

TK THERMA-KLEEN®
COMMERCIAL
Ultra Propane - Ultra 600

THERMA-KLEEN®

Operators Manual

Ultra Propane – Model 600



Made in the USA

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OWNERS MANUAL

Do Not Use This System Without Reading This Manual First

You should be familiar with the information in this manual before you operate your equipment. The manual is structured so that it can be used for your reference.

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All information, illustrations and specifications contained within this manual are based on the information available at the time of production.

THERMA-KLEEN®, reserves the right to make changes at any time.



SERVICE INFORMATION:

Therma-Kleen® Model 600

Please take the time to fill out the form on this page. When completed, this reference form will provide information essential to the proper servicing and ordering of parts for your THERMA-KLEEM® ULTRA 600.

OWNER:

Name of Business: _____

Address: _____

City, _____ State: _____ Zip Code: _____

Telephone: _____ E-mail: _____

Serial #: _____ Date Shipped: _____

Our sales and parts department will be glad to answer any questions or provide troubleshooting help over the phone. All parts will be shipped via UPS unless otherwise specified. The warranty card must be filled out on our Web Site to activate your warranty.

www.THERMA-KLEEN.com

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MACHINE SPECIFICATIONS:

<u>SPECIFICATIONS</u>	<u>Ultra 600</u>
WATER PRESSURE:	600 PSI
MAXIMUM WATER TEMP:	340°F
WATER VOLUME:	1.5 GPM
SIZE:	18" W x 23" L x 32" H
WEIGHT:	100 lbs.
FUEL:	Vaporous LP gas on all models
BTU/hr.:	130,000
FUSE SIZE:	10 amp

STANDARD UNIT INCLUDE:

25 ft. Steam Hose	X
50 ft. Steam Hose	
Fan Nozzle	X
Blast Nozzle	X
Trigger Gun	X
4 ft Wand Deluxe	X
LP Gas Regulator	X
Bungie Cord	X
Internal Chemical Injection System	
Fuel Pressure Gauge	X
Temperature Gauge - Hi-Limit	X
Electric Pilot Ignition	X
Pressure Gauge	X

INSTRUCCIONES PARA OPERAR LA MAQUINA DE LIMIEZA

Conecte una manguera de agua a la rosca que se encuentra en la parte baja de la maquina en el lado derecho. Conecte la manguera de vapor al desaguadero que se enchufa en el lado izquierdo (ver instrucciones “quick connect coupling” pagina 14.)

Prenda el agua y deje que corra atraves de la maquina hasta que haya un flujo constante de agua saliendo del tubo de acero (ver instrucciones “Wand” pagina 15.) Si le quita la boquilla al tubo se le va hacer mas rapido el proceso. Un flujo constante de agua significa que no hay aire en el serpentín y no hay restricciones en la boquilla. Cuando obtenga este flujo constante la bomba va a funcionar mejor. Recuerde de poner la boquilla otra vez en la punta del tubo de acero.

Conecte la maquina a una fuente de corriente de 115 voltios haciendo tierra. No prenda la maquina sin hacer tierra. Prenda el boton de la bomba. Si la bomba se agita, es porque esta usando una extencion de electricidad muy larga, la cual no puede conducir suficientes voltios para la maquina. Use una extencion de 50 pies bastante griezua. Solamente usa AGUA FRIA; el agua caliente le danara los sellos de la bomba.

Conecte el gas propano a la pieze que gira sobre el eje (swivel fitting). Conecte el regulador del gas propano al tanque de gas propano con el regulador puesto hacia arriba. Ue solamente el gas propano que es vaporizado. Abra la valvula de gas completamente (swivel fitting) que esta localizada sobre el tanque de gas. Para abrir todas las piezas y valvulas, gire hacia la izquierda y para cerrar, hacia la derecha.

Prenda la maquina. Espere 60 segundos para que encienda. Si la maquina se apaga, espere a que se vuelva a encender automaticamente. Si la maquina se nueva, o no ha sido usada en 12 horas o mas, varios minutos seran necesarios para que arranque. Esto es muy normal ya que las lineas de gas tienen que sacar todo el aire y llenarse poco a poco.

Prenda y apague el arrancador varias veces.

Si usted quiere apagar el flujo de agua con el control del tubo de acero, mueva la valvula 90 grados para cerrar. No deie la valvula de control predida por mas de 2 minutos. Esto puede danar y romper su maquina. Para volver abrir el flujo de agua, alinie la bolita de la valvula paralelamente con el tubode acero. La unidad automaticamente se encendera en 60 segundos despues que se avra la valvula.

Como apagar la maquina:

....Apague el arrancador.

....Deje que la maquina continue corriendo hasta que toda el aqua caliente ha sido forzada fuera del serpentín, y la valvula de la temperature margue 140 grados F.

....Apague la bomba, cierra la valvula del gas en el tanque de gas.

....Apague el agua y desconectela de la fuente de corriente.

