Dayton®

Commercial Kitchen Exhaust Hoods

Models 6KWK8, 6KWK9, 6KWL0, 6KWL1, 20UD05 thru 20UD12

474244

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 5S6781 / Printed in USA
04632 Version 1 07/2014

BEFORE YOU BEGIN

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

Tools Needed:

- Level
- 1/2 inch Diameter Threaded Rod
- Weld Gun and Non-Ferrous Filler Wire
- Rotating Vane Anemometer or Shortridge Meter
- Up to 100 Watt Standard Light Bulbs
- Light Switche(s)
- Fire System Control Box

UNPACKING

Contents:

- Duct Collars (3)
- Dayton® Commercial Kitchen Exhaust Hood (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.

Storage

NOTE: If a kitchen hood must be stored prior to installation it must be protected from dirt and moisture.

1. Indoor storage is recommended. For outdoor storage, cover the hood with a tarp to keep it clean, dry, and protected from Ultra Violet Radiation damage.

IMPORTANT: Improper storage which results in damage to the unit will void the warranty.

- **See General Safety Instructions on page 2, and Cautions and Warnings as shown.**

Dayton®

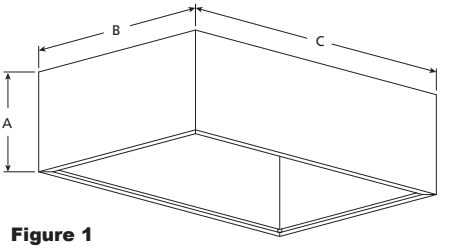
GENERAL SAFETY INSTRUCTIONS

Type II exhasut hoods are designed to capture heat and condensation from non-grease producing appliances, creating a more comfortable environment for the cooking staff. Models 20UD07-20UD09 are primarily used for ovens or general ventilation applications to capture heat and vapor. Models 20UD10-20UD12 are primarily used for dishwasher or condensate applications to capture heat and vapor. Hoods are constructed with a fully welded perimeter, condensate collecting gutter with a 1/2 inch N.P.T. stainless steel drain fitting. Type II hoods comply with all requirements set forth in NSF Standard 2.

NOTE: No repair parts available for Type II Hoods.

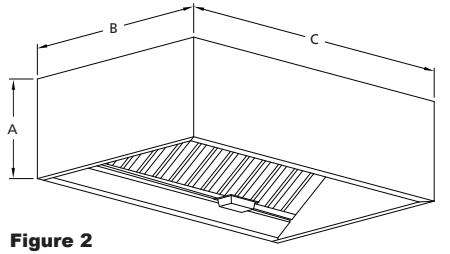
Type I wall canopy exhaust hoods are designed for use over cooking equipment producing heat and grease laden effluent and are intended to be used where cooking equipment is placed against a wall. Models 20UD05, 20UD06 and 6KWK8-6KWL1 are listed for working temperatures up to 600ºF. All canopy Type I hoods are UL/cUL 710 Listed, Exhaust Hoods for Commercial Cooking Equipment. Type I hoods comply with all requirements set forth in NSF Standard 2 and NFPA 96 Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations.

1. Read and follow all instructions and cautionary markings. Make sure electrical power source conforms to requirements of equipment and local codes.
2. Canopy hood should be installed and serviced by a qualified technician. Have all electrical work performed by a qualified electrician.
3. Follow all local electrical and safety codes in the United States and Canada, as well as the National Electrical Code (NEC), the Occupational Safety and Health Act (OSHA), and the National Fire Protection Association (NFPA) Bulletin 96 in the United States. Ground motor in accordance with NEC Article 250 (grounding). Follow the Canadian Electric Code (CEC) in Canada.



NSF

Figure 1



c UL us LISTED
E53236

NSF

Figure 2

SPECIFICATIONS

Heat And Condensation Hoods (See Figure 1)

	Heat Hoods			Condensation Hoods		
	20UD07	20UD08	20UD09	20UD10	20UD11	20UD12
Hood Type	Canopy, Type II					
Material	430 Stainless Steel (where exposed)					
Agency Compliance	NSF Standard 2					

Dimensions (inches)

	Heat Hoods			Condensation Hoods		
	20UD07	20UD08	20UD09	20UD10	20UD11	20UD12
A	24	24	24	24	24	24
B	54	54	54	54	54	54
C	48	60	72	48	60	72

Grease Hoods (See Figure 2)

