe. It is an easy cut to length with shears. Available in 5' lengths only.

2. Heavy Duty Spiral Pipe

(24 gauge) The inside of the pipe is very smooth while the continuous outside seam provides superior support and strength. Large ends adapts to small end coupling and fittings. Available in 5' lengths only.

3. Long Ranger Remote Dust Collector Switch - LR220-3

Save yourself the inconvenience of walking over to turn on your cyclone when you find you're in the middle of a critical project. Simply press the transmitter on/off button to easily switch your cyclone on or off.

4. Long Ranger MultiGate Switch System - LRMSET220

Turn on your cyclone when you open your blast gate.
Never forget to turn your dust collector on or off. Make it automatic when your cyclone is wired to the MultiGate™ switch system.

5. Ecogate™ Automatic Dust Collector and Blast Gate Switch - ECOGATE4

The ECOGATE™ system opens your blast gate and turns on your cyclone when you turn on your woodworking machine, then shuts the gate and turns off the cyclone when the machine is switched off. For 1HP @ 110V or 1-1/2HP and 2HP @ 220V collectors.

6. Cyclone Muffler - TEMUFF

Reduces cyclone sound by 50% (10db) without effecting machine performance. Attaches between cyclone and filter. Requires hose to connect. Length of muffler with flanges is 23-3/4" and has a 6" diameter connection.

7. Dust Level Sensor - BINSENSOR

Sounds an alarm when your cyclone's bin is full
No more guessing about the dust levels in your cyclone's collection drum. A rotating paddle mounts through the lid of your container and activates the sensor when the paddle is stopped by a high sawdust level. Includes a 110V power cord and a relay connection that can activate an external device such as a visible light bulb.

8. Table Saw Dust Collection Guard - TSGUARD

This Guard is the ideal solution for table saw safety and dust control. When connected to a dust collection system, the PSI Dust Collection Guard captures the dust thrown up by your table saw blade. The Guard can be used on any table saw with an extension table. It is very easy to install and easily swings out of the way. A unique counter-balance allows

9. Dust Grabber Downdraft Table - DGTABLE2

The Dust-Grabber sanding table captures the dust before it enters the air you breathe.

- Non-slip perforated, non-marring surface.
- Strong, laminated hard board construction.

Accessories

