

VULCAN

INSTALLATION & OPERATION MANUAL

TK SERIES STANDARD AND FILTER-READY GAS FRYERS

<i>MODEL</i>	<i>STANDARD FRYER</i>	<i>FILTER-READY FRYER</i>
<i>TK35</i>	<i>ML-52096</i>	<i>ML-52062</i>
<i>TK45</i>	<i>ML-52097</i>	<i>ML-52063</i>
<i>TK65</i>	<i>ML-52098</i>	<i>ML-52064</i>



VULCAN-HART COMPANY, P.O. BOX 696, LOUISVILLE, KY 40201-0696, TEL. (502) 778-2791

FORM 30608 (Rev. A, 8-95)

IMPORTANT FOR YOUR SAFETY

THIS MANUAL HAS BEEN PREPARED FOR PERSONNEL QUALIFIED TO INSTALL GAS EQUIPMENT, WHO SHOULD PERFORM THE INITIAL FIELD START-UP AND ADJUSTMENTS OF THE EQUIPMENT COVERED BY THIS MANUAL.

POST IN A PROMINENT LOCATION THE INSTRUCTIONS TO BE FOLLOWED IN THE EVENT THE SMELL OF GAS IS DETECTED. THIS INFORMATION CAN BE OBTAINED FROM THE LOCAL GAS SUPPLIER.

IMPORTANT

IN THE EVENT A GAS ODOR IS DETECTED, SHUT DOWN UNITS AT MAIN SHUTOFF VALVE AND CONTACT THE LOCAL GAS COMPANY OR GAS SUPPLIER FOR SERVICE.

FOR YOUR SAFETY

DO NOT STORE OR USE GASOLINE OR OTHER FLAMMABLE VAPORS OR LIQUIDS IN THE VICINITY OF THIS OR ANY OTHER APPLIANCE.

WARNING

IMPROPER INSTALLATION, ADJUSTMENT, ALTERATION, SERVICE OR MAINTENANCE CAN CAUSE PROPERTY DAMAGE, INJURY OR DEATH. READ THE INSTALLATION, OPERATING AND MAINTENANCE INSTRUCTIONS THOROUGHLY BEFORE INSTALLING OR SERVICING THIS EQUIPMENT.

IN THE EVENT OF A POWER FAILURE, DO NOT ATTEMPT TO OPERATE THIS DEVICE.

Installation, Operation and Care of TK SERIES STANDARD & FILTER-READY GAS FRYERS

KEEP THIS MANUAL FOR FUTURE REFERENCE

GENERAL

Vulcan-Hart TK Series Fryers are available in three different models with varying capacities:

Model	Product Lb Per Basket	Total Lb of Product
TK35	1½	3
TK45	2½	5
TK65	3	6

Your Vulcan-Hart Gas Fryer is produced with quality workmanship and material. Proper installation, usage and maintenance of your fryer will result in many years of satisfactory performance. It is suggested that you thoroughly read this entire manual and carefully follow all of the instructions provided.

Separate installation instructions for the components of a filter-ready fryer are included in the MF50 and MF85 Mobile Filter Installation and Operation Manual.

INSTALLATION

Before installing the fryer, verify that the type of gas (natural or propane) agrees with the specifications on the fryer data plate which is located on the inside of the door panel. Also ensure the fryer is built for installation elevation.

UNPACKING

This fryer was carefully inspected before leaving the factory. The transportation company assumes full responsibility for safe delivery upon acceptance of this shipment. Immediately after unpacking the fryer, check it for possible shipping damage. If the fryer is found to be damaged, save the packaging material and contact the carrier within 15 days of delivery.

The following accessories should be packaged in the fry tank area:

Crumb screen	Drain pipe
Basket hanger	(2) Twin fryer baskets
Clean-out rod	(4) Legs

Do not use the door or its handle to lift or move the fryer.

LOCATION

The equipment area must be kept free and clear of combustible substances.

Minimum clearance from combustible and non-combustible construction is 6" from the sides and 6" from the back of the fryer. There must be at least 16" clearance between the fryer and any open top flame units. Adequate clearances for servicing and proper operation must be allowed.

The fryer may be installed on combustible floors.

Install the fryer in an area with sufficient air supply for combustion of the gas at the fryer burners. Provide adequate clearance for air openings into the combustion chamber. Do not obstruct the flow of combustion and ventilation air.

Do not permit fans to blow directly at the fryer. Wherever possible, avoid open windows next to the fryer sides or back. Avoid wall-type fans which create air cross currents within the room.