	20UD05	20UD06	6KWK8	6KWK9	6KWL0	6KWL1
Hood Type	Canopy, Type I					
Material	430 Stainless Steel (where exposed)					
Max. Temp.	600ºF					
Number of Light Fixtures	2	2	2	3	3	4
Recommended Air Supply Plenum	20UD13	20UD14	6KWL2	6KWL3	6KWL4	6KWL5
Recommended End Skirt	6KWL6	6KWL6	6KWL6	6KWL6	6KWL6	6KWL6
Recommended Digital Temperature Interlock	48C175	48C175	48C175	48C175	48C175	48C176
Recommended Digital Temperature Interlock Sensor	48C177	48C177	48C177	48C177	48C177	48C177
Agency Compliance	UL 710, NSF Standard 2					

Dimensions (inches)

	20UD05	20UD06	6KWK8	6KWK9	6KWL0	6KWL1
A	24	24	24	24	24	24
B	54	54	54	54	54	54
C	48	60	72	96	120	144

Dayton

INSTALLATION INSTRUCTIONS

⚠ WARNING ***Installation, troubleshooting and parts replacement is to be performed only by a qualified personnel. Consult and follow NFPA 96 recommendations. NFPA 96 instructions supercede this document.***

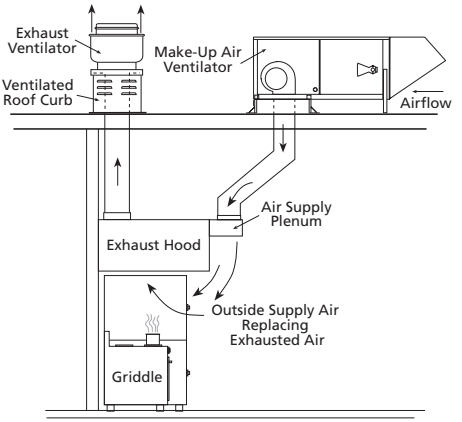


Figure 3

1. Prior to installation, check with local authorities having jurisdiction on clearances to combustible surfaces, etc.

NOTE: Code for overhanging is a minimum of 6" on canopy hoods. ASHRAE Research recommends 9-18". More is typically better especially for some appliances. See Figure 4.

2. With the hood still inside its packing crate, position the unit beneath its installation location. Carefully remove the packing crate. Place some protective material on the floor next to the crate to avoid damaging the hood. Tip the hood on its side carefully onto the protective material, see Figure 5.

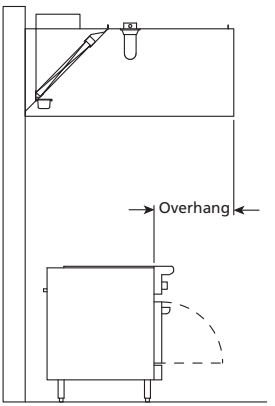


Figure 4

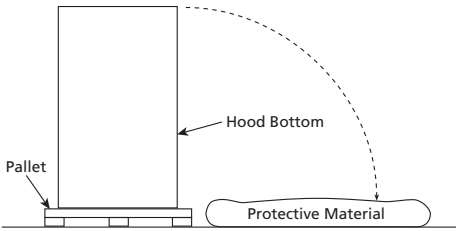


Figure 5

3. Before raising hood, insert 1/2 inch diameter threaded rod (by others) into hanger brackets on hood top.

4. Install hood 6 feet 6 inches to 7 feet above the finished floor. This information is also given on the UL label located on the inside end panel of the hood.

IMPORTANT: Hood hanging height is critical, hanging the hood at the incorrect height may significantly reduce the ability for the hood to function properly and may be in violation of codes.

5. Raise and hang hood from adequate roof or ceiling supports. All hanger brackets must be used and the hood must be properly supported while lifting to prevent damage or distortion to the hood.

IMPORTANT: Canopy hood must be hung level to operate properly. The grease trough is pitched to drain into the grease container.

6. After hood is secured, make the exhaust duct connections.
7. A fire system distributor must be contacted. After the fire system has been installed, install optional air supply plenum (models 20UD13, 20UD14 or 6KWL2-6KWL5), refer to instructions provided.
8. Complete the fire system circuits as required by the job specification.

⚠ WARNING ***Installation of the canopy hoods shall be in accordance with NFPA 96, Standard for Ventilation Control & Fire Protection of Commercial Cooking Operations.***

9. After the hood is installed, remove all protective plastic.

IMPORTANT: Do not walk or stand on the hood top as damage can result.

10. Install optional end skirts (6KWL6), temperature interlock (6KWL7, 6KWL8), temperature interlock sensor (6KWL9) and/or control panel (by others). Refer to instructions provided.

Exhaust Duct Mounting

NOTE: Three size duct collars are provided with each kitchen exhaust hood, only one collar should be used. For proper sizing, refer to the Types of Cooking Equipment and chart on page 6.