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SAFETY TIPS:

While your THERMA-KLEEN®, portable, high pressure, steam cleaner is designed to be an entirely safe cleaning tool, incorporating the latest and the most state of the art safety features, the following safety tips are recommended by the manufacturer for the user to implement:

1. **ALWAYS** - Check the machine, power & steam hose for damage prior to start-up. If damage is detected, it must be repaired prior to use.
2. **ALWAYS** - Check LP gas quick connect to make sure it has snapped tight and there are no leaks.
3. **DO NOT** - Light the unit if there is any smell or indication of a Gas Leak.
4. **ALWAYS** - Use the heat deflector when operating the unit under low ceilings, sprinkler systems, Heat/alarm systems, plastic light covers and any plastic material, or flammable items.
5. **DANGER – NEVER** - Place hands, arms, neck, and loose clothing Etc. over the top of the cylinder when and while ignition of the burner takes place and during the actual operation of your high-pressure steam cleaner. Beware of the flame in windy conditions.
6. **ALWAYS** - use appropriate safety goggles and gloves while operating your cleaner.
7. **ALWAYS** - wear long sleeves, long pants, while operating your cleaner.
8. **DO NOT** touch or grab the steam hose without gloves when hose is being used or hot.
9. **CAUTION** - Before use check the electrical cord for damage, wear & tare, cuts or abrasion.
 - a. **DO NOT** - use your machine with a damaged electrical cord.
10. **ALWAYS** - use the electrical plug that is on an approved grounded circuit for this model.
 - a. **CAUTION** - If unsure if the circuit is properly grounded or has the correct voltage\amperage for this machine, contact a certified electrician.



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- b. **CAUTION** - If the Power Outlet is damaged, have a certified electrician repair the outlet.
 - c. **NEVER** - Touch the electrical plug or unplug the unit with wet hands or while standing in a wet environment.
 - d. **NEVER** - Allow the electrical power cord to lie in water while cleaning.
 - e. **NEVER** - Unplug from the receptacle by pulling on the cord, always grasp the plug itself Make sure the unit is unplugged.
11. **NEVER** - Touch the system with wet hands or while standing in a wet environment.
12. **NEVER** - Allow the machine to get wet as electrical shock may occur.
13. **CAUTION** - Use extra caution when using the system around water (Swimming Pools, Spas, Toilets, Etc.)
14. **DO NOT** - Allow the electrical power cord or Steam Hose to be run over, stepped on or have something placed or dropped on it.
15. **DO NOT** - Allow the Electrical Power Cord or Steam Hose to be caught in a closed door or pull over a sharp corner.
16. **CAUTION** - Turn off all controls prior to unplugging the unit.
17. **ALWAYS** -
18. **CAUTION** - Make sure all attachments are secured before activating the gun.
- a. **CAUTION** - Only operate the unit when it is in a Horizontal position.
19. **WARNING** - To prevent scalding or burning, ALWAYS keep your hands and body away from the nozzle tip during operation and wear appropriate protective clothing.
- a. **DO NOT** - Touch the steam nozzle while in use, or until after it cools.
 - b. **DO NOT** - Grab the hot steam hose without appropriate gloves.
20. **NEVER** - Point or direct the wand or steam at any person, animal or electrical outlet or anything which could be damaged.
21. **DO NOT** - Move or lift the machine by pulling on the electrical cord.
22. **DO NOT** - Move or lift the machine by pulling on the steam hose or gun.
23. **DO NOT** - Bend the steam hose past the 2" bend radius. This will shorten the life of your hose.

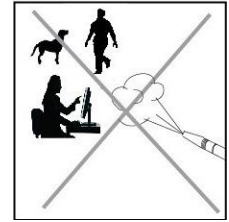


Fig. 2



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24. **DO NOT** - Operate your unit while the unit stands atop carpeted floors, wood flooring or linoleum type tiled floor, as the heat from the burner could damage these items.
25. **DO NOT** - Point or direct the wand and nozzle with high pressure steam at any person/animal as this could result in burning or harming another person/animal.
26. **DO NOT** - Point or direct the water spray from the wand towards an electrical outlet or box.
27. **DO NOT** - Operate the machine without water as this may cause damage to the unit.
28. **DO NOT** - Disconnect steam hose from the machine while the water temperature exceeds 100°F.
29. **CAUTION** - Only operate the machine while it is in an upright position.
30. **DO NOT** - Use in small confined areas.
31. **DO NOT** - Steam clean asphalt driveway material or floor grouting while using the blast nozzle. To prevent pitting of such materials, we suggest that you only use the fan nozzle.
32. **DO NOT** - leave the machine unsupervised while cleaning away from the machine.
33. **NEVER** - Pull or tug on the machine with the power cord or steam hose.
34. **CAUTION** - Make sure all attachments are securely attached before activating the gun.
35. **NEVER** - Allow children or un-trained persons to use or handle or operate the machine.
36. **CAUTION** - Only operate the unit in an upright position.
37. **Only** - Use approved THERMA-KLEEN® components and parts in these units.
38. **ALWAYS** - Empty machine of all water when finished.
39. **NEVER** - Store machine outside.
40. **NEVER** - Store machine with water in it.
41. **NEVER** - Allow the unit to be exposed to freezing temperatures as severe damage will occur.



WARNING:

Your Therma-Kleen Vapor Steam Cleaner MUST BE PLUGGED INTO A GROUNDED OUTLET, or electrical shock can occur. Check with a certified electrician if there is any doubt that the outlet is grounded. Do not modify the Power Cord/Plug provided with the Therma-Kleen Vapor





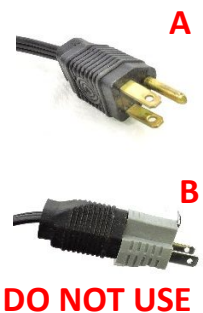
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System. If it will not fit the outlet, have a properly grounded outlet installed by a certified electrician.

WHY THIS UNIT MUST BE GROUNDED:

If the unit should malfunction or break down, grounding provides a path of least resistance for the electrical current to pass, reducing the risk of electrical shock. All Therma-Kleen units are equipped with a power cord with an equipment grounding conductor and plug. The plug must be inserted into an appropriate outlet which is properly grounded in accordance with national & local electrical codes and ordinances.

