

Thermador® | *An American Icon*™

DOWNDRAFT INSTALLATION MANUAL

MODELS: CVS2 / UCV2



SAFETY INSTRUCTIONS

Read All Instructions Before Using the Appliance.
READ AND SAVE THESE INSTRUCTIONS

WARNING

TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS, OBSERVE THE FOLLOWING:

- A. Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards, including fire-related construction.
- B. Sufficient air is needed for proper combustion and exhausting of gases through the flue (chimney) of fuel burning equipment to prevent backdrafting. Follow the heating equipment manufacturer's guideline and safety standards such as those published by the National Fire Protection Association (NFPA), and the American Society for Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), and the local code authorities.
- C. When cutting or drilling into wall or ceiling, do not damage electrical wiring and other hidden utilities.
- D. Ducted fans must always be vented to the outdoors.
- E. Always unplug or disconnect the downdraft from the power supply before servicing.
- F. This unit is designed for indoor use only. Use this unit only in the manner intended by the manufacturer.

This unit is manufactured for indoor use only. Do not use this unit outdoors.

Parts Needed

- Blower (Remote or Integral)
- Tape Measure
- Phillips Head Screwdriver
- Duct Tape
- Ductwork (configuration varies depending on location; See pages 4-7 for further information)
- Additional Sheetmetal screws (as necessary for ductwork installation)
- Transition(s) (style varies depending on ductwork)
Transition box for remote blower installations is available as an accessory.
- Saw (or equivalent for cutting countertop)
- #8 x 1 1/4" Wood Screws (4)

WARNING

CAUTION: For general ventilating use only. Do not use to exhaust hazardous or explosive materials and vapors.

To reduce risk of fire and to properly exhaust air, be sure to duct air outside. Do not vent exhaust air into spaces within walls, ceilings, attics, crawl spaces or garages.

TO REDUCE THE RISK OF FIRE, USE ONLY METAL DUCT WORK.

To reduce the risk of fire, electric shock and injury to persons, ventilator assemblies. All CVS2 models must be installed with integral blower, Model VTN600CV2C or remote blowers model VTR600R or VTR1000Q. Other ventilator blowers cannot be substituted.

To reduce the risk of fire or electric shock, do not use the fan with any solid-state speed control device.

This appliance has been found to be in compliance with UL507 Standard for Electric Fans and CAN/CSA-22.2 No. 113 Canadian Standard for Fans and Ventilators. It is the responsibility of the owner and the installer to determine if additional requirements or standards apply in specific installations.

Parts Supplied

- Downdraft assembly (1)
- #8 Sheetmetal Screws (8)
- Blower Cord Strain Relief (1)
- Hardware for brackets on vent (2)
- Remote Blower Pigtail

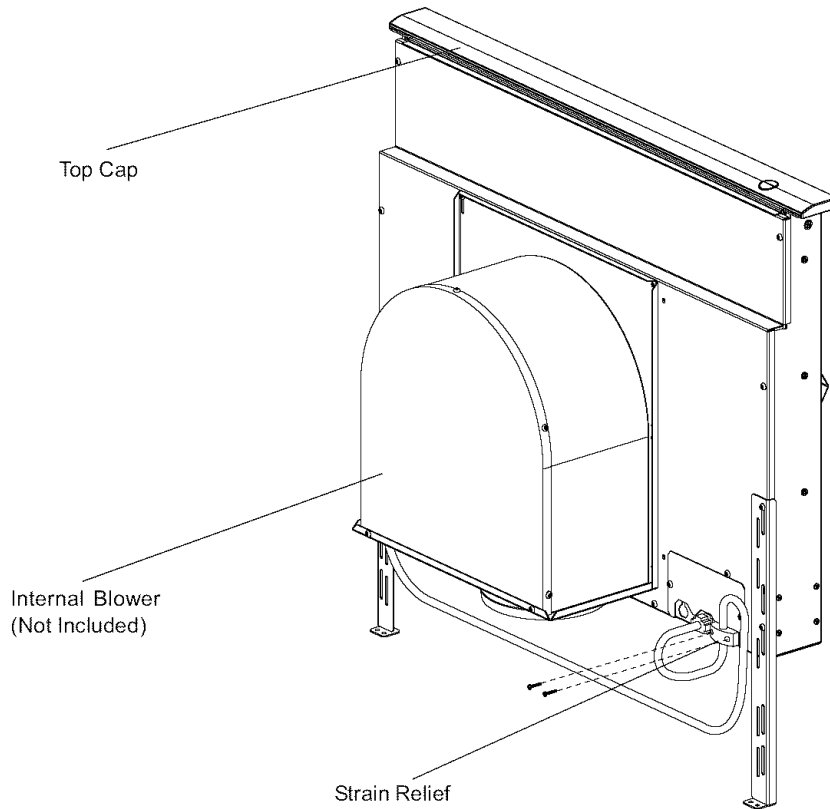


Figure 1

INTRODUCTION

GENERAL DESCRIPTION

The complete downdraft system consists of the ventilator, the intake and the blower (See Fig. 1). The blower can be either **integral** (mounted on the vent intake in the cabinet under the cooktop) or a **remote** (mounted on the roof or outside wall). When a remote blower is used, a duct transition is mounted on the ventilator intake in place of the integral blower to connect the intake to the ductwork. The duct transition must be purchased separately.

The integral blower or duct transition can be mounted in different positions on the intake to route ductwork to avoid cabinet, building framing, utilities, etc.

The downdraft system is available in 30-inch, 36-inch and 45-inch models. Black or white top cap accessories are available to change the color from the basic stainless steel. It is intended for use with all brands and models of residential 30-inch, 36-inch or 45-inch gas or electric cooktops **except professional style cooktops.**

Step 1: PLAN THE INSTALLATION

Carefully follow the planning procedures listed below (See Figure 2).

- A. Determine whether a remote or integral blower will be used. **Remote blower installation requires 4 wires plus a ground wire to run from the downdraft to the blower.**
- B. Make sure that adequate cabinet and counter space has been provided and that the intake will be accessible if service is required.
- C. Consider that cross drafts created by adjacent open windows, doors, air conditioning, old heating vents, recessed ceiling lights, and traffic patterns may affect performance.
- D. For gas cooktop installations make sure that a minimum 10 square inch opening is provided in the toe-kick or other cabinet area. Inadequate ventilation of the cabinet below the cooktop may result in flame outage when operating the vent system.
- E. Provide for air supply or "make-up air" to the room where unit will be installed. If "make-up air" is not provided, then problems, such as fireplace chimney downdrafts, could result.