Types of Cooking Equipment – Grease Level		
Light	**Medium**	**Heavy**
Gas/Electric Steamer	Combi-Ovens	Upright Broiler
Gas/Electric Oven	Gas/Electric Fryer	Gas/Electric Char-broiler
Food Warmer	Griddle	Mesquite
Pasta Cooker	Tilting Skillet	Infrared Broiler
Dishwasher	Tilting Braising Pan	Lava Rock Char-broiler
Smoker	Grill/Hibachi Grill	Wok
Rotisserie	Salamander	Chain Broiler
Pizza Oven		

Model	Grease Level	Duct Velocity	CFM/ Ft.	CFM	Duct Collar Connection (inches)
20UD05	Light	1600	200	800	8 x 9
	Medium	1500	250	1000	8 x 12
	Heavy	1600	300	1200	9 x 12
20UD06	Light	1500	200	1000	8 x 12
	Medium	1500	250	1250	10 x 12
	Heavy	1500	300	1500	12 x 12
6KWK8	Light	1600	1200	1200	12 x 9
	Medium	1500	1500	1500	12 x 12
	Heavy	1543	1800	1800	12 x 14
6KWK9	Light	1600	1600	1600	12 x 12
	Medium	1500	2000	2000	12 x 16
	Heavy	1600	2400	2400	12 x 18
6KWL0	Light	1500	2000	2000	12 x 16
	Medium	1500	2500	2500	12 x 20
	Heavy	1500	3000	3000	12 x 24
6KWL1	Light	1600	2400	2400	12 x 18
	Medium	1500	3000	3000	12 x 24
	Heavy	1543	3600	3600	14 x 24

1. As specified in NFPA 96, Ch. 7.5, exhaust duct systems must be constructed in the following manner:

   a. Materials:
   Ducts shall be constructed of and supported by carbon steel not less than 1.37 mm (0.054 in.) (No. 16 MSG) in thickness or stainless steel not less than 1.09 mm (0.043 in.) (No. 18 MSG) in thickness.

   b. Installation:
   All seams, joints, penetrations, and duct to hood collar connections shall have a liquid-tight external weld.

2. The exhaust duct connection needs to be located within 48 inches from the center of the hood length to the center of the duct connection. See Figure 6 and Figure 7.

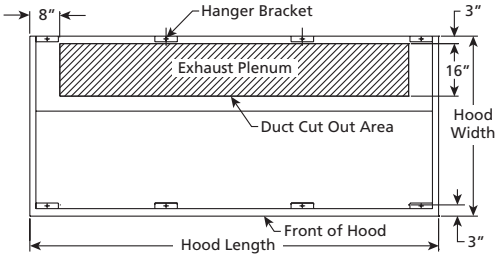


Figure 6

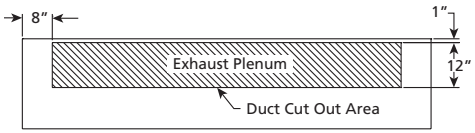


Figure 7

3. The exhaust duct connection is to be a continuous liquid- tight weld. Weld with a non-ferrous filler wire, such as silicon bronze or stainless steel filler wire.

IMPORTANT: Protect all stainless steel areas from weld splatter.

Electrical Connection

1. Access for wiring the hood lights is provided by a junction box located on top of the hood. Use minimum 14 AWG copper wire. After all the wiring is completed, install standard light bulbs (by others) up to 100 watt.

⚠ CAUTION ***For multiple hood systems that have more than 14 lights total (incandescent or fluorescent), the hood lights must be wired to multiple circuits. Each circuit must have less than 14 lights total.***

2. Standard light switches (by others) are rated for 15 amps and shall not have more than 14 lights connected to them.

3. Figure 8 shows a typical hood switch panel remote mounted. Refer to Figure 8 for how to wire the exhaust and supply fans with a control panel to a fire suppression contact (FSC1).

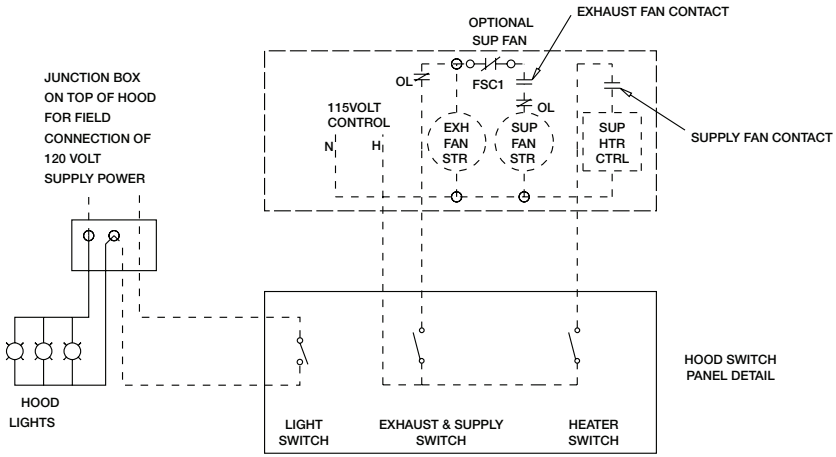


Figure 8

NOTE: When wired properly, the supply fan will be turned off if the fire system is activated and allow the exhaust fan to continue to operate.