Therma-Kleen® units are designed for use with a normal 110/120 volt circuit and has a grounded cord and plug such as what is illustrated in picture “A”. In no cases should a “2” adaptor (which is illustrated in picture “B”) plug be used to adapt “3” prong grounded plug to an ungrounded electrical outlet.



NOTE:

If an electrical extension cord is used with this system, it must be at a minimum, 12-gauge, 3 wire, grounded, SJ Quality, 60 Degree C, less than 50 ft. long.

DO NOT remove the ground prong on the power cord. This will void the warranty on your machine and can be dangerous because it does not protect the user.

OPERATING INSTRUCTIONS START-UP:

- 1.) Connect the machine to 115 volt, GROUNDED electrical service. A 12 gauge/3 prong extension cord is required for the Ultra 1000 or the Ultra 1300 model. Using an improper extension cord could cause damage to the machine and cause erratic operation. For 220 volt machines, use a 220 volt grounded outlet.
- 2.) Connect a garden hose from a cold water source to the inlet fitting on the lower right hand side of the steam cleaner.
- 3.) Connect a steam hose to the water outlet quick connect or European threaded fitting on the left hand side. If a quick connect system was used on your machine, make sure it “snapped” tight.
- 4.) Connect the wand to the steam hose end using the same method as step #3.



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- 5.) Connect the LP gas regulator to the LP tank keeping the regulator upright. The threads in the tank fitting are reversed. DO NOT OVERTIGHTEN the fitting. Make sure the LP tank is in the proper upright position to supply ONLY VAPOROUS LP gas to the machine. Keep the regulator positioned away from the machine. NOTE: Natural gas option; this model needs to be vented.
- 6.) Connect the LP gas hose to the connection on the control panel. Make sure it is completely connected before continuing.
- 7.) Open the main fuel valve completely located on top of the LP gas tank. If any leaks are suspected, check for bubbles by covering the connection with soapy water.
- 8.) Keep the gas pressure low on the fuel pressure gauge at this time. If the pressure is too high, adjust the red regulator counter-clockwise (upward) to reduce the pressure. You should start the machine with about 2-3 lbs. of fuel on the larger models and 1-2 lbs. on the Ultra 250 and Ultra 600.
- 9.) Keep the gas pressure low on the fuel pressure gauge at this time. If the pressure is too high, adjust the red regulator counter-clockwise (upward) to reduce the pressure. You should start the machine with about 2-3 lbs. of fuel on the larger models and 1-2 lbs. on the Ultra 250 and Ultra 600.
- 10.) Turn the cold water supply source on completely.
- 11.) Squeeze the trigger on the wand allowing the water to come through the gun.
- 12.) Turn the PUMP switch "ON" and let the machine run until the pump runs smoothly and the water isn't sputtering. To speed the process up you can close the trigger gun for about 10 seconds and open again. This will help bring the air to the front of the wand.

SHUT DOWN:

- 1.) Turn off the ignition switch.
- 2.) Let the pump continue to run until the water cools down and the temperature gauge reads
- 3.) About 100° F
- 4.) Turn off the pump, close the LP gas valve on the tank.
- 5.) Turn off the water and disconnect the electricity.
- 6.) Store the unit where it will not be subject to freezing temperatures as this will destroy the pump, coils and/or the flow switch.
 - a.) If this cannot be done:

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WINTERIZE THE UNIT:

- 1.) The Ultra 250 and Ultra 600 require: 1 gallon of windshield wiper fluid or anti-freeze.
- 2.) The Ultra 1000 and Ultra 1300 require: 2 gallons of windshield wiper fluid or anti-freeze.
- 3.) Windshield wiper fluid is good to about -20°F and the anti-freeze goes even further.
- 4.) See Preventative Maintenance Section

CONTROL PANEL DIAGRAM

- 1.) Nozzle Holder
- 2.) Fuel Pressure Gauge
- 3.) Combistat. This is a temperature gauge and an adjustable high limit switch all in one.
- 4.) Ignition Switch
- 5.) Fuse Holder
- 6.) Pump Switch
- 7.) Soap Injector (on Ultra 1300 only)

Location may vary per machine.



PREVENTIVE MAINTENANCE:

- 1.) Periodically inspect and clean water inlet screen located at the inlet of the unit (at the hose attachment on the Ultra 600/1300 models-Ultra 250 filter is part of the pump).
- 2.) Periodically inspect nozzle to make sure it is clean. Restricted water flow, shut down or interrupted spray pattern is an indication of obstruction in the nozzle.
- 3.) DESCALING: hardness or mineral content in water along with steam temperatures will eventually create a coating or build-up of scale in the heating coils. Excessive scale will shorten coil life and interfere with temperature controls. Scale appears periodically. Check for scale build-up on inside of steam connections. When scale has built-up to such a degree that the machine senses accurate low water flow internally, the unit will not light, or will light and shut-off. A test for scale build-up



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is to remove the nozzle and see if the machine lights, and if it does, then you may need to descale the unit. Other low water issues maybe the cause, such as a bad pump, etc. See DESCALING Section.

- 4.) **DO NOT FREEZE** the machine. This can ruin the coils, pumps and flow switch. Winterize the machine when necessary. This can be done by running anti-freeze or windshield wiper fluid through the garden hose, as you do when you descale a machine. See DESCALING Section. The Ultra 250, 600 and 1300 models require 1 to 2 gallons of fluid to completely fill the coils and water system. When you are ready to resume using the machine, flush thoroughly and dispose of the anti-freeze carefully before heating the system.