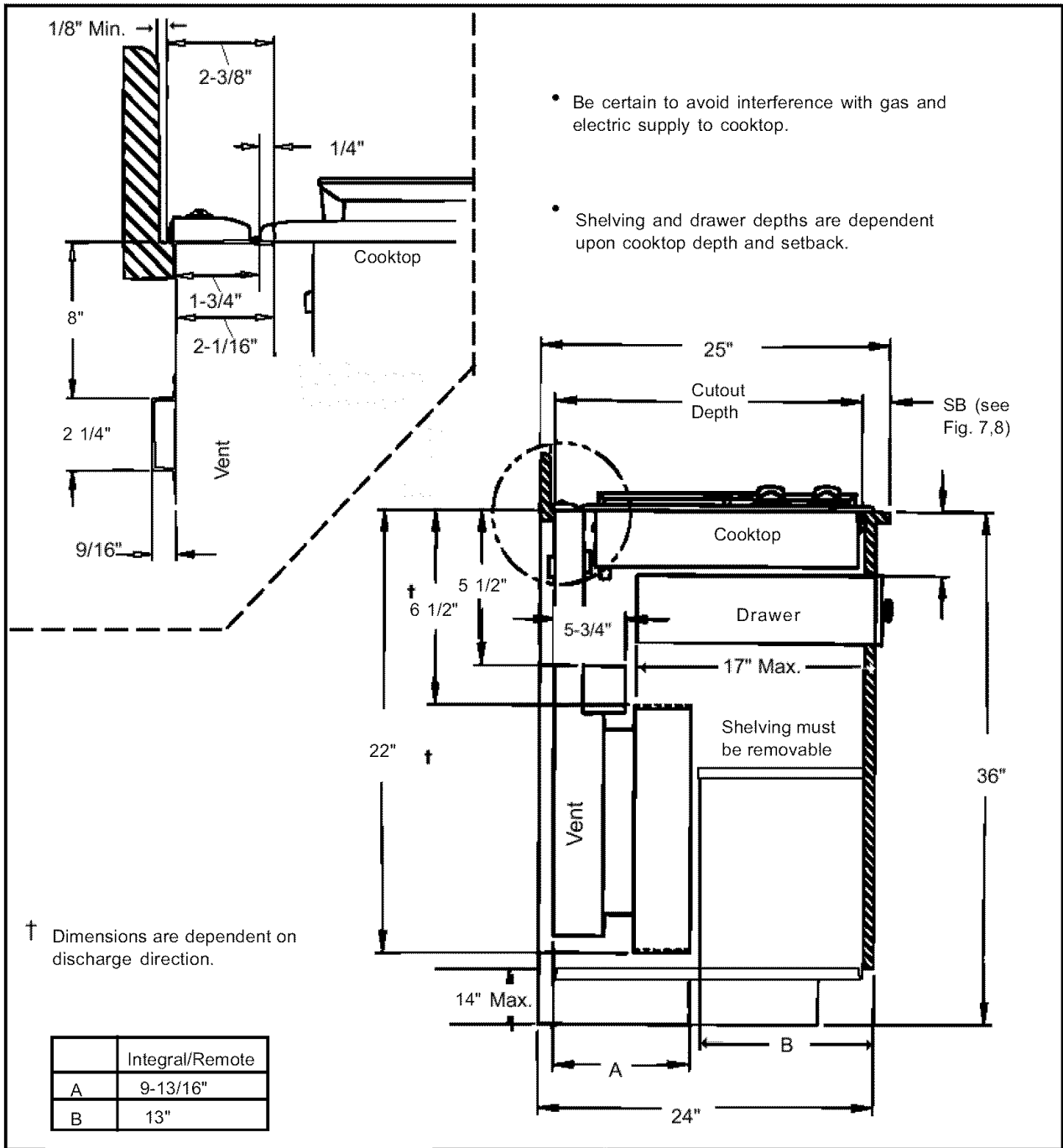


Figure 2

- F. Investigate potential ductwork routes and choose the shortest possible route from the unit to an outside wall or to the roof via an inside wall and attic. For guidance, typical ducting installations are shown in figures 3 through 6. Installation in island locations will require under floor ducting. Peninsula locations usually require ducting laterally through cabinets or under cabinet toe-spaces. Consider potential interferences to ductwork from building framing (floor joists, wall studs, etc.) and utilities (electrical wiring, water, gas, or sewer lines, etc.).
- G. Determine whether the chosen route of ducting will meet vent system performance requirements. To do this, measure the duct lengths needed and determine specific fittings required. Enter this data in the spaces provided in addition, the duct installation guidelines in Table 2 (See Page 6) should be followed in developing the ductwork plan.
- H. Purchase the necessary ductwork in accordance with the listing developed in G above.