INSTALLATION CODES AND STANDARDS

Vulcan-Hart fryers should be installed in accordance with:

1. State and local codes.
2. National Fuel Gas Code, ANSI-Z223.1 (latest edition), available from the American Gas Association, Inc., 1515 Wilson Blvd., Arlington, VA 22209.
3. NFPA Standard #96, "Vapor Removal from Cooking Equipment," available from the National Fire Protection Association, Attention Publication Services, Batterymarch Park, Quincy, MA 02269.

ASSEMBLY

The fryer must be restrained with adequate ties to prevent tipping when installed in order to avoid the splashing of hot liquid.

Legs

Position fryer in an open space near final installation area. Tilt fryer on its side, being careful to avoid scratching the finish. Thread legs into mounting plates provided on bottom of fryer by screwing in a clockwise rotation.

Carefully raise fryer to its normal position and place it in installation location.

Castors

When casters are assembled to the fryer, you must use a connector (available from Vulcan-Hart) that complies with the Standard for Connectors of Movable Gas Appliances, ANSI-Z21.69 (latest edition), and a quick-disconnect device that complies with the Standard for Quick-Disconnect Devices for Use With Gas Fuel, ANSI-Z21.41 (latest edition).

Provide a restraining device for the gas line to limit movement of the fryer without depending on the connector and/or any quick-disconnect device or its associated piping to limit movement of the fryer. Attach the restraint to the rear of the fryer (Fig. 1).

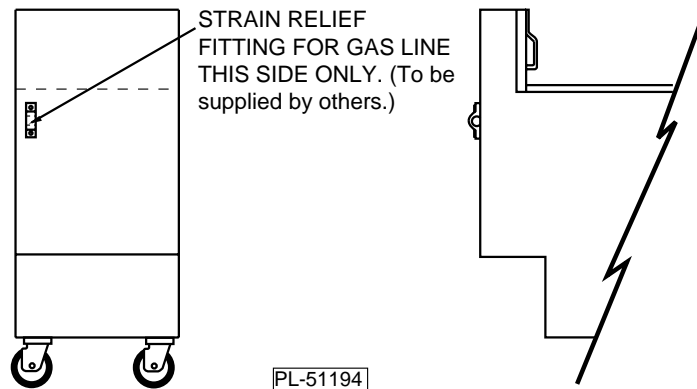


Fig. 1

If it is necessary to disconnect the restraint, turn off the gas supply before disconnection. Reconnect the restraint before turning the gas supply on and returning the fryer to its installation position.

Instructions for installing casters to the fryer are included with the casters.

GAS CONNECTIONS

CAUTION: All gas supply connections and any pipe joint compound used must be resistant to the action of liquefied petroleum gases.

The gas inlet is located at the rear of the fryer on the lower left-hand side.

Codes require that a gas shutoff valve be installed in the gas line ahead of the fryer.

The gas supply line must be at least the equivalent of $\frac{1}{2}$ " iron pipe. If using the optional quick-disconnect flex hose, $\frac{3}{4}$ " iron pipe must be used, unless you utilize $\frac{3}{4}$ " to $\frac{1}{2}$ " reducing fittings. Make sure the pipes are clean and free of obstructions, dirt, and piping compound.

WARNING: PRIOR TO LIGHTING, CHECK ALL JOINTS IN THE GAS SUPPLY LINE FOR LEAKS. USE SOAP AND WATER SOLUTION. DO NOT USE AN OPEN FLAME.

After piping has been checked for leaks, all piping receiving gas should be fully purged to remove air.

GAS PRESSURES AND ORIFICES

The standard orifices are set at 4" W.C. (Water Column) pressure for natural gas and 10" W.C. (Water Column) pressure for propane gas. A pressure regulator is supplied as part of the gas control valve.

TESTING THE GAS SUPPLY PIPING SYSTEM

When test pressures exceed $\frac{1}{2}$ psig (3.45 kPa), the fryer and its individual shutoff valve must be disconnected from the gas supply piping system.

When test pressures are $\frac{1}{2}$ psig (3.45 kPa) or less, the fryer must be isolated from the gas supply piping system by closing its individual shutoff valve.

LEVELING THE FRYER

Once gas connections have been made, place a carpenter's level on top of the fryer. Adjust the legs to ensure that the fryer is level front-to-back and side-to-side in the final installed position.