4. The fire suppression contact (FSC1) is provided as part of the fire suppression system and is normally mounted in the fire system control box. (By others.)

Dayton

OPERATION

System Balancing

⚠ CAUTION ***According to NFPA 96, Ch. 8-3 Replacement Air: Replacement air quantity shall be adequate to prevent negative pressures in the commercial cooking area(s) from exceeding 4.98 kPa (0.02 in. water column).***

NOTE: For complete smoke removal, the quantity of air exhausted (QE) must be equal to, or greater than the quantity of air generated by the cooking equipment (QC).

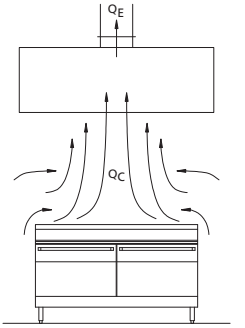


Figure 9

1. Determine the proper dining room air balance.
    a. Determine total exhaust CFM from dining areas. (Exhaust fans, heating and air conditioning units, restrooms, etc.).
    b. Determine the total CFM of make-up air supplied to dining area.
    c. Subtract (a) from (b) above. If the result is a negative number, a negative pressure is present in the dining area. In this case, kitchen exhaust odors could be drawn from the kitchen to the dining area. Therefore, exhaust or supply air should be adjusted to provide a slight positive pressure in the dining area.
2. Determine proper kitchen air balance.
    a. Determine total exhaust from the kitchen area. (Exhaust hoods, dishwasher hoods, etc.)
    b. Determine total CFM of make-up air supplied to kitchen area. (Make-up air hoods, heating and air conditioning units, etc.)
    c. Subtract (a) from (b) above. The result should be a negative number. If the result is a positive number, a positive pressure is present in the kitchen area. Kitchen odors could be forced into the dining area.

Test Exhaust Hood Air Volume

With all the filters in place, determine the total hood exhaust volume with a rotating vane anemometer or shortridge meter.

1. Rotating Vane Anemometer
    a. All cooking equipment should be on.
    b. Measure the velocities. Velocity measurements should be taken at five locations per filter. These must be over a filter slot as shown in Figure 10.

NOTE: When measuring the velocity of each location, a digital 2.75 inch rotating vane anemometer or equivalent is suggested. The center of the anemometer should be held parallel and 2 inches from the face of the filters as shown in Figure 11. Squareness and distance are very important for accuracy.

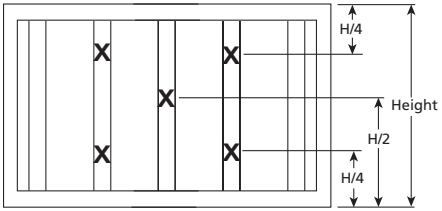


Figure 10

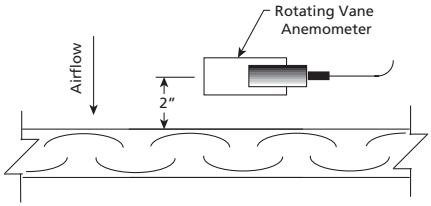


Figure 11

c. Calculate the average velocity for the filter. Determine the filter's conversion factor from the table. Calculate the filter's volume in CFM (m^3/hr) by multiplying the average velocity by the conversion factor. Calculate the hood's volume by repeating the process for the remaining filters and summing the individual filter volumes.

Nominal Filter Size (Height x Length)	Conversion Factor
20 x 16 inches	1.90
20 x 20 inches	2.48