Figures 3 through 6 are examples of possible ducting

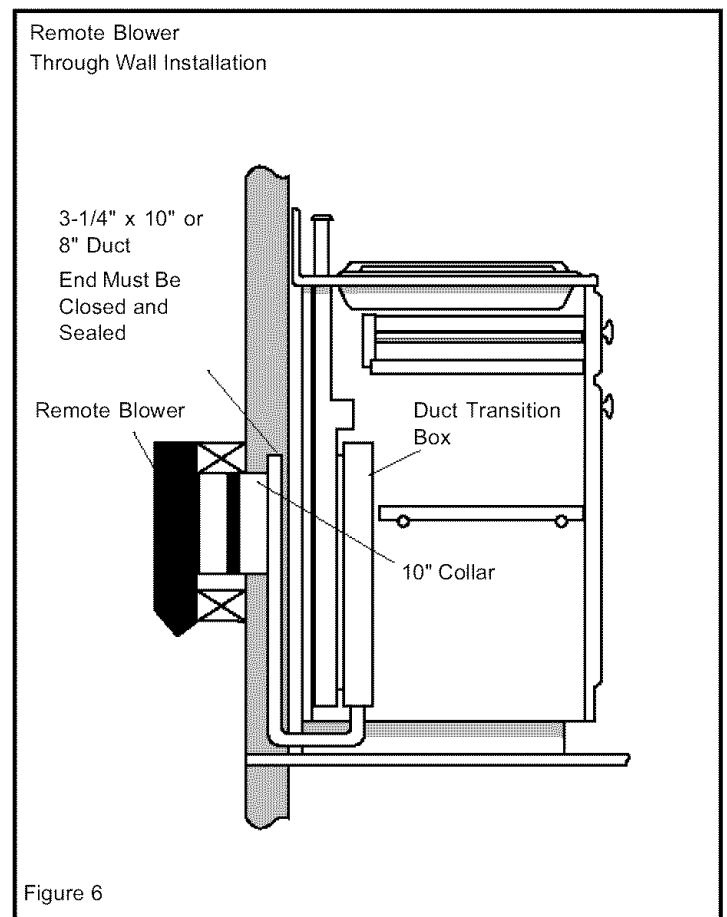
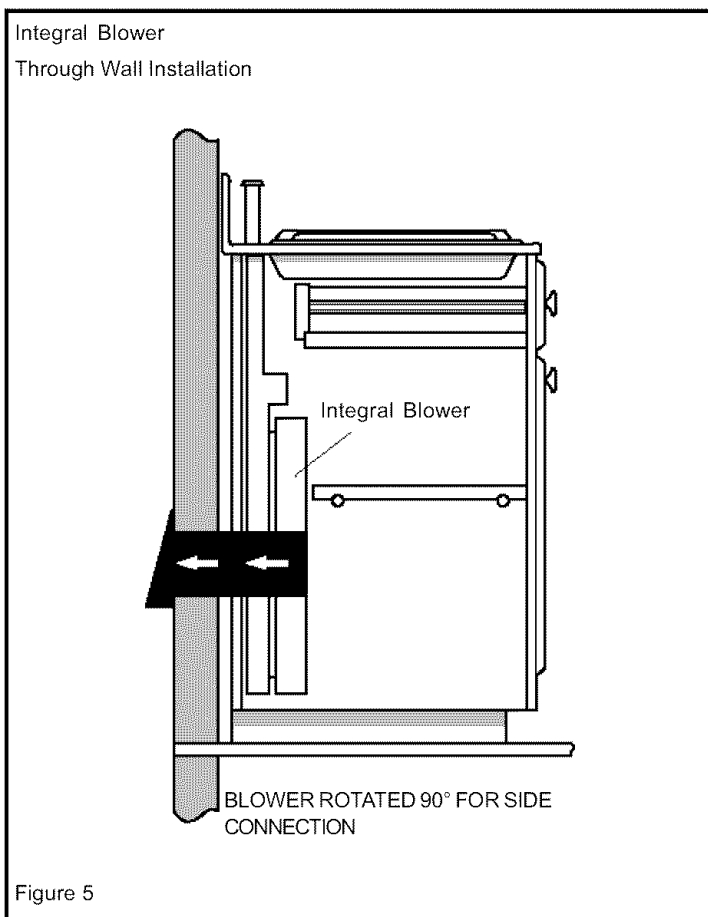
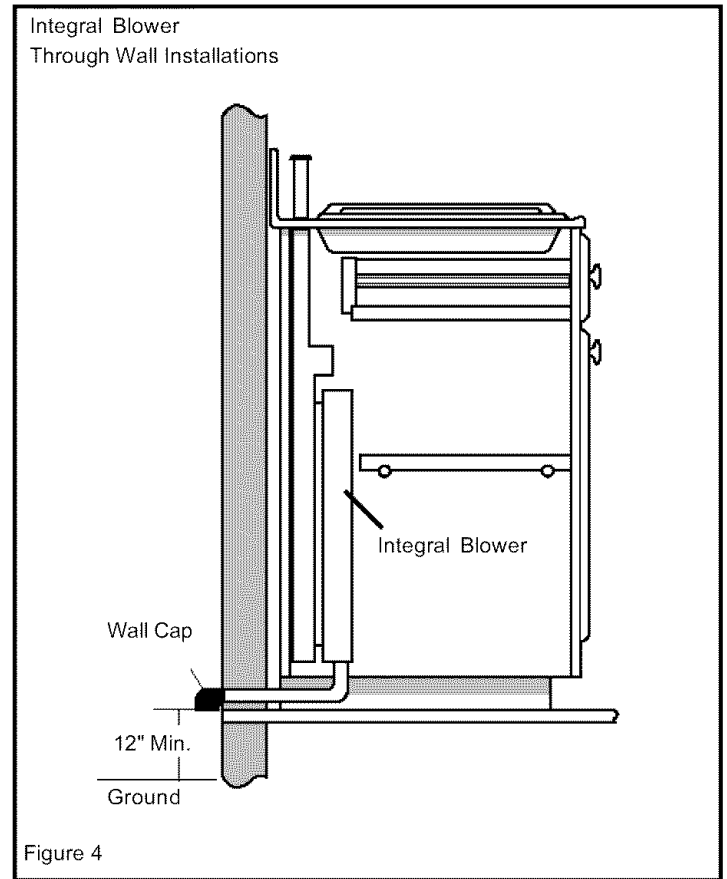
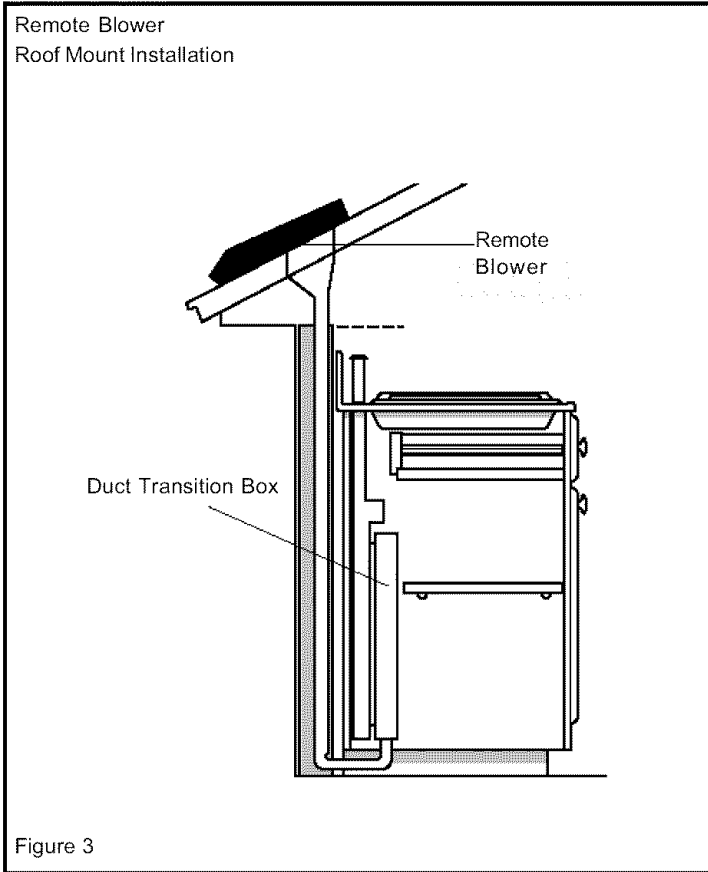
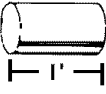
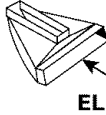
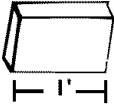
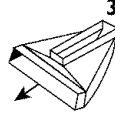

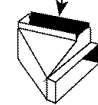

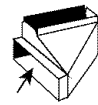
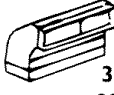

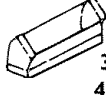


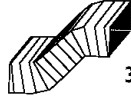
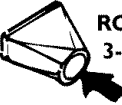
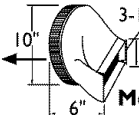

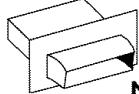
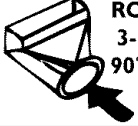
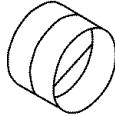