FLUE CONNECTIONS

The fryer must be located under a hood with an adequate connection to an exhaust duct and with a 6" extension beyond fryer sides.

Adequate ventilation must be provided and must comply with applicable portions of National Fire Protection Association Standard #96, "Standard for the Removal of Vapor from Cooking Equipment" (latest edition), and with local codes.

Clearance above fryer should be adequate for products of combustion to be removed efficiently. An 18" minimum clearance should be maintained between the flue vent and the filters of the hood venting system.

Never make flue connections directly to the fryer.

Do not obstruct the flow of flue gases from the flue duct located on the rear of the fryer.

Adequate air should be provided in the kitchen to replace air taken out by the ventilating system. This will prevent fryer function from being affected by a reduced atmospheric pressure.

ELECTRICAL CONNECTIONS (FILTER-READY FRYERS ONLY)

WARNING: ELECTRICAL AND GROUNDING CONNECTIONS MUST COMPLY WITH THE APPLICABLE PORTIONS OF THE NATIONAL ELECTRICAL CODE ANSI/NFPA-70 (LATEST EDITION) AND/OR OTHER LOCAL ELECTRICAL CODES.

WARNING: APPLIANCES EQUIPPED WITH A FLEXIBLE ELECTRIC SUPPLY CORD ARE PROVIDED WITH A THREE-PRONG GROUNDING PLUG. IT IS IMPERATIVE THAT THIS PLUG BE CONNECTED INTO A PROPERLY GROUNDED THREE-PRONG RECEPTACLE. IF THE RECEPTACLE IS NOT THE PROPER GROUNDING TYPE, CONTACT AN ELECTRICIAN. DO NOT REMOVE THE GROUNDING PRONG FROM THIS PLUG.

The TK35, TK45, and TK65 filter-ready fryers are equipped with a 115 volt/60 Hz./1 Phase cord and plug which requires only that it be plugged into a properly grounded 120 volt receptacle.

Do not connect fryer to electrical supply until after gas connections have been made.

OPERATION

WARNING: HOT OIL AND PARTS CAN CAUSE BURNS. USE CARE WHEN OPERATING, CLEANING AND SERVICING THE FRYER.

WARNING: SPILLING HOT FRYING COMPOUND CAN CAUSE SEVERE BURNS. DO NOT MOVE FRYER WITHOUT DRAINING ALL FRYING COMPOUND FROM THE TANK.

PRIOR TO FIRST USE

Cleaning the Fryer

Using a non-corrosive, grease-dissolving commercial cleaner, clean the protective metal oils from all surface parts and the tank interior. Follow the cleaner manufacturer's directions. Rinse thoroughly and drain by opening the drain valve accessible when the door is opened. Wipe tank completely dry with a soft clean cloth.

Clean all fryer accessories. Rinse all parts thoroughly after cleaning and wipe dry.

Seasoning

Light seasoning of the backsplash area is required to avoid possible surface corrosion. With a soft, lint-free cloth, apply a thin layer of cooking oil over entire backsplash area. This should also be done after every cleaning.

FILLING THE FRY TANK WITH LIQUID SHORTENING

Tank warranty may be voided by improper operation. Turn gas valve off when draining or filling.

Using only **liquid shortening**, fill fry tank to the "oil level" line on the back wall, which appears about 3" above the tank tubes (Fig. 2)

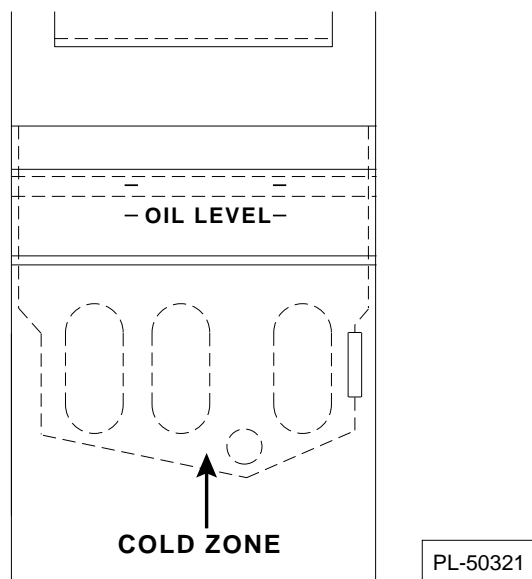


Fig. 2

Melting solid shortening in the fry tank is not recommended. The fry tank will be damaged and the shortening will be scorched.

Do not overfill fry tank.