DESCALING PROCEDURE:

- 1.) Obtain THERMA-KLEEN® descaling compound from your salesman or use equivalent product. Only use THERMA-KLEEN® recommended product safe for aluminum coils.
- 2.) Place in a bucket in concentrated form, or mix according to manufacturer's instructions. (½ gallon of descalant is needed).
- 3.) Remove nozzle from the wand.
- 4.) Turn water supply and pump "ON" as if you were going to start the machine. After the pump is primed, quickly turn "OFF" the pump and water supply and disconnect the hose from the water connection and place the garden hose into the bucket along with the wand end.
- 5.) Quickly turn "ON" the pump and let the solution circulate through the machine for about five (5) minutes. Flush the unit with clear water before starting the machine.
- 6.) If you are winterizing the unit, 1 gallon is needed for the Ultra 250 & 600 and 2 gallons of liquid is needed for the Ultra 1300. Watch for the solution to exit the wand. Quickly shut- off the pump.

MAINTENANCE OF PUMPS:

ULTRA 600:

The pumps used on these models are factory sealed. When replacing a pump or motor it is necessary to re-lubricate the plunger and bearings. Use synthetic grease with PTFE. We recommend this brand: Super Lube. Check for sufficient lubrication as a maintenance procedure to extend the life of your pump and motor. Repair a pump as needed to prevent damage to the motor and/or bearing. Check the pump pressure on a regular basis.



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All pumps:

The warranty will be void if you do the following:

- 1.) If you don't flush the unit with fresh water after each day's use.
- 2.) If you attempt to mix dry powder chemical in solution feed.
- 3.) If you fail to properly install kit components, or modify kit.
- 4.) If you use chemicals greater than 9 PH OR LESS THAN 6 PH.
- 5.) If you re-wire the motor incorrect and the motor runs backwards.
- 6.) If you use water that is hotter than 140°F.
- 7.) Run the pump dry, causing cavitation.

MAINTENANCE OF MOTORS:

ULTRA 600:

The bearings are pre-lubricated. Periodic maintenance to assure enough lubrication is recommended.

The motor is equipped with and AUTOMATIC thermal protector to guard against overheating and will trip if it gets too hot.

Push the red button on the side of the cooled motor to reset the motor on the Ultra 1300 only

FULL LOAD AMPS:

Ultra 250: 3.4 on 220 volts/ 6.8 on 115 volts

Ultra 600: 3.4 on 220 volts/ 6.8 on 115 volts

Ultra 1000: 7.5 on 220 volts/ 15.0 on 115 volts

Ultra 1300: 7.5 on 220 volts/ 15.0 on 115 volts

INTERNAL CHEMICAL INJECTION SYSTEM (Ultra 1300):

- 1.) Open knob on control panel all the way counter- clockwise.
- 2.) Drop chemical feed line into chemical.
- 3.) DO NOT USE HARSH CHEMICALS THROUGH THIS SYSTEM, IT CAN DAMAGE YOUR PUMP AND ALUMINUM COILS. If you need a harsh chemical, apply it on the item you wish to clean before you start cleaning...wait...and steam clean the item after 10 - 15 minutes, or use the optional external chemical injection system.
- 4.) To end using the chemical injection, turn the knob on the machine all the way closed. The soap will now stop drawing. Please make sure this knob is closed when you are not using this system so the pump does not draw unnecessary air.
- 5.) Blocked internal chemical injection can affect the water flow to the pump and cause damage.



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MAXIMUM WATER INJECTED PER MINUTE:

Ultra 1000: at 1000 PSI at 20 PSI pump inlet conditions... you yield 8 ounces per minute.

MAINTENANCE:

If the opening around the needle valve stem becomes clogged, clean valve stem and passage way with warm soapy water. Rotate the control knob assembly counter clockwise (which includes the control knob and needle valve stem) until it can be lifted out of the body. Inspect valve stem O-ring and replace if necessary. Install control knob assembly by pushing down firmly on knob and turning clockwise until it is in the closed position. Set injector to desired setting.

SOAP SYSTEM NOT DRAWING:

- 1.) Make sure all of the soap lines are connected to barbs inside the machine.
- 2.) Make sure soap injection is now open on top of machine.
- 3.) Air may have been drawn into line and caused an air lock. Fill soap line with water forcing air through system.
- 4.) Water regulator is set at factory, but may be adjusted to create suction through the soap line. Adjust by setting T-bar in or out slightly.

TROUBLE SHOOTING GUIDE:

WHEN YOU GET THE "CLICK" BUT THE UNIT DOES NOT IGNITE:

- 1.) Make sure water is flowing through nozzle end of wand. The unit will not light if the gun valve is in the closed position. Unit will light faster if nozzle is removed before lighting, this speeds up any air locks.
- 2.) Check to verify that propane tank is not empty and that the propane tank valve is open.
- 3.) Check water supply to ensure adequate flow to unit. Your unit requires at least 20-30 lbs. of water line pressure, or the machine will not operate, a safety feature of your unit.
- 4.) Check to make sure nozzle is totally clear of obstructions.
- 5.) Check to see that your gas reading is NOT MORE than three or four pounds of pressure.
Too much pressure will also prohibit lighting.
- 6.) Check for spark at pilot burner:
 - b.) Is spark electrode hooked up? (This is the red nipple attached to the control module.)