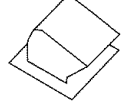


TABLE I. VENTILATOR PERFORMANCE CALCULATION

DUCT PIECES	SIZE	EQUIVALENT LENGTH	QUANTITY USED	TOTAL EQUIVALENT LENGTH	DUCT PIECES	SIZE	EQUIVALENT LENGTH	QUANTITY USED	TOTAL EQUIVALENT LENGTH
 ROUND STRAIGHT	6"	1.2'			 3-1/4"X 10" CENTER REVERSE ELBOW LEFT	N/A	15'		
	7"	0.95'							
	8"	0.7'							
	10"	0.6'							
	3-1/4" x 10" STRAIGHT	1'			 3-1/4"X 10" CENTER REVERSE ELBOW RIGHT	N/A	25'		
	3-1/4" x 14" STRAIGHT	0.7'							
 90° ELBOW ROUND	6"	12'			 3-1/4"X 10" RIGHT REVERSE ELBOW	N/A	25'		
	7"	8'							
	8"	6'							
 45° ELBOW ROUND	6"	5'			 3-1/4"X 10" LEFT REVERSE ELBOW	N/A	15'		
	7"	4'							
	8"	3'							
 3-1/4"X10" 90° ELBOW	N/A	5'			 ROUND WALL CAP Model #WC8 Model #WC10	6"	2'		
						7"			
						8"			
						10"			
 3-1/4"X10" 45° ELBOW	N/A	15'			 ROUND ROOF CAP	6"	2'		
						7"			
						8"			
 3-1/4"X10" FLAT ELBOW	N/A	20'			 3-1/4"x10" Flex Model #RD 1	2' long	20'		
 ROUND TO 3-1/4"X10"	6"	1'			 3-1/4"x10" to Round Model 310TR10	10"	1'		
	7"	1'							
 3-1/4"X10" TO ROUND	6"	5'			 3-1/4"x10" Wall Cap Model WC310	10"	2'		
	7"	3'							
 ROUND TO 3-1/4"X10" 90° ELBOW	6"	10'			 7" In-Line Backdraft Damper Model # I 40	10"	5'		
	7"	8'							
 3-1/4"X10" TO ROUND 90° ELBOW	6"	10'			 3-1/4"x10" Roof Jack & Shutter, Model # RJ310	10"	5'		
	7"	5'							

TOTAL (of both columns)=

NOTE: Fittings with model numbers stated are available through your Thermador dealer. All other fittings are available from most major hardware stores.

DUCTWORK INSTALLATION GUIDELINES

- For safety reasons, ducting should vent directly outdoors (not into an attic, underneath the house, into the garage or into any enclosed space).
- Keep duct runs as short and straight as possible.
- Duct fittings (elbows and transitions) reduce air flow efficiency.
- Back to back elbows and "S" turns give very poor delivery and are not recommended.
- A short straight length of duct at the inlet of the remote blower gives the best delivery.
- Transition to duct from the integral blower or remote duct transition as close to the downdraft as is possible. In order of preference, use
 - 1st. 10" round duct
 - 2nd. 8" round duct
 - 3rd. 3-1/4" x 14" duct
 - 4th. 7" round duct
 - 5th. 3-1/4" x 10" duct
 - 6th. 6" round duct
- The use of flexible metal round duct should only be used when no other duct fitting exists. Limit use to short lengths and do not crush when making corners.
- Where local codes permit, plastic pipe (PVC-schedule 40 pipe or ABS pipe 7" or 8" diameter) can be used in areas of high ground moisture and in slab floors to eliminate future rusting.
- Use only duct work constructed of materials that are acceptable by the applicable codes. All duct should be 26 gauge or heavier to minimize flex due to air flow.
- The remote blowers requires a 10" or 8" diameter round duct (depending on model) to match the inlet ring. A transition is necessary from other duct sizes.
- Use sheet metal screws as required to support the duct weight, and seal all joints with duct tape.
- Be certain that the duct work does not interfere with floor joists or wall studs.
- Do not exhaust more than one vent into a single duct run.
- Thermal breaks, such as a short section of nonmetallic duct, should be used in areas of extreme cold.
- Always use an appropriate roof or wall-cap with damper. Laundry type wall caps should never be used.

Step 2: Prepare Countertop Cutout

For installation with a Thermador cooktop, refer to Part A (at left) and Figure 7 (Page 7)). For installation with another brand of cooktop, refer to Part B (Page 8).

For all installations verify that all cutouts will clear the inside of the front countertop support rail, and that the cooktop and vent will be centered left to right within the cutout. Also, make certain that the front and rear cutouts are straight and parallel to the front edge of countertop and the rear backsplash and/or wall. Assure that the side cutouts are square to the front and rear cutouts. All illustrations and dimensions are based on standard 24" deep by 36" high American style base cabinets with 25" countertops.

When installing laminated or solid surface countertops such as Surell™ and Corian®, be sure to follow the countertop manufacturer's instructions regarding minimum corner radii, reinforcement of corners, etc.

For overhead cabinet and cooktop side clearances consult cooktop Installation Instructions.

A. FOR INSTALLATION WITH A THERMADOR COOK TOP (FIGURE 7 AND TABLE 3)

Provide an opening in the countertop as specified in Table 3 (Page 8). Make sure that the distance from the front of the countertop to the front of the cutout is not less than dimension "SB". Verify that the available flat countertop is greater than dimensions "OW" by "OD". Make certain that the backsplash thickness does not exceed dimension "BT".

TABLE 2: INSTALLATION DIMENSIONS FOR CVS2 WITH THERMADOR COOKTOP

Cooktop Model No.	CW Cutout Width	CD Cutout Depth	OW Overall Width	OD Overall Depth	SB Minimum Set Back	BT, Max++ Backsplash Thickness
30" Cooktops: Installed with CVS230 / UCV230						
SGS304*	28-15/16	22-1/4	31	23-3/4	1-1/2	3/4
SGSX304*	28-15/16	22-1/4	31	23-3/4	1-1/2	3/4
CET304	28-3/4	22-1/8	31	23-7/8	2-1/2	0
CEP304	28-3/4	22-1/8	31	23-7/8	2-1/2	0
CEM304	28-3/4	22-1/8	31	23-7/8	2-1/2	0
36" Cooktops: Installed with CVS236 / UCV236						
SGS365**	34-15/16	22-1/4	37	23-3/4	1-1/2	3/4
SGSX365**	34-15/16	22-1/4	37	23-3/4	1-1/2	3/4
CET365	34-3/4	22-1/8	37	23-7/8	2-1/2	0
CEP365	34-3/4	22-1/8	37	23-7/8	2-1/2	0
CEM365	34-3/4	22-1/8	37	23-7/8	2-1/2	0
45" Cooktops: Installed with CVS245 / UCV245						
SGS456	43-15/16	22-1/4	46	23-3/4	1-1/2	3/4
SGSX456	43-15/16	22-1/4	46	23-3/4	1-1/2	3/4
CET456	43-3/4	22-1/8	46	23-7/8	2-1/2	0
CEP456	43-3/4	22-1/8	46	23-7/8	2-1/2	0
CEM456	43-3/4	22-1/8	46	23-7/8	2-1/2	0

Table 2 Notes

* Dimension "SB" is the minimum distance from the leading edge of the counter to the leading edge of the cutout.

++Dimension "BT" is the thickness of backsplash that provides 1/4" clearance between vent and backsplash. Any backsplash with a curved radius where it meets the counter will require additional clearance. Thicker backsplashes may be used by increasing the counter and cabinet depths.

All dimensions are in inches and are based upon a standard 24" deep base cabinet with 25" countertop.