Keep level of shortening at "oil level" line in fry tank. Add fresh shortening as needed.

USING THE FRYER

A high limit device will shut the fryer down should the shortening overheat. Pilot relighting will be required. DO NOT relight pilot until shortening temperature has lowered to at least 300°F. If this situation persists, contact your local Vulcan-Hart authorized service office.

Lighting Instructions

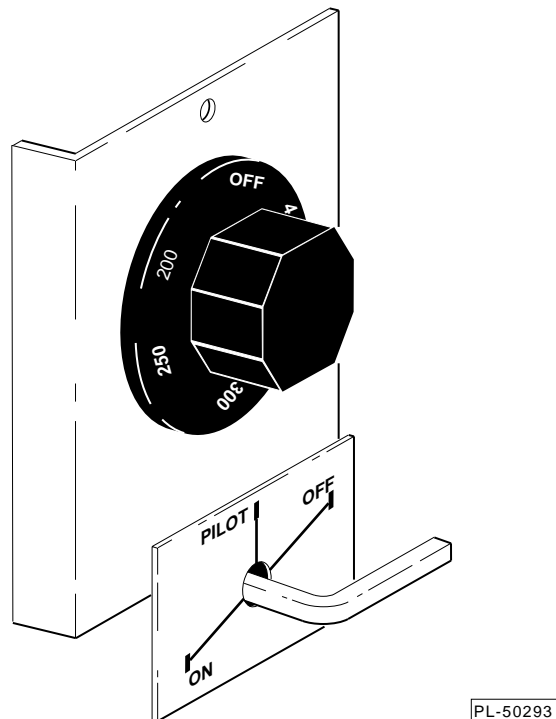


Fig. 3

1. Turn thermostat knob (located behind door panel) (Fig. 3) to OFF position.
2. Push gas valve extension arm in and turn arm to pilot OFF position (Fig. 3). Wait 5 minutes for unburned gas to vent.
3. Push gas valve extension arm in and turn to the PILOT position.
4. While still depressing arm, light the pilot with a lit taper. Continue with Steps 2, 3, and 4 until pilot remains lit when extension arm is released.
5. Turn gas valve extension arm to the ON position.
6. Repeat the above procedures if gas supply is interrupted.

Turning the Fryer On

CAUTION: Before turning burners on, fry tank must be filled with liquid shortening. If this is not done, the tank walls can be damaged. Warpage can cause leaks.

To turn the fryer ON, set the thermostat knob to the desired temperature.

When the set temperature is reached, the gas control shuts off gas flow into the burners and the flame is extinguished. From then on, the burners will cycle on and off to maintain set temperature.

Turning the Fryer Off

1. Turn thermostat knob to OFF.
2. Turn gas valve extension arm to the PILOT position (the pilot will continue to burn).
3. To shut off all gas to the system, including the pilot, turn gas valve extension arm to OFF position.

Extended Shutdown

1. Turn manual gas shutoff valve to OFF.
2. Turn thermostat knob to OFF.
3. Turn gas valve extension arm to OFF.
4. After draining and cleaning, apply a thin film of cooking oil to tank interior and tank back to inhibit possible surface corrosion.

FRYING

Heat shortening to set temperature.

Pieces of product to be fried should be about the same size to ensure the same doneness.

Drain or wipe dry raw or wet foods to minimize splatter when lowering into the hot oil.

Do not overfill baskets. Recommended maximum capacities are shown in the GENERAL section of this manual.

Carefully lower baskets into oil.

When frying doughnuts and fritters, turn product only once during frying.

When cooking French fries or onion rings, shake basket several times in a way that does not splatter the shortening.

Batter-covered foods should be dropped carefully, one by one, into shortening or basket. If you use the basket, first cover basket with shortening to reduce batter build-up on basket surfaces.

When frying is completed, remove baskets or product. Hang baskets on rear basket hangers. Remove food and season it. Do not salt food over the shortening because salt could cause a chemical change in the oil.

Add approximately 15% new oil daily.

Keep level of shortening at oil level line in fry tank. Add fresh shortening as needed.

DAILY FILTERING

Standard TK Fryers

Turn gas valve OFF when draining or filling.

Always filter the shortening while liquefied. If you attempt to drain a cold fryer, heated up, it will not drain properly because the shortening under the cold zone tube area will remain hard. If necessary, the clean-out rod may be used to carefully stir up hard fat to an area above the tubes where it will melt. After the cold zone is liquefied, turn the fryer thermostat and gas valve off.