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- c.) Is the burner grounded on the coil? If it is then re-position coil away from the burner.
- d.) Is the spark ceramic cracked or chipped or cable damaged? If so, replace the pilot assembly.
- e.) Check gap to see if it is 0.1". The spark gas is part of the pilot assembly housing.
- f.) If there is still no spark, replace the control module.
- 7.) Make sure your burner system in unit is not wet.
- 8.) Check to see if pilot is lit.

CAUTION: NEVER LOOK DOWN THE CYLINDER TO CHECK FOR THE PILOT

- a. To check this, put a mirror under the body of the machine to view the burner area. If there is a pilot, go to step 10.
- b. Check for a clogged pilot orifice.
 - a. Remove the thin coupler line and unscrew the pilot orifice from the pilot assembly. Two very little holes should be clear upon inspection up to a good light source. If not, then replace.
- 9a.) Check for supply of gas, if there isn't any then get propane tank filled or check for obstructions in gas lines or regulator. Fuel pressure gauge should never be run higher than 6 lbs. of fuel pressure, the burner can become flooded and not allow ignition.
- 9b.) Check to see if pilot solenoid is opening by connecting the wires to an alternate 24 volt source. (For example, lines three through six on the terminal strip. Touch one wire to this source and the other wire to a ground.) You should hear the "click" or the pilot solenoid opening. If you don't, then replace the solenoid.
- 10.) **If there is a pilot:**
 - a.) Check to see if the flame sensor is red hot, if not, clean or replace the pilot orifice.
 - b.) Check if the flame sensor wire is not damaged and hooked up properly. Replace or go on to "c".
 - c.) Check for cracked flame sensor. Removing the flame sensor will give you an accurate view of any chips or cracks to the flame sensor. If you find these, then replace the sensor. Tighten just slightly past hand tight.





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WHEN YOU DO NOT GET THE "CLICK"

PROCESS TO CHECK IGNITION SYSTEM BY A TESTER OR METER:

- 1.) Turn the pump and ignition switch to the "ON" position with the unit plugged in. The gas tank should NOT be hooked up to the machine at this time.
- 2.) Make sure the wand control is open and water is flowing through the machine.
- 3.) Check for 24 volts at the transformer. (Left side of the transformer as you face it.) If there is no voltage reading, change the transformer.
- 4.) To check for 24 volts on the terminal strip, start on line 4. Touch one wire of the volt meter to the wire on the terminal strip at position four and the other wire on a ground or neutral wire. If you get a reading then go on to line five and continue until the power is interrupted. Every switch has 2 wires, one accepting the power, and the other feeding back from the switch after it has been energized. Once the faulty switch is determined, then replace.

TEMPERATURE RISES TOO QUICKLY

- 1.) The air has not been purged from the system. Shut down and allow air to escape. To speed up this process, take the nozzle off and turn the pump "ON" and "OFF" a few times. Once there is a steady stream of water and there is no sputtering, then the pump should run smoothly also. Replace nozzle, turn on pump and machine should be ready to light. IF YOU LIGHT THE MACHINE AND HEAT AN AIR POCKET, YOU COULD BLOW A COIL. CAUTION IS ADVISED.

FUSES KEEP BLOWING

- 1.) If your circuit trips then move to a different outlet. You may be overloading that circuit.
- 2.) If the fuse on the machine is blowing again and again, you most likely have a problem with either your pump or motor, or you may be using too long of an extension cord. Try not to exceed 50 ft. of heavy-duty extension cord. Or you may be using the wrong size fuse. Check the machine specification table for correct fuse size.

PILOT BURNER DOESN'T SHUT OFF

1. The pilot solenoid may have debris in the valve not allowing it to close all the way. To repair: Remove any debris that may be lodged in the brass section of the valve.

EXCESS CARBON FORMS ON COILS

- 1.) Check position of coils to insure clear area around top of burner.



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- 2.) Mushroom section on the top of the burner may be loose and therefore shifted. Replace burner if this piece can be moved by hand.
- 3.) Inspect burner for debris in opening. If nothing is found, replace burner.

GAS FLAME GOES OUT OR IS IRREGULAR

NOTE: Various safety features will turn gas off automatically.

- 1.) If there is inadequate or fluctuating water pressure supply to the machine.
- 2.) If the unit overheats or rises on temperature to the red line on the temperature gauge.
- 3.) If internal gas pressure is too high.
- 4.) If you have a weak pilot or a cracked flame sensor rod.
WAIT 30 seconds for automatic re-ignition. If re-ignition does not occur, or if machine shuts repeatedly, check the following:
 - a.) Reduce LP gas pressure to reduce temperature by turning knob on the gas regulator counter-clockwise.
 - b.) Check nozzle for restrictions and clean.
 - c.) Check water supply for adequate flow, check for leaks at fitting and incoming water pressure.
 - d.) Remove pilot orifice and clean dirt out.
 - e.) Inspect and/or replace flame sensor rod, if cracked.
 - f.) Make sure the propane tank was not overfilled.

UNIT DOES NOT BURN HOT ENOUGH

- 1.) Check for max. setting on the temperature gauge. The knob may be adjusted downward. Keep red line @ 340°.
- 2.) Adjust LP gas regulator upward to a higher temperature by turning knob clockwise.
- 3.) Check fuel supply. The fuel pressure may be dropping due to the tank freezing. Change to a second tank.
- 4.) Check and make sure mushroom top on burner is secure and will not turn freely. If it does, replace.
- 5.) Burner may be blacked partially and not allowing enough gas supply to burn evenly. Check flame color around mushroom. Inspect the flame with a mirror under the machine to view burner area. If only a partial flame is visible, then replace the burner.