** SGS and SGSX: width in table is at the widest point (center).

Refer to cooktop Installation Instructions for complete information prior to making any cutouts.

Clearance is provided to allow raising of the hinged main top.

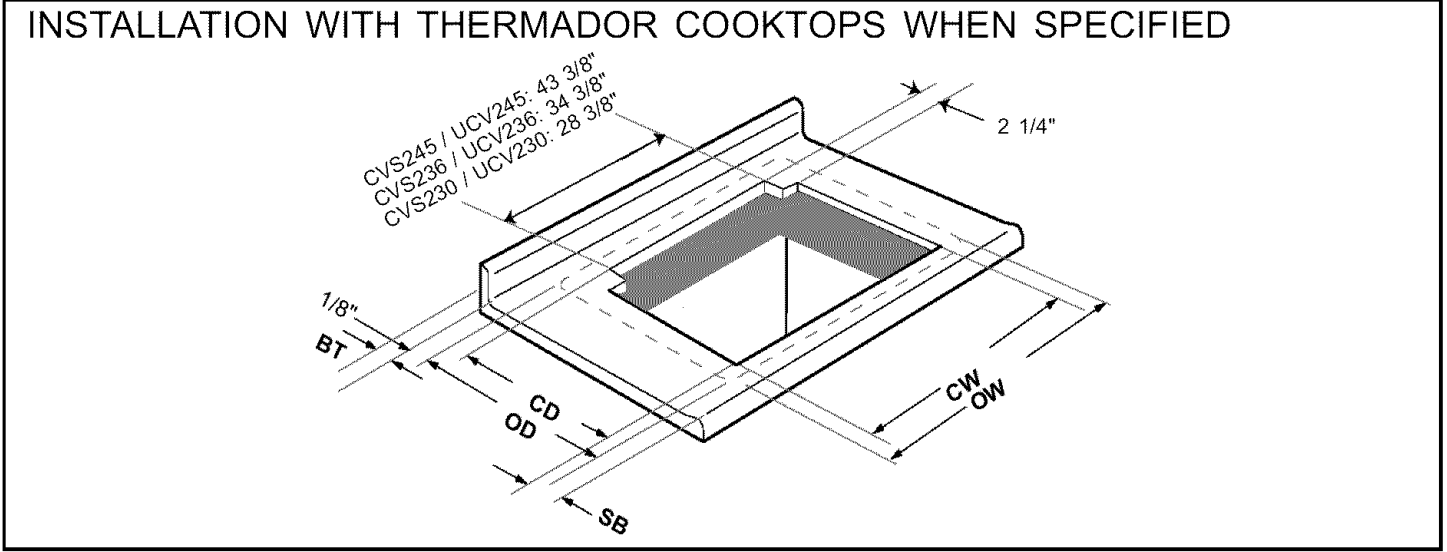


Figure 7

INSTALLATION WITH OTHER COOKTOPS WHERE SPECIFIED (SEE PART B)

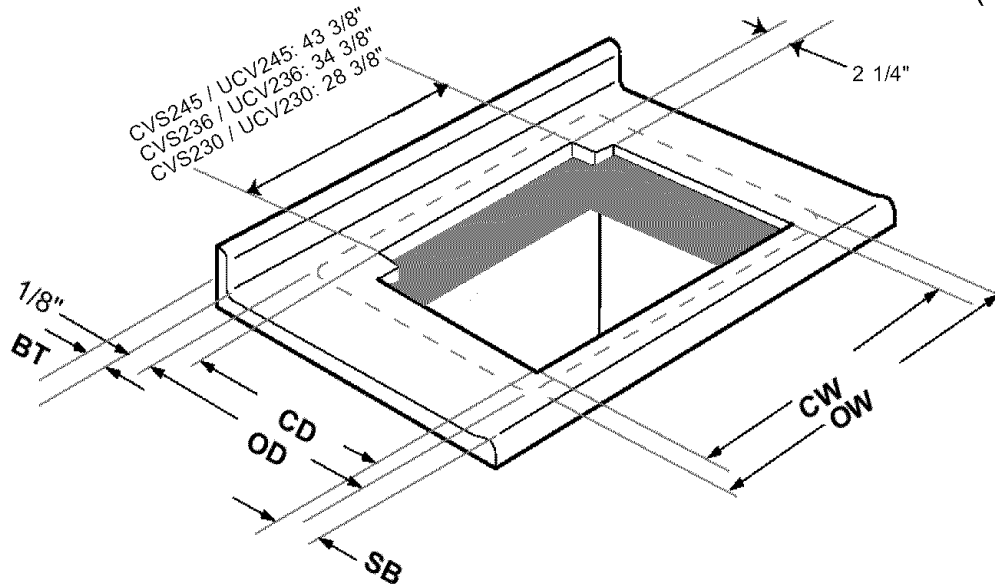


Figure 8

B. FOR INSTALLATION WITH ANOTHER BRAND OF COOKTOP (Figure 8)

Have the following cooktop measurements available before proceeding. All cooktop dimensions should be verified through measurement prior to cutting the countertop:

CCW = Cooktop Cutout Width
 CCD = Cooktop Cutout Depth
 COW = Cooktop Overall Width
 COD = Cooktop Overall Depth

with the above dimensions confirmed, determine the cutout size as follows:

1. Find the cutout width, (CW):

If CCW is **smaller** than the CVS2 / UCV2 cutout width then:

Installation	CW
CVS230 / UCV230	28 ^{3/8}
CVS236 / UCV236	34 ^{3/8}
CVS245 / UCV245	43 ^{3/8}

If CCW is larger than the CVS2 / UCV2 cutout width then:

CW = CCW

See Figure 8 for CVS2 / UCV2 cutout widths and dimension definitions.

2. Calculate the cutout depth, CD:

Determine the cooktop overhang (CO)

$CO = (COD - CCD) / 2$ (Assumes front and rear cooktop overhangs are equal) Calculate the cutout depth, (CD):

$$CD = COD - CO + 1 - 7/8"$$

3. Determine setback (SB) distance from front of countertop to front of cutout. SB is specified in the installation instructions shipped with the cooktop.

4. Backsplash thickness must not exceed BT as calculated below:

$$BT = 24 \frac{7}{8}" - OD - SB + CO$$

(Provides 1/8" clearance between vent and backsplash.)

A negative value for BT means countertop is too small for the installation.

5. Verify that the available flat countertop has a width greater than OW and a depth greater than OD.

OW depends on the installation:

CVS230 / UCV230: OW equals the greater of COW or 30".

CVS236 / UCV236: OW equals the greater of COW or 36".

CVS245 / UCV245: OW equals the greater of COW or 45".

OD is determined by: $OD = COD + 2 \frac{1}{8}"$.

6. Cut countertop using dims: CD, CW and SB as defined in Figure 8.

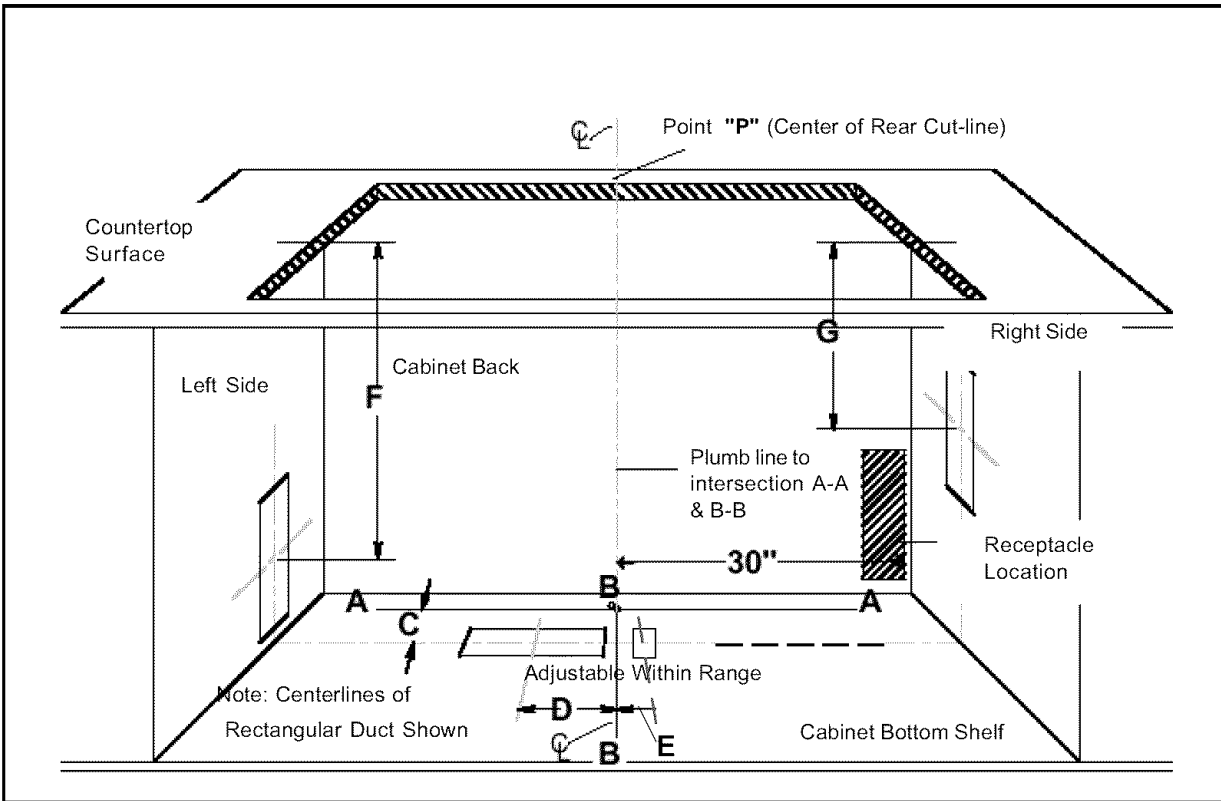


Figure 9: Cabinet Cutout for Ductwork

Cabinet Cutout Dimensions for Blower:

C	D	E	F	G
6 3/8"	14 1/2"	1 7/8"	15 1/2"	9 3/4"

Table 4: Cabinet Cutout Dimensions

STEP 3: Prepare Duct Cutouts in Cabinet

- A. Refer to Figure 9. Drop a plumb-line from Point "P" at the rear center of the countertop cutout. Mark this point on the bottom of the cabinet below. Construct two reference lines through this point: one should be parallel to the cabinet front and directly below the rear countertop cutout (Line A-A), and the other (Line B-B) should be at right angles to A-A.
- B. Using these reference lines as a base for the measurements shown in Table 4, layout the necessary cabinet cutouts needed to implement the planned ductwork route. Where a range of measurements is noted, choose a measurement that allows best clearance from wall studs, floor joists, utilities, or other obstructions.
- C. Temporarily set intake and cooktop in place and attach integral blower (or duct transition fitting if a remote blower is installed). Refer to steps 6 and 7. Verify that the duct cutouts as marked will match the hardware installation. Adjust the duct cutout as necessary to match hardware installation.
- D. Remove temporarily placed hardware and make cutouts in cabinet to accommodate ductwork installation.
- E. Make all other cabinet modifications needed to provide proper clearances for drawers or removable shelving.

Step 4: Install Ductwork (Remote Blower, If Used)

- A. Install the ductwork and remote blower (if used) in accordance with the ductwork routing plan developed in Step 1.
- B. Make sure that the installation complies with all installation guidelines in Table 2. Also check that the opening where duct passes through outside wall or roof has been properly flashed and sealed to prevent leakage.
- C. If using Integral Blower, Model VTN600CV2C, proceed to Step 5.
- D. If using Remote Blower Model VTR600R or VTR1000Q, refer to Installation Instructions with that model.

Step 5: Install Electrical Service

Check your local building codes for proper method of installation. In the U.S., if there are no applicable local codes, this unit should be installed in accordance with the National Electric Code ANSI/NFPA No. 70, Current Issue. (In Canada, installation must be in accordance with the CAN 1-B149.1 and .2 - Installation Codes for Gas Burning Appliances and/ or local codes).

The appliance must be grounded. In the event of an electrical short circuit, grounding reduces the risk of electric shock by providing an escape wire for the electric current. This appliance is equipped with a cord having a grounding wire with a grounding plug. The plug must be plugged into an outlet that is properly installed and grounded.

WARNING - Improper grounding can result in a risk of electric shock.

Consult a qualified electrician if the grounding instructions are not completely understood, or if doubt exists as to whether the appliance is properly grounded.

Do not use an extension cord. If the power supply cord is too short, have a qualified electrician install an outlet near the appliance.

The receptacle should be located under the countertop so that the 30 inch long power cord from the vent will reach it. See Figure 9. The cord should be routed beneath the appliance and away from heat generated by the cooktop. Access should not be obstructed by blower, cabinet work, ductwork or electrical/gas utilities for the cooktop. All power for the vent system (including the remote blower, if used) is supplied via the cord to the intake unit. The outlet can usually be extended from another kitchen outlet or have its own circuit from the main service panel.

Do not plug vent cord into receptacle until Step 8.

Step 6: Mount Vent and Cooktop

- A. Remove grease filters and any packing materials from inside the intake.
- B. Set the vent intake into rear of countertop opening. Carefully lower it into position so that the flanges on the rear sides and edges fully support the unit hanging from the countertop.
- C. Hold the unit against the rear of the countertop opening, and slide the leg brackets down to meet the bottom of cabinet. Check and adjust for plumb, then fasten leg brackets to cabinet with hardware provided.
- D. Place the cooktop in countertop opening with the rear edge of cooktop overlapping the front edge of the vent. **Make sure rear edge of cooktop does not bind against front of snorkel.** Follow the manufacturer's installation instructions for installing gasket strips, protective heat tape (if required), securing the cooktop to the countertop and making the cooktop electrical and/or gas connections.