2. Shortridge Meter

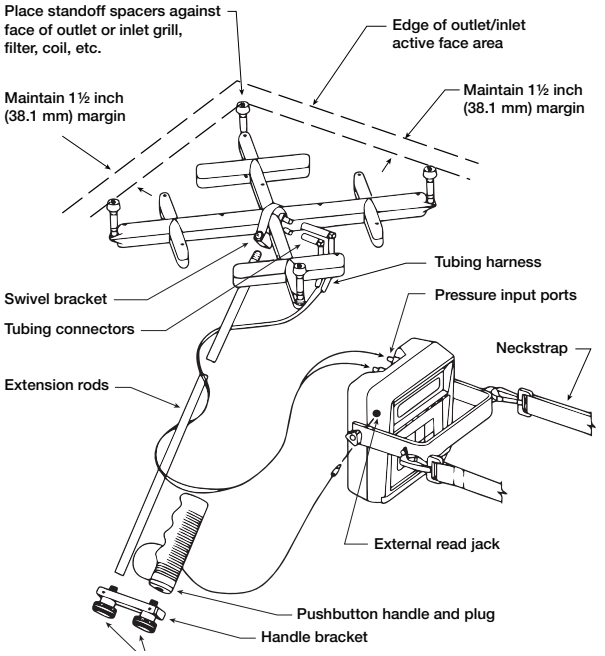


Figure 12

a. All cooking equipment should be on.

b. Measure the velocities. Set up the Shortridge meter. Position the grid as shown in Figure 13 and Figure 14. Average the two measurements. Take velocity readings for each filter.

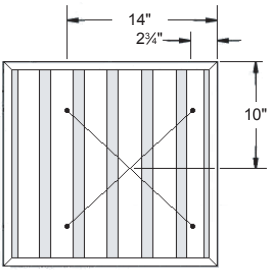


Figure 13

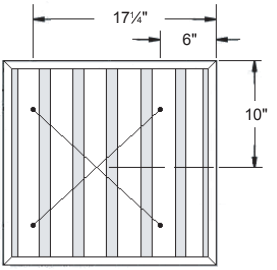


Figure 14

c. Calculate the average velocity for the filter. Determine the filter's conversion factor from the table. Calculate the filter's volume in CFM (m^3/hr) by multiplying the average velocity by the conversion factor. Calculate the hood's volume by repeating the process for the remaining filters and summing the individual filter volumes.

Nominal Filter Size (Height x Length)	Conversion Factor
20 x 16 inches	1.96
20 x 20 inches	2.40

FILTERS

1. Filters remove particulate, liquid or solid particles of grease/ cooking by-products. Filters will not remove vapor or gases!

TROUBLESHOOTING GUIDE

Symptom	Possible Cause(s)	Corrective Action
Exhaust fan is not operating or is not operating at design levels	1. Fan is not receiving power	1. Replace fuses, reset circuit breakers, check disconnect
	2. Belt loose or broken	2. Replace or tighten belt
	3. Fan is rotating in wrong direction	3. Have the electrician correctly wire the fan
	4. Make-up air unit not operating	4. Problems with make-up air may interfere with the exhaust fan - check the manufacturers installation manual
Hood is full of smoke or there is smoke coming out of the edges of the hood	1. Fan is not operating at design levels	1. See above troubleshooting section
	2. Fan is incorrectly sized	2. Refer to test and balance report, design specifications and fan curves; have an electrician check the motor amperage; try removing the filter temporarily to see if capture improves. (Make sure to replace filter to prevent risk of fire!) Switch to different filters with lower static pressure
	3. Filters not in good usable condition	3. Clean or replace damaged filters, properly position filters
	4. Insufficient make-up air (Kitchen should be in a slight negative but not excessive. Check to see if there is a strong draft through an open door)	4. Check make-up air unit, increase make-up air, make-up air should be evenly distributed throughout the kitchen
	5. Current cooking equipment does not match the original design	5. Adjust or replace fan to match the cooking equipment load
	6. Are there multiple hoods on one fan?	6. One hood may be over exhausting and the other hood not drawing enough. Restrict second hood to help problem hood
	7. Is the ductwork obstructed?	7. Clear obstruction
	8. Dirty or imbalanced fan	8. Clean the fan wheel/blade, replace fan wheel if damaged, check for loose bolts, check for broken or damaged components, check for rags and other foreign objects

Dayton®

TROUBLESHOOTING GUIDE (CONTINUED)