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ULTRA 600:

For electrical trouble shooting information, please refer to the web pages that assist with this information. Go to www.THERMA-KLEEN.com and go to the manuals. "Click on" the section that shows the terminal strip in the troubleshooting section of the propane manual. Follow the directions to help determine which component that maybe breaking the current.

HOSE MAINTENANCE:

ULTRA 600 PUMP EXPLODED VIEW:

Rebuilt Kits are available.

Kit A: Plunger with "O" rings, washers and lubricant

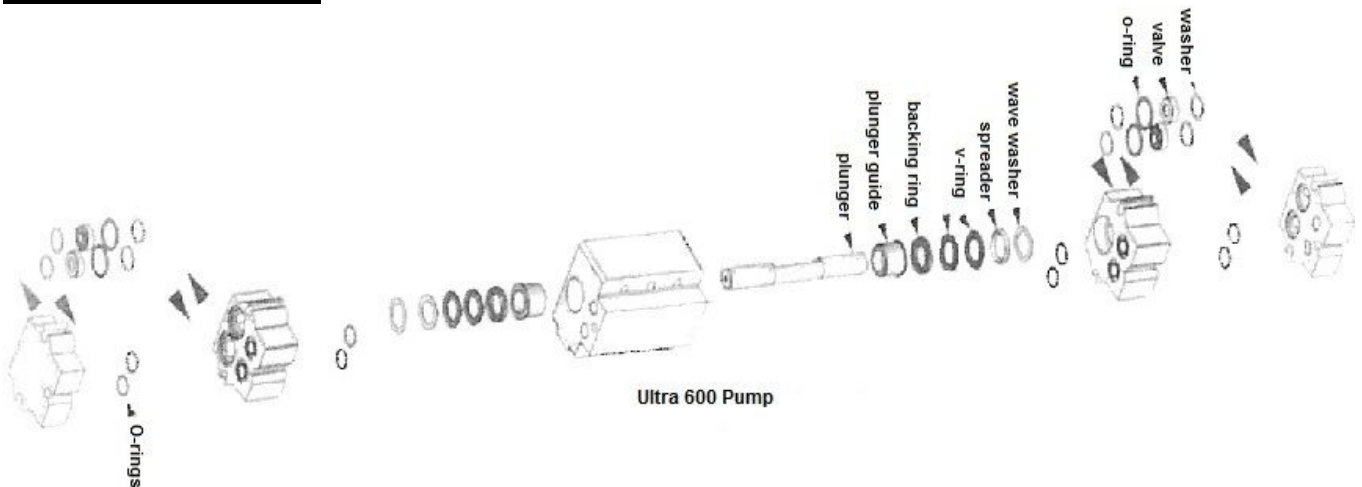
Kit B: Valve kit with "O" rings and washers

Kit C: Bearing (use with lubricant)

Lubricant: Synthetic grease with PTFE Brand: Super Lube.

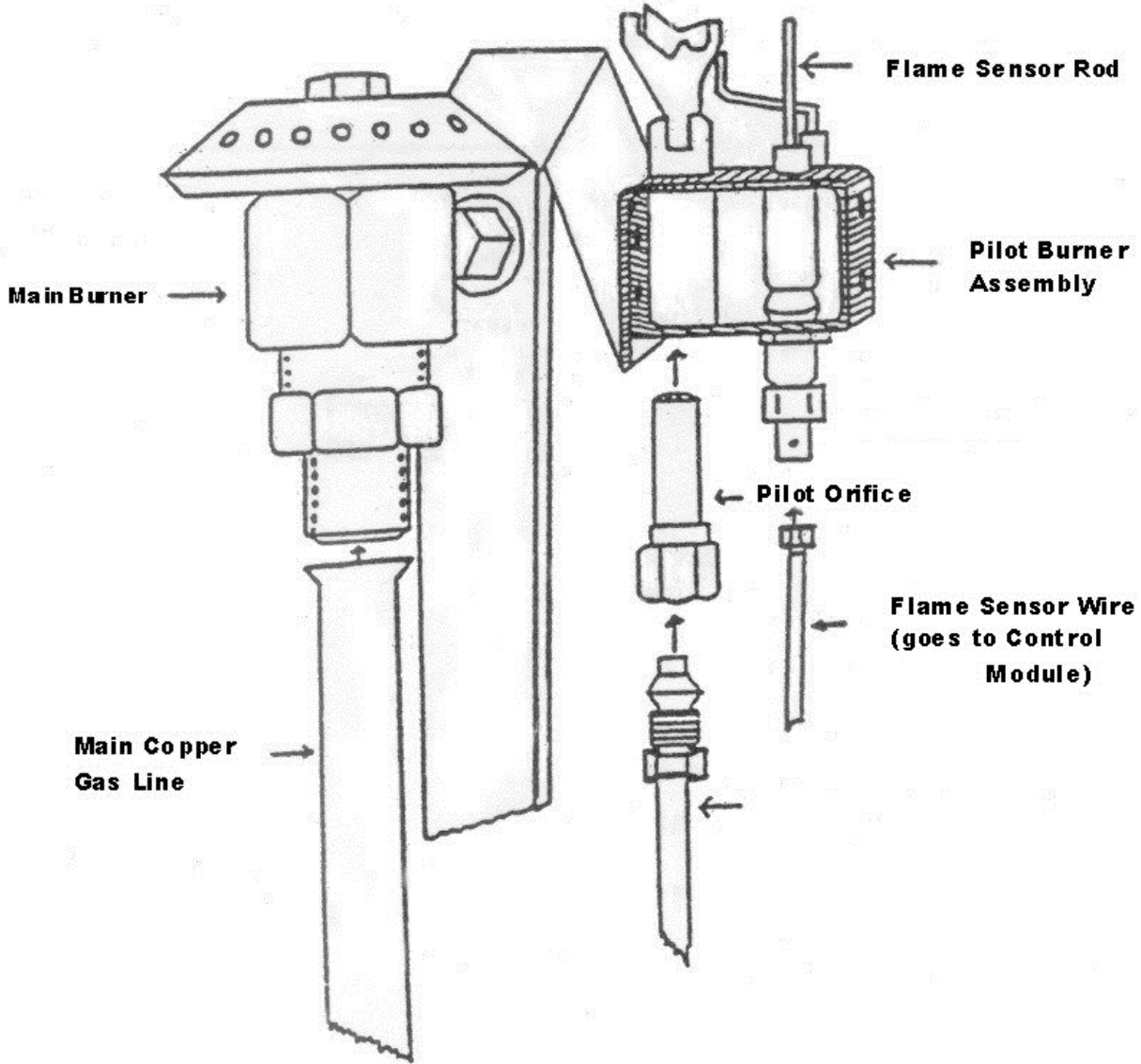
Failure to maintain pumps can cause damage to bearings and motors.