Step 7: Mount Integral Blower or Outlet Duct Transition for Remote Blower

Integral Blower VTN600CV2C (See Figures 10 and 12 for further detail):

- Attach blower in front of round exhaust outlet with 4-6 (depending on configuration) #8 sheetmetal screws
- Feed cord **from blower** through strain relief.
- Secure strain relief with screws.
- Attach strain relief to downdraft near junction box.
- Connect cord to downdraft at 6 pin connector
- Connect blower to ductwork.

Remote Blower VTR600R or VTR1000Q
(See Figures 11 and 12 for further detail):

- Remove junction box cover and connect conduit with 5 wires from remote blower. Hook up wires per Wiring Diagram, Fig. 10. Replace junction box cover.
- Attach duct transition Model CV2T6 at mounting holes with sheetmetal screws.
- Feed remote blower pigtail through strain relief.
- Attach strain relief to downdraft near junction box.
- Connect pigtail to downdraft at 6 pin connector.
- Run pigtail wires to junction box.
- Inside junction box, connect conduit with five wires from remote blower. Use a conduit connector to secure.

Note: Blower and duct transition box may be installed with duct outlet left, down or right. Install blower or duct transition in such a way that access panels can be removed for service.

Figure 10 - Internal Blower

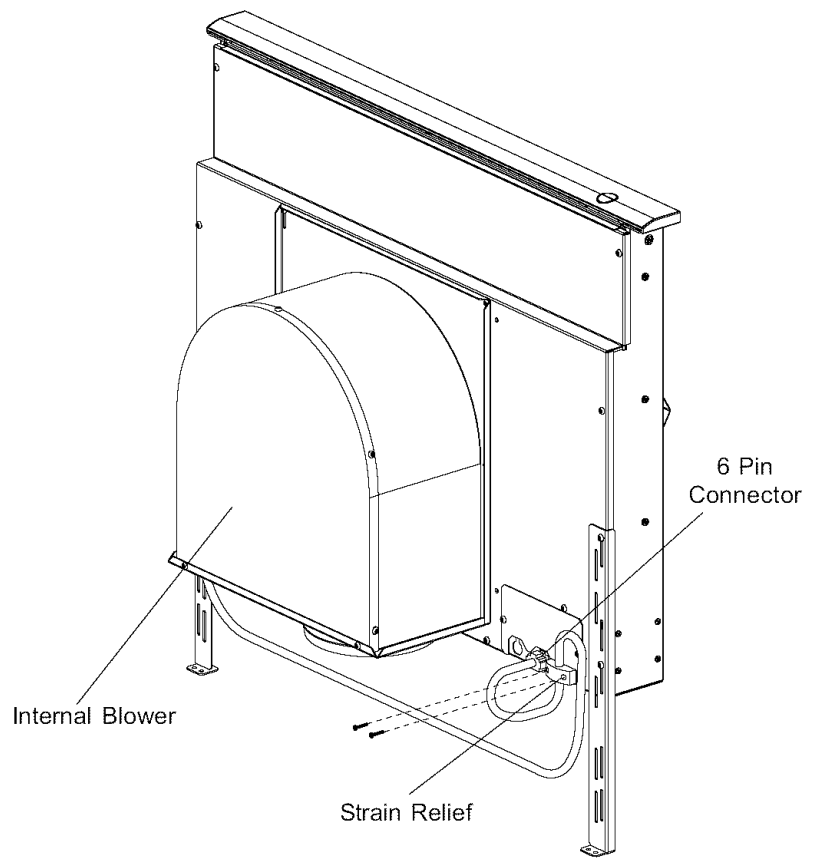
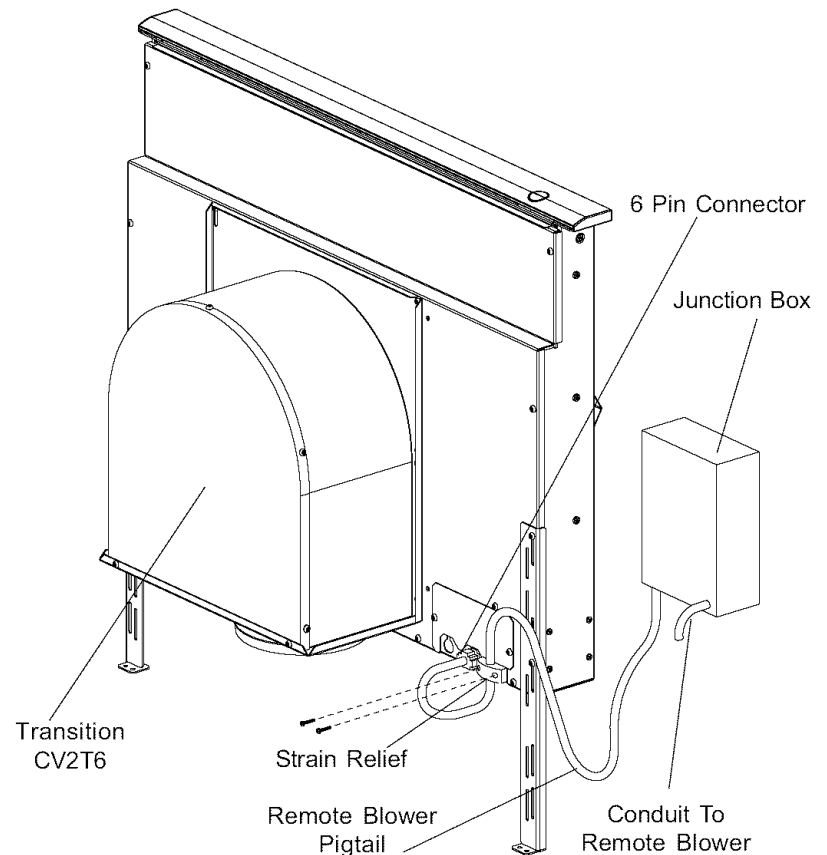


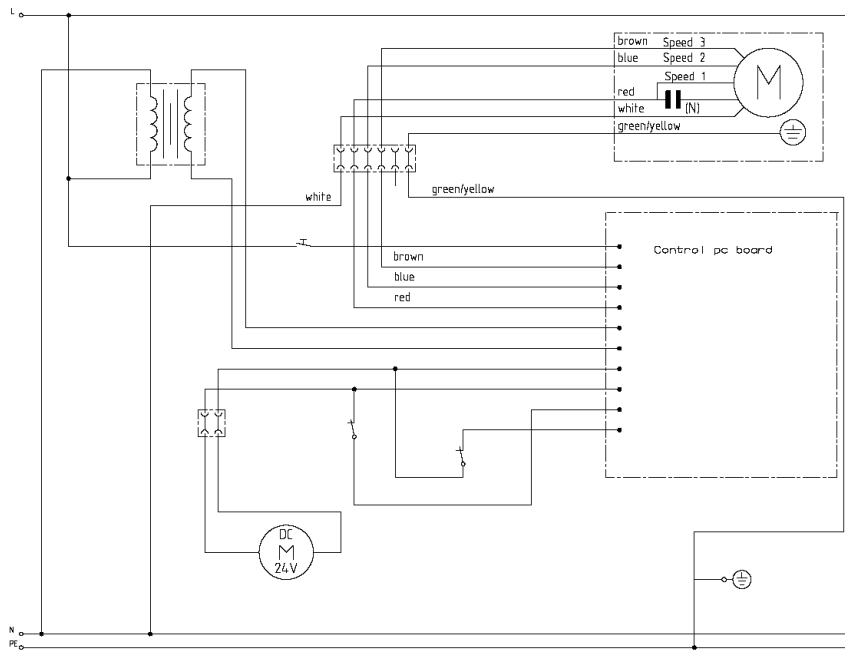
Figure 11 - Remote Blower



CVS2

Figure 12 - Wiring Diagram

WARNING: POWER MUST BE DISCONNECTED BEFORE SERVICING THIS APPLIANCE



SW POSITION SHOWN WITH DOWNDRAFT IN LOWERED POSITION

ABBREVIATIONS:

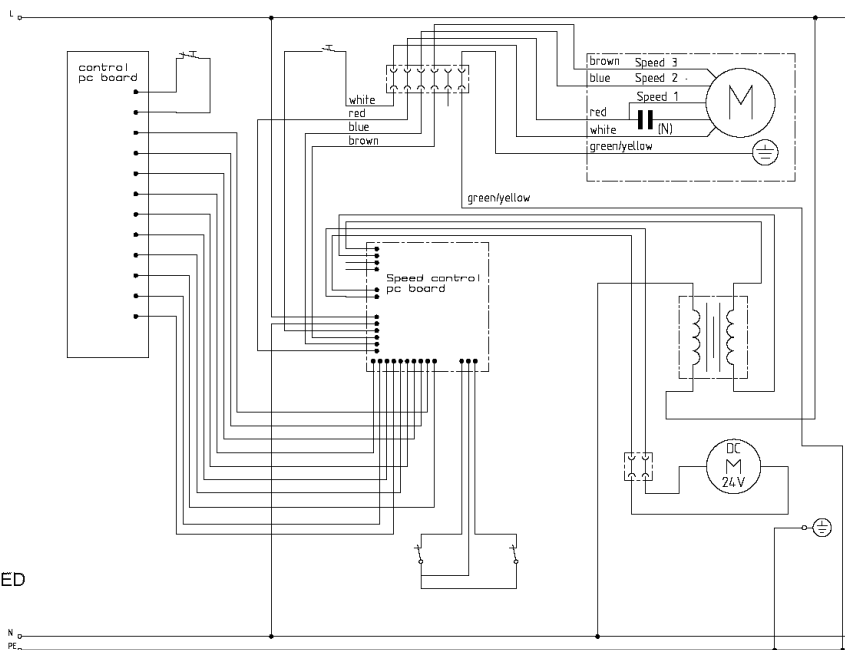
C= COMMON
NO = NORMALLY OPEN
NC = NORMALLY CLOSED

POWER
3 WIRE SINGLE PHASE 60 Hz
L1: 120 V
N: GROUNDED WHITE WIRE
SPEED 1 RED WIRE
SPEED 2 BLUE WIRE
SPEED 3 BROWN WIRE
GND: GROUNDED GREEN WIRE
RATING: 120V-10A

UCV2

Figure 12 - Wiring Diagram

WARNING: POWER MUST BE DISCONNECTED BEFORE SERVICING THIS APPLIANCE



SW POSITION SHOWN WITH DOWNDRAFT IN LOWERED POSITION

ABBREVIATIONS:

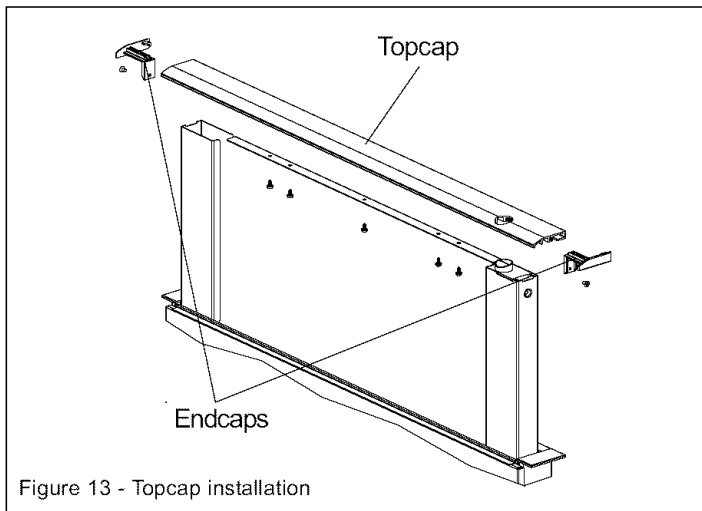
C= COMMON
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L1: 120 V
N: GROUNDED WHITE WIRE
SPEED 1 RED WIRE
SPEED 2 BLUE WIRE
SPEED 3 BROWN WIRE
GND: GROUNDED GREEN WIRE
RATING: 120V-10A

Step 8: Install Coordinating Topcap (if applicable) only for CVS2

The downdraft is shipped from the factory with a stainless steel topcap. Color coordinating topcaps in white and black are available as accessory parts.

- A. Remove filters and set aside. Remove 4 screws from below topcap and two screws (one on each side) from endcaps. Discard topcap and endcaps. Set screws aside.
- B. Install new endcaps and topcap as seen in Figure 13 (insert endcaps first). Replace screws.



Step 9 Verify Installation, Operation and Cooktop Alignment

Before performing this procedure, verify that all packing materials were removed from inside the snorkel and that the grease filters and front panel have been properly installed. Refer to the Care and Use Manual for instructions regarding filter and front panel installation.

Plug the vent power cord into a proper electrical receptacle and ensure that the circuit is energized.

- A. Raise the snorkel to its fully extended position by pressing the UP/DOWN push-button once (Figure 12). Do not hold the push-button. The elevating motor will stop when the snorkel reaches its full height. (Note: the blower will not operate unless the snorkel is fully raised).
- B. Remove protective tape from top cap.
- C. Turn the blower ON by selecting in turn each of the 3 speeds. Let the blower run several minutes at each speed to evaluate its operation.
- D. With the blower running, lower the snorkel to its fully retracted position by pressing the UP/DOWN push-button once. The blower will immediately turn off.
- E. With the blower on HIGH, close the windows and doors to the area to ensure that fan does not cause back drafting in any outlet vent for another appliance.
- F. Raise and lower the vent again, and check to make sure that the top cap on the snorkel does not catch on the back edge of the cooktop when it is lowered. If interference occurs, adjust the position of the cooktop by moving it against the front edge of the countertop cutout, then re-secure the cooktop to the countertop. Failure to eliminate interference may result in permanent damage to the vent. Also, ensure that the vent support legs have been properly secured to the cabinet base using the screws provided.

If the vent system does not operate satisfactorily during any of the above procedures, review all steps in these Installation Instructions to ensure that nothing has been omitted or overlooked. Also, refer to the Care & Use Manual for additional information or call Thermador Customer Support 1-800-735-4328.

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