Symptom	Possible Cause(s)	Corrective Action
Smoke blows away before reaching the bottom of the hood	1. Fans directed at the hood or cooking equipment	1. Turn off or redirect fans
	2. Directional ceiling diffusers directing air at the hood	2. Move diffusers to more neutral area or replace with a perforated diffuser or diffuser that directs air away from the hood
	3. Open windows or doors	3. Close
	4. Cross drafts or other drafts in the kitchen	4. Find source of the draft and eliminate, add side skirts to hood; increase the amount of overhang on the spillage side; add a 6 in. lip around the base of the hood (test with cardboard – use stainless for permanent side skirts); make-up air should be spread out evenly through the kitchen
	5. Hood is near a main walkway	5. Add side skirts to hood; increase the amount of overhang on spillage side
	6. Pass-thru windows near the hood	6. Adjust amount and locations of make-up air to eliminate drafts through the pass-thru windows
	7. Excessive velocity from Air Curtain Plenum (if applicable)	7. Turn off or reduce the amount of make-up air being introduced through the air curtain plenum (supply air would have to increase from another source)
Pilot lights are being blown out or cooking	1. Drafts from make-up air	1. Turn off or reduce the amount of make-up air; block off portions of the supply to direct air away from the problem area (test with cardboard first); remove any obstructions in front of supply that directs air toward cooking equipment (supply air would have to increase from another source)
Cold air can be felt by the cook at the hood	1. Cold air being introduced through air supply plenum (if applicable)	1. Turn off or reduce the amount of air supplied to the air supply plenum; heat the supply air (supply air would have to increase from another source)
The kitchen gets hot	1. Hood is not capturing	1. Hood is not drawing enough air, refer to troubleshooting sections
	2. Hot air being introduced through air supply plenum (if applicable)	2. Turn off or reduce the amount of air supplied to the air supply plenum (supply air would have to increase from another source)

TROUBLESHOOTING GUIDE (CONTINUED)

Symptom	Possible Cause(s)	Corrective Action
Cooking odors in the dining area	1. Hood is not capturing	1. Hood is not drawing enough air, see sections above on fan performance and hood capture
	2. Draft through doors between the kitchen and dining area	2. Decrease make-up air in the kitchen; increase exhaust air through hood
Grease is running off the hood	1. Grease on top of the hood	1. Exhaust duct is not correctly welded
	2. Hood caulking missing or damaged	2. Clean problem area and re-caulk
	3. Grease cup is not inserted properly	3. Put grease cup back in place
Hood is noisy	1. Fan is running in the wrong direction	1. Refer back to page 6 troubleshooting sections
	2. Filters are not in place	2. Replace missing filters
	3. Hood is over exhausting	3. Slow down fan (see above troubleshooting sections)

Dayton®

MAINTENANCE

Daily

1. Wipe grease from exposed metal surfaces on the hood interior using a clean, dry cloth.
2. Visually inspect the filters or cartridges for grease accumulation.
3. Remove grease cup, empty contents, and replace cup.

Weekly

1. Remove the grease filters or cartridges and wash in dishwasher or pot sink.

NOTE: Filters installed over heavy grease producing equipment may require more frequent cleaning. See Filter Cleaning Schedule Guide.

2. Before replacing filters, clean the interior plenum surfaces of any residual grease accumulations.

Periodic

1. Stainless steel hood exterior surfaces should be cleaned with a mild detergent and then polished with a good grade stainless steel polish to preserve the original luster.

NOTE: Never use abrasive cleaners or chemicals on hood surfaces. Never use chlorine based cleaners or iron wool pads to clean the hood. They may scratch or mar the material. Always rub with the grain of the stainless.

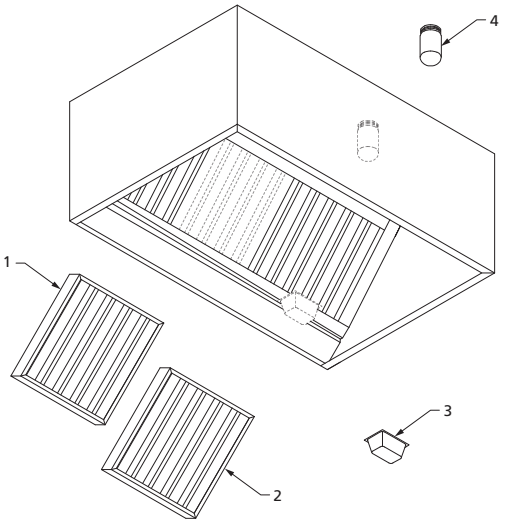
2. To maintain optimum performance of your hood and fan, duct cleaning should be performed as often as the application and code requires.
3. Re-caulk the hoods with an NSF Approved silicone caulk, (GE SCS1000 or its equivalent) as needed.

Filter Cleaning Schedule Guide

Preference	Type	Temp. (°F)	Cooking Equipment	Chemical	Frequency Required	Time or Cycles	Baffle Filter Wash Frequency
1 Best	Commercial Grade Dish Washer	180 Min.	Griddle	Dish Washer Detergent	Every 3 days	2 Cycles	Every 3 days 2 Cycles
			Fryer		Weekly	2 Cycles	Twice a week 1 Cycle
			Charbroiler		Daily	2 Cycles	Daily 2 Cycles
			Wok		Daily	2 Cycles	Daily 2 Cycles
2	Low Temp. Dish Washer (Chemical Sanitizer)	140	Griddle	Dish Washer Detergent	Every 3 days	3 Cycles	Every 3 days 2 Cycles
			Fryer		Weekly	3 Cycles	Twice a week 2 Cycles
			Charbroiler		Daily	4 Cycles	Daily 2 Cycles
			Wok		Daily	4 Cycles	Daily 2 Cycles
3	Power Wash Sink (Whirlpool) with Heater	180 Min.	Griddle	Pot & Pan Detergent	Every 3 days	10 Min.	Every 3 days 5 minutes
			Fryer		Weekly	10 Min.	Twice a week 5 minutes
			Charbroiler		Daily	15 Min	Daily 5 minutes
			Wok		Daily	15 Min	Daily 5 minutes
4	Power Wash Sink (Whirlpool) no Heater	140	Griddle	Pot & Pan Detergent	Every 3 days	15 Min	Daily 5 minutes
			Fryer		Weekly	15 Min	Twice a week 5 minutes
			Charbroiler		Daily	25 Min	Daily 10 minutes
			Wok		Daily	25 Min	Daily 10 minutes
5	Pot Sink with Heater (rinse with sprayer after soaking)	180	Griddle	Pot & Pan Detergent and/or Degreaser	Every 2 days	1 Hr.	Daily Soak 10 min., then scrub with scour pad and bottle brush
			Fryer		Every 2 days	1 Hr.	Daily Soak 5 min., then scrub with scour pad and bottle brush
			Charbroiler		Daily	2 Hr.	Daily Soak 10 min., then scrub with scour pad and bottle brush
			Wok		Daily	2 Hr.	
6 Worst	Pot Sink no Heater (rinse with sprayer after soaking)	140	Griddle	Commercial Grade Kitchen Degreaser	Daily	2 Hours Change hot water every 30 minutes	Daily Soak 10 minutes then scrub with scour pad & bottle brush
			Fryer		Every 2 days	2 Hours Change hot water every 30 minutes	
			Charbroiler		Not Recommended		
			Wok		Not Recommended		

Dayton

REPAIR PARTS ILLUSTRATION FOR 6KWK8, 6KWK9, 6KWL0, 6KWL1, 20UD05 AND 20UD06



REPAIR PARTS LIST FOR 6KWK8, 6KWK9, 6KWL0, 6KWL1, 20UD05 AND 20UD06

Ref. No.	Description	Part Number for Models: 20UD05	20UD06	6KWK8	Quantity
1	20x16x2 Aluminum Baffle Filter	21DX63	–	21DX63	1*
2	20x20x2 Aluminum Baffle Filter	–	21DX64	21DX64	1*
3	Grease Cup	21DX65	21DX65	21DX65	1
4	Hood Light Glass Globe	21DX66	21DX66	21DX66	1*
(Δ)	100 Watt, A19 Light Bulb	Standard hardware item (available locally)			1*

Ref. No.	Description	Part Number for Models: 6KWK9	6KWL0	6KWL1	Quantity
1	20x16x2 Aluminum Baffle Filter	21DX63	–	21DX63	1*
2	20x20x2 Aluminum Baffle Filter	–	21DX64	21DX64	1*
3	Grease Cup	21DX65	21DX65	21DX65	1
4	Hood Light Glass Globe	21DX66	21DX66	21DX66	1*
(Δ)	100 Watt, A19 Light Bulb	Standard hardware item (available locally)			1*

(Δ) Not shown. (*) Quantity varies depending on model, sold in quantities of 1.

For Repair Parts, call 1-800-Grainger

24 hours a day – 365 days a year

Please provide following information:
-Model number
-Serial number (if any)
-Part description and number as shown in parts list

NOTES

DAYTON ONE-YEAR LIMITED WARRANTY

DAYTON ONE-YEAR LIMITED WARRANTY. *All Dayton® product models covered in this manual are warranted by Dayton Electric Mfg. Co. ("Dayton") to the original user against defects in workmanship or materials under normal use for one year after date of purchase. If the Dayton product is part of a set, only the portion that is defective is subject to this warranty. Any product or part which is determined to be defective in material or workmanship and returned to an authorized service location, as Dayton or Dayton's designee designates, shipping costs prepaid, will be, as the exclusive remedy, repaired or replaced with a new or reconditioned product or part of equal utility or a full refund given, at Dayton's or Dayton's designee's option, at no charge. For limited warranty claim procedures, see "Warranty Service" below. This warranty is void if there is evidence of misuse, mis-repair, mis-installation, abuse or alteration. This warranty does not cover normal wear and tear of Dayton products or portions of them, or products or portions of them which are consumable in normal use. This limited warranty gives purchasers specific legal rights, and you may also have other rights which vary from jurisdiction to jurisdiction.*