Shortening life will be extended by filtering at least once a day, or more often if conditions warrant. A commercially available power filter (made by other manufacturers) may be used. Follow their operating instructions for draining, straining, and replacing shortening in the fry tank.

Another way to filter is to drain the shortening from the drain pipe through a filter bag, or cover the receiving container with cheesecloth or other filtering material.

Filtering Procedure

1. Turn the fryer OFF.
2. Slowly remove the baskets, especially if shortening is hot, to prevent splashing.
3. Open the fryer door and attach the drain pipe to the drain valve.
4. Select a container of sufficient size to handle the amount of fryer shortening to be drained and place it below the drain pipe.
5. If you are using a filter bag, tie it securely to the drain pipe. If other filter medium is used, place it in the container.
6. Open the drain valve carefully so that the shortening stream is directed through the filter.
7. With a small amount of warm shortening, flush out scraps and sediment in the fry tank. Drain the tank thoroughly and wipe clean.
8. If it is necessary to clean the tank more thoroughly, follow the procedure shown in **CLEANING — WEEKLY OR AS REQUIRED**.
9. Close the drain valve.

10. Pour the strained shortening back into the fry tank.
11. Add shortening to bring the oil level to the "oil level" line.

Filter-Ready TK Fryers Only

For filtering instructions of the filter-ready TK Fryers, refer to the MOBILE FILTER SYSTEM OPERATING MANUAL. This manual is supplied with each mobile filter system. Check tank vessel or accessory shipment box for manual. If manual is not found, contact your nearest parts depot to obtain the manual before operating the filter system.

Make sure you use the mobile filter with the correct size tank to hold the quantity of shortening to be filtered:

Fryer Model	Use Mobile Filter
TK35	MF50
TK45	MF50
TK65	MF85

CLEANING

Daily

Clean your fryer regularly with a damp cloth and polish with a soft dry cloth. If regular cleaning is neglected, grease will be burned on and discolorations may form. These may be removed by washing with any detergent or soap and water. A self-soaping scouring pad may be used for particularly stubborn discolorations. Always rub with the "GRAIN" in a horizontal direction.

Keeping the fryer exterior clean and free of accumulated grease will prevent stubborn stains from forming. Wash all exterior surfaces at least once daily. Use a cloth with warm water and a mild soap or detergent. Follow with a clear rinse, then dry.

Fingerprints are sometimes a problem on highly polished surfaces of stainless steel. They can be minimized by applying a cleaner that will leave a thin, oily or waxy film.

Weekly or as Required

1. Once the shortening has been drained, flush out scraps and sediment with a small amount of warm shortening. Allow the tank to drain thoroughly.
2. Close the drain valve and fill the tank with a non-corrosive, grease-dissolving commercial cleaner, following the manufacturer's instructions.
3. Set the thermostat at 300°F and boil the solution for 15 to 20 minutes.
4. Drain the cleaning solution from the tank.

5. Close the drain valve and refill the tank with water. Add 1 cup of vinegar to neutralize alkaline left by the cleaner. Bring the solution to a boil and allow it to stand for a few minutes.
6. Drain the tank and rinse thoroughly with clear, hot water. All traces of cleaner must be removed. Dry the tank thoroughly.
7. Close the drain valve.
8. Add shortening to bring the oil level to the "oil level" line.

The fryer is now ready for use.

MAINTENANCE

WARNING: HOT OIL AND PARTS CAN CAUSE BURNS. USE CARE WHEN OPERATING, CLEANING AND SERVICING THE FRYER.

WARNING: SPILLING HOT OIL CAN CAUSE SEVERE BURNS. DO NOT MOVE FRYER WITHOUT DRAINING ALL OIL FROM THE TANK.

SHORTENING MAINTENANCE

Shortening life may be extended by following these important procedures.

- Do not salt foods over the fryer.
- Use a good quality shortening.
- Filter shortening daily at a minimum.
- Replace shortening if it becomes poorly flavored.
- Keep equipment and surroundings clean.
- Set thermostats correctly.
- Remove excess moisture and particles from food products before placing in fryer.

VENT

Annually, when fryer is cool, check the flue and clear any obstructions.

SERVICE AND PARTS INFORMATION

To obtain service and parts information concerning this fryer, contact the Vulcan-Hart Service Depot in your area (refer to listing supplied with the fryer), or Vulcan-Hart Company Service Department at the address or phone number shown on the front cover of this manual.

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