ULTRA 600 PUMP:



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BURNER WITH PILOT ASSEMBLY:



PARTS:

Coil Compression fittings



45° Fitting
Ultra 1300
#3973



Cap and Ferrule
for Ultra 1300
#3768/3767



Complete
Compression
Fitting 1300 33971



Compression
Fittings for Coil
Ultra 250/600 #3174



Spacer
#3632



Bearing
#6012

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Elbow Compression Fitting for Ultra 1300 #3972



Ultra 1300 Compression Fitting Breakdown



Ultra 250 Pump #3738



Ultra 600 Pump #6021



Ultra 1300 Pump #3903



25-50-100 ft. Steam Hose #3805/3673/3160



European Hose Plug #3675



European Swivel Fittings Female #3674



European Swivel Fittings Male #3671



Main Regulator with LP Gas Hose Fittings Quick Connect #3527



2.5 ft. Wand #3905



Snub Nose Wand #3668 (Optional Accessories)



Flame Sensor Rod #3345



Pilot Assembly w/Spark Wire #3383



Pilot Orifice #3384



Solenoid #3723



Trigger Gun #3359



4 ft. Wand #3661



Control Module #3241-A



Fuel Pressure Gauge #3348



Transformer #3359



Combistat #3240



Front Wheel for Ultra 600 #3880



Wheel Socket 250/600 #3870



10 inch Wheel #3871



Front Wheel for Ultra 1300 #3878



Ultra 250/600 Coils



Vertical Coil Ultra 250/ 600



Blast Nozzle



Fan Nozzle

TK THERMA-KLEEN
COMMERCIAL
Ultra Propane - Ultra 600



Ultra 1300 Coil et



Vertical oil
Ultra 1300



Fuse Holder



Toggle Switch Cover



Burner

PARTS LIST:

TANKS

30 lb. LP Tank	#3186
30 lb. LP Tank with Gauge	#3188
40 lb. LP Tank	#3189
40 lb. LP Tank with Gauge	#3192

SWITCHES

Pump/Ignition Switch	#3379
Flow Switch	#3822
Relay and Socket	#3393/3395

WATER SYSTEM

Pressure Relief Valve	N/A
Temperature Gauge w/Inlet Water Hose	#3240
Pulsation Hose	#3803
Water Regulator	#3712/3713
Garden Hose Fitting	#3355
Water Inlet Filter	#3860
Industrial Rubber Garden Hose	

COILS

Complete Set w/Fittings	#3172
Outer Coil, Inner Coil and Vertical Coil	#3782/3916/3917
Compression Fittings: Cap, Ferrule	#3852

GAS SYSTEM

Fuel Pressure Gauge	#3348
Main Gas Regulator	#3378



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LP Gas Hose Coils	#3369
Main Gas Burner	#3236
Pilot Gas Assembly w/Spark Wire	#3383
Flame Sensor Rod	#3345
Pilot Orifice	#3348
Solenoids	#3723
LP Gas Quick Connect	#3371

WANDS AND HOSES

- Snub Nose Wand-Deluxe
- 2.5 ft. Deluxe Wand
- 4.0 ft. Deluxe Wand
- 25 ft. Steam Hose w/Fittings
- 50 ft. Steam Hose w/Fittings
- 100 ft. Steam Hose w/Fittings
- Brass Plug for Hose End
- European Swivel Fitting for Hose-to-Hose
Connection and/or European Fitting
for Hose End Union

NOZZLES

- Fan Nozzle- 25 degree Spray
- Blast Nozzle- 0 degree Spray

ELECTRICAL SYSTEM

- Power Cord
- Strain Relief
- Fuse: ABC 1 ¼"
 - 10 amp/115 volt- Ultra 250
 - 10 amp/115 volt- Ultra 600
 - 20 amp/115 volt- Ultra 1300
 - 25 amp/115 volt- Ultra 1000
- Fuse Holder with Cap
- Control Module
- Transformer
- Terminal Strip
- Relay and Socket
- Flow Switch

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OPTIONS

Water Softener

- Industrial Garden Hose
- Hose Extensions
- External Chemical Injection System
- Snub Nose Wand
- 2.5 ft. Wand
- Stainless Steel Coils
- Heat Deflector

Water Broom

- Stack Cleaner
- Surface Cleaner

PUMP, MOTOR AND ACCESSORIES

- Ultra 250 pump
- Ultra 600 pump
- Ultra 1000 pump
- Ultra 1300 pump
- Ultra 250 motor 1/3 h.p.
- Ultra 600 motor ½ h.p.
- Ultra 1000 motor 1.5 h.p.
- Ultra 1300 motor 1.5h.p.
- Soap meter on pump
- Soap valve on control panel
- Soap line
- Chemical filter

L.P GAS PROPANE GAS (VAPOROUS DRAW):

Your propane fired, high pressure, steam cleaner provides you with a clean burning, odorless, USDA allowable system. Ideal for indoor use. We recommend you own two propane cylinders to provide you with many hours of cleaning time. Each cylinder will supply you with approximately 3-4 hours of total cleaning time. However, due to the nature of propane gas under pressure, you will only be able to utilize each cylinder of gas continuously approximately 1 ½ hours before switching over to your second cylinder. This will allow



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the first tank to “defrost” during the period of time you are using your second cylinder. REMEMBER: each cylinder shall last approximately 3-4 hours to total cleaning time and approximately 1 ½ hours of continuous cleaning time before necessitating a change over to a second cylinder. Do not run the machine in small confined areas. Check you local regulations for propane use in your area.

STORAGE:

It is very important that you store your cylinder filled with LP gas in an upright position and in a cool location. DO NOT leave your filled cylinder in a hot confined and unventilated environment. When you are not using your cylinder, it is recommended that you store it outside.

MOUNTING CYLINDER ON YOUR THERMA-KLEEN® MODEL

We suggest that you mount your cylinder on your THERMA-KLEEN® steam cleaner so that the regulator and LP gas hose are situated on the furthest side of the cylinder, away from the machine. Make sure all connections are tight. If you detect a strong propane smell, check all connections. DO NOT light the unit until this is corrected.

FUEL PRESSURE SETTINGS:

Ultra 600: Fan nozzle:3-4 lb.= 240°F temperature Blast nozzle:5-6 lb. 290-300°F temperature

Water temperatures coming into your hose vary from season to season, cold water will increase fuel pressure settings.

*Note: Stainless Steel Coils require slightly more fuel.

PROPANE TANK TROUBLE SHOOTING:

Always fill your tanks at a qualified propane refill center. If you encounter any difficulties please read the following:

If the tank is not purged properly the first time, air will mix with the vaporous portion of the propane and will cause sudden or erratic drop in fuel pressure. In addition, you may be drawing off the liquid since the vapor does not have room to be created. Return your tank to the place of business you had it filled or a propane location that can recover the propane and refill correctly. Another effect of not purging the system of air is the tank regulator freezes up quickly.

Tank overfilled: The result of an over filled tank is freezing at the valve or regulator.



LIMITED WARRANTY:

THERMA-KLEEN®, Inc. as manufacturer, warrants to the original purchaser, each new machine for a period of one year from date of shipment from the factory, to be free from defects in material and workmanship under normal use and service. “Normal use and service” means not in excess of recommended maximum pressures, temperatures, incorrect fuels, or handling fluids not compatible with component materials, as noted in THERMA-KLEEN®, Inc. manuals. This warranty shall not apply to any machine or component which has been repaired or altered to adversely affect the performance or reliability of this product. The heating element on the THERMA-STEEM® models will not be covered if distilled water is not used or scale is present. The boiler has a lifetime warranty.

Neither this warranty nor any implied warranty apply to damage or harm caused by any or all of the following: 1.) freight damage; 2.) freezing damage; 3.) damage caused by parts and/or accessories or components not obtained from or approved by THERMA-KLEEN®, Inc.; 4.) any consequential or incidental damages arising from the use of a THERMA-KLEEN®; 5.) damage due to misapplication or misuse. Pump valves and bearings on the Ultra models are not warrantied if they are broken.

The liability of THERMA-KLEEN® under the forgoing warranty is limited to repair or replacement of a defective component or part at THERMA-KLEEN®’s option. The defective component will be returned to the original manufacturer for judgment as to whether the component failed under normal operating conditions and therefore replaced or misused. These parts must be returned to the regional office or manufacturing facility within the warranty period, at the sole expense of the purchaser. This warranty is limited to furnishing of the parts for replacement exclusive of installation labor. The liability of THERMA-KLEEN®, Inc. under any theory of recovery (except any express warranty where the remedy is set forth in the above paragraph) for loss, harm or damage, shall be limited to the lesser of the actual loss, harm, damage, or the purchase price of the involved machine.

THERMA-KLEEN®, Inc. expressly warrants its machines as above stated. There are no other express warranties. Any implied warranties, including warranty of merchantability or of fitness for a particular purpose or merchantability when this product is put to an industrial, commercial or rental use. Before using any product, customer shall determine the suitability of the product for its intended purpose and the customer assumes all risk and liability whatsoever in connection therewith.

No person including any dealer or representative of THERMA-KLEEN®, Inc. is authorized to make any representation or warranty concerning THERMA-KLEEN®, Inc. products on behalf of THERMA-KLEEN®, Inc. or to assume for THERMA-KLEEN®, Inc. the obligations

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contained in this warranty. THERMA-KLEEN®, Inc. reserves the right to make changes in design and other changes and improvements upon its products without imposing any obligations upon itself to install the same, upon its existing products or products then in process or manufacture.