WARRANTY DISCLAIMERS AND LIMITATIONS OF LIABILITY RELATING TO ALL CUSTOMERS FOR ALL PRODUCTS

LIMITATION OF LIABILITY. *TO THE EXTENT ALLOWABLE UNDER APPLICABLE LAW, DAYTON'S LIABILITY FOR CONSEQUENTIAL AND INCIDENTAL DAMAGES IS EXPRESSLY DISCLAIMED. DAYTON'S LIABILITY IN ALL EVENTS IS LIMITED TO AND SHALL NOT EXCEED THE PURCHASE PRICE PAID.*

WARRANTY DISCLAIMER. *A DILIGENT EFFORT HAS BEEN MADE TO PROVIDE PRODUCT INFORMATION AND ILLUSTRATE THE PRODUCTS IN THIS LITERATURE ACCURATELY; HOWEVER, SUCH INFORMATION AND ILLUSTRATIONS ARE FOR THE SOLE PURPOSE OF IDENTIFICATION, AND DO NOT EXPRESS OR IMPLY A WARRANTY THAT THE PRODUCTS ARE MERCHANTABLE, OR FIT FOR A PARTICULAR PURPOSE, OR THAT THE PRODUCTS WILL NECESSARILY CONFORM TO THE ILLUSTRATIONS OR DESCRIPTIONS. EXCEPT AS PROVIDED BELOW, NO WARRANTY OR AFFIRMATION OF FACT, EXPRESSED OR IMPLIED, OTHER THAN AS STATED IN THE "LIMITED WARRANTY" ABOVE IS MADE OR AUTHORIZED BY DAYTON.*

PRODUCT SUITABILITY. *MANY JURISDICTIONS HAVE CODES AND REGULATIONS GOVERNING SALES, CONSTRUCTION, INSTALLATION, AND/OR USE OF PRODUCTS FOR CERTAIN PURPOSES, WHICH MAY VARY FROM THOSE IN NEIGHBORING AREAS. WHILE ATTEMPTS ARE MADE TO ASSURE THAT DAYTON PRODUCTS COMPLY WITH SUCH CODES, DAYTON CANNOT GUARANTEE COMPLIANCE, AND CANNOT BE RESPONSIBLE FOR HOW THE PRODUCT IS INSTALLED OR USED. BEFORE PURCHASE AND USE OF A PRODUCT, REVIEW THE SAFETY/SPECIFICATIONS, AND ALL APPLICABLE NATIONAL AND LOCAL CODES AND REGULATIONS, AND BE SURE THAT THE PRODUCT, INSTALLATION, AND USE WILL COMPLY WITH THEM.*

CONSUMERS ONLY. *CERTAIN ASPECTS OF DISCLAIMERS ARE NOT APPLICABLE TO CONSUMER PRODUCTS SOLD TO CONSUMERS; (A) SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU; (B) ALSO, SOME JURISDICTIONS DO NOT ALLOW A LIMITATION ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU; AND (C) BY LAW, DURING THE PERIOD OF THIS LIMITED WARRANTY, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE APPLICABLE TO CONSUMER PRODUCTS PURCHASED BY CONSUMERS, MAY NOT BE EXCLUDED OR OTHERWISE DISCLAIMED.*

THIS LIMITED WARRANTY ONLY APPLIES TO UNITED STATES PURCHASERS FOR DELIVERY IN THE UNITED STATES.

WARRANTY SERVICE

To obtain warranty service if you purchased the covered product directly from W.W. Grainger, Inc. ("Grainger"), (i) write or call or visit the local Grainger branch from which the product was purchased or another Grainger branch near you (see www.grainger.com for a listing of Grainger branches); or (ii) contact Grainger by going to www.grainger.com and clicking on the "Contact Us" link at the top of the page, then clicking on the "Email us" link; or (iii) call Customer Care (toll free) at 1-888-361-8649. To obtain warranty service if you purchased the covered product from another distributor or retailer, (i) go to www.grainger.com for Warranty Service; (ii) write or call or visit a Grainger branch near you; or (iii) call Customer Care (toll free) at 1-888-361-8649. In any case, you will need to provide, to the extent available, the purchase date, the original invoice number, the stock number, a description of the defect, and anything else specified in this Dayton One-Year Limited Warranty. You may be required to send the product in for inspection at your cost. You can follow up on the progress of inspections and corrections in the same ways. Title and risk of loss pass to buyer on delivery to common carrier, so if product was damaged in transit to you, file claim with carrier, not retailer, Grainger or Dayton. For warranty information for purchasers and/or delivery outside the United States, please use the following applicable contact information:

Dayton Electric Mfg. Co.,
100 Grainger Parkway, Lake Forest, IL 60045 U.S.A.
or call +1-888-361-8649