

EMISSIONS CONTROL KETTLE

Instruction and Safety Information



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WEB SITE: www.sparmarathonroofing.com

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IMPORTANT INFORMATION

WARNING

Misuse of this equipment may result in damage or injury. The manufacturer provides the following instructions for use and relies upon the purchaser to ensure that these instructions are given to the persons who will actually be using the equipment.

The employer shall permit only those employees qualified by training and experience to operate the equipment and machinery.

The employer shall instruct each employee in the recognition and avoidance of unsafe conditions and the regulations applicable to the work environment to control or eliminate any hazards or other exposure to illness or injury.

Regulations governing the use, selection, and maintenance of personal protective and lifesaving apparatus regulations must be followed.

SPAR-Marathon Roofing Kettles are designed and manufactured for the melting of roofing asphalt Types 1, 2, and 3. Any other use of this equipment will void any warranty or responsibility, expressed or implied, on the part of the manufacturer.

KETTLES SHOULD BE OPERATED BY EXPERIENCED PERSONNEL ONLY.

It is also a good idea to barricade the kettle area, and to keep unauthorized persons away from it.

INTRODUCTION

A close inspection of the kettle and its features will help in its efficient and safe use. Before initial loading, check the interior carefully, and remove any foreign material and water that may have accumulated. Even a small amount of water can create enough steam to cause an explosion.

DO NOT fire burners in the kettle when empty. They are removable for lighting and testing.

DO NOT operate the pump unless the flues are fully covered with material hot enough to flow freely, and the roof line is erected and fastened in place.

NEVER STORE COMBUSTIBLE MATERIALS NEAR THE BURNERS.

USE THE KETTLE SAFELY. Melted asphalt in the kettle is EXTREMELY HOT and can cause serious burns. Use care when handling material and equipment.

1. WEAR PROTECTIVE CLOTHING:

(and inspect the crew for compliance)

- Caps or Hardhats, as applicable
- Long sleeve shirts with buttoned cuffs
- Gloves with elastic tops
- High top shoes (safety shoes when chopping material)
- Cuffless long pants
- Face mask or shield while attending kettle

2. Always keep a working FIRE EXTINGUISHER, of an approved type, on hand at all times. *Never use water on a kettle fire.*

3. Always position the kettle in such a manner that will protect property and personnel in the event of accidental fire.

4. Always ensure that both front and rear drop legs are down and securely pinned before uncoupling the towing vehicle.

SPAR-Marathon ROOFING KETTLES

OPERATING INSTRUCTIONS and SAFETY INFORMATION

5. Always thoroughly inspect the entire kettle before using. For example, look for cracks, broken welds, broken or excessively worn or missing parts, loose nuts or bolts.
6. Always keep kettle, torch, fuel tank, hose, gauges, draincock, and other equipment in perfect working order.
7. Always follow all maintenance and safety procedures.
8. Always secure the fuel tank or LPG (Liquid Propane Gas) cylinder to ensure that it will not tip over. The fuel cylinder should always be placed UP WIND from the kettle, away from open flames, other flames or heat sources.
9. Always use a pressure regulator with gauge in good working order on LPG torch systems.
10. Always check accuracy of kettle thermometer with a known-to-be-accurate test thermometer.
11. Always check wheel lug bolts for tightness weekly. Check and re-tighten lug bolts after ever 100 miles of transport.
12. Always check tires for proper inflation, as indicated on the tire, and check for excessive wear.
13. Never place torch in kettle unless material is in vat.
14. Never leave torch or heated kettle unattended.
15. Never drop material into vat in such a manner as to cause a splash which may cause serious injury to personnel in the vicinity of the kettle.
16. Never heat material in the kettle above the maximum safe operating temperature as specified by the material manufacturer.
17. Never move kettle unless it is cold and empty.
18. Never modify or alter the equipment from its original design.

TOWING

SPAR-Marathon Roofing Kettles are designed and built for easy, safe towing, with welded all-steel frames, leaf springs, and pneumatic tires. Standard equipment includes eyebolt towing hitch, safety chain, lights and reflectors. (Electric brakes are supplied on MPK-350 and MPK-500 models.)

IMPORTANT: DO NOT tow kettle when contents are above the 'Towing Level' mark shown on the outside of the vat. Doing so may cause splashing and place undue stress on the tires and running gear.

DO NOT tow at speeds in excess of 50 MPH (80 Km/H).

Ensure that the tow hitch and safety chain are properly in place. Connect brakes (if kettle is so equipped) and tail lights before towing.

Chains must be attached to the towing vehicle in such a manner that the towed vehicle will turn easily, but that the tongue will not drag on the ground in the event that the hitch pin should become disconnected. Kettles should always be towed with the kettle and vehicle level. Ensure that chains are attached to the frame of the towing vehicle and not to the pintle hook.

LOADING AND MELTING MATERIAL

On the job site, PLACE THE KETTLE ON LEVEL GROUND, as near to building as practical. Lower the tongue by retracting the front jack leg, extend and lock the rear stabilizer legs, then extend the front leg until THE KETTLE IS LEVEL and most of the weight is removed from the tires. When using solid material, clear a space and cover it with plywood to keep the material clean.

1. Wear adequate protective clothing and a face shield while attending the kettle.
2. Place kettle in a level, flat area that is firm enough to keep the pot from tipping over.
3. Block the wheels to prevent rolling.
4. Check the draincock and ensure that it is closed and in good working order.
5. Cover a small area on the ground near the kettle with a piece of sheet metal or cardboard to provide a clean space for preparing material.
6. Place material on such covering and remove carton wrappings. Safely dispose of all wrappings.
7. Chop material into small blocks. When melting material from a cold start (that is, no hot material in the kettle), use very small pieces of material. Pieces not larger than 2-inches per side work best. After material has melted in the kettle, additional material can be added, in pieces not larger than 6-inches per side.
8. Open the vat cover on the kettle and load material until the vat is about 3/4 full. Close the cover, and then open the exhaust flue cover.
9. Light and install burner using procedures outlined previously.
10. The heat from the burner will now warm the inside vat and begin to melt the material. **EXTREME CARE MUST BE USED WHILE MELTING THE MATERIAL FROM A COLD START. THERE MAY BE LOCALIZED HOT SPOTS THAT POTENTIALLY MAY HEAT THE MATERIAL TO A TEMPERATURE THAT IS HOTTER THAN ITS FLASH POINT, WHICH COULD CAUSE A SPONTANEOUS FIRE. WATCH THE THERMOMETER AT ALL TIMES.**
11. Pay particular attention to the smoke coming out of the vat. If the smoke is white and coming out of the vat in small wisps, continue firing burner as outlined in the sections on burner operation. As the white smoke becomes thicker, turn down the valve on the burner to the lowest setting that will keep the burner firing.
12. If the smoke starts to come out thick, with a yellowish tint, **IMMEDIATELY TURN OFF THE BURNER** and remove it from the kettle. This thick yellow smoke indicates that the material has been heated to a temperature higher than its flash point, and a spontaneous fire is imminent. **DO NOT OPEN THE COVER.** Wait until the material has cooled and the thick yellow smoke is no longer emitted.
13. Re-light the burner and continue to heat material using the lowest flame possible, in order not to overheat the material. **WATCH THE THERMOMETER AT ALL TIMES.**

14. If the material should catch fire, **IMMEDIATELY CLOSE COVER**, turn off the burner, and remove the burner. If required, extinguish the fire with a **DRY POWDER FIRE EXTINGUISHER**. Allow the material in the kettle to cool before continuing. **NEVER** attempt to extinguish a fire in the kettle with water or Soda-Acid Fire Extinguisher. If fire threatens to spread, **IMMEDIATELY** call the nearest Fire Department, and inform them that you have an **OIL FIRE**.

ADDING ADDITIONAL MATERIAL

1. Wear adequate protective clothing and a face shield while attending the kettle.
2. Material may be added to the kettle at any time after the initial melt of the material from a cold start.
3. To add material, carefully open cover. Operator and other personnel in the vicinity should position themselves so that they are protected in the event a spontaneous fire occurs or the melted material splashes.
4. Chop material to be added into blocks that are 6-inches or smaller per side. Remember that smaller pieces will melt faster.
5. Lower the pieces into the vat carefully so as to not splash the liquid material in the vat. The liquid material in the vat is **EXTREMELY HOT** and can cause **SERIOUS BURNS**. Do not place any portion of your body over the vat.
6. Close cover.

REMOVING MATERIAL

1. Wear adequate protective clothing and a face shield while attending the kettle.
2. Place bucket or other container to be filled under the draincock. Ensure that the area under the container is smooth, level, and firm enough so that the container will not tip over.
3. **STAND UP-WIND** of the draincock so that liquid material and flames cannot blow on you. Slowly and carefully raise handle on draincock. Material will flow out of draincock into bucket. **REMEMBER**; Overheated material can flash at any time. **WATCH THE THERMOMETER**.
4. When bucket is filled to the desired level, slowly and carefully lower handle on draincock to stop flow. **DO NOT OVERFILL CONTAINER**.
5. Wait until all flow has stopped before moving container so that liquid material will not drip on you. Handle container with extreme care so that the material will not splash or spill.
6. The liquid material in the vat and the bucket is **EXTREMELY HOT** and can cause serious burns.
7. If the draincock will not open, or if the material will not flow out of the draincock, it is likely that the material has cooled; re-heating would re-liquify the material. **DO NOT HEAT MATERIAL ABOVE THE MANUFACTURER'S RECOMMENDED MAXIMUM TEMPERATURE. DO NOT ATTEMPT TO UNSTICK A DRAINCOCK BY PRYING ON IT. DO NOT INSERT ANY OBJECT IN THE DRAINCOCK OPENING.**
8. Never drain material in vat to expose the horizontal heating tubes.

STOPPING OPERATION

(For LPG, see separate burner instructions)

1. Turn off and remove burner from kettle.
2. Allow material and kettle to cool. **NEVER** move the kettle while it is hot or if there is liquid material in the vat.

SHUT DOWN

The liquid asphalt inside the kettle should be skimmed daily to prevent build-up of debris which may cause the pump to clog. Before leaving job site, ensure that burners are extinguished and fuel supply is shut off. Close exhaust stack covers and lock up engine cover, burner well cover, lids, and draincock, to prevent theft or vandalism.

CLEANING

A clean kettle heats better, lasts longer, and is less of a fire hazard. It is important that a cleaning schedule be maintained. Frequency will depend upon usage and other circumstances, but it is recommended that the inside be completely cleaned at least once a year. To do this, tilt the kettle while still hot and drain as completely as possible through the draincock. Then remove the pump intake strainer and elbows, lids, and bolts holding the rear (flue) cover. With the chain hoist hooked into the rings on the flue exhaust stacks, lift the rear of the flues (at the same time, slide them back), until the junction box is clear of the pump and front cover. Then, put additional hooks into the ring(s) provided at the front of flues and remove the entire unit. It is not necessary to remove the pump.

With the cover and flues removed, it is relatively easy to shovel out any trash or residue that may remain in the vat. If there is any coking on the walls, it should be chipped off, taking care not to damage the interior of the vat. Scrape or sandblast the flues. It is also good practice to clean the draincock with a wire brush.

To re-install the flues, reverse the above procedure, making certain that all bolts are tightened securely.

IMPORTANT

The level of asphalt should never be allowed to drop below the top of any portion of the flues as a flash fire or explosion could result. Also, exposed flues will burn out prematurely. If a flash fire should occur due to overheated or exposed flues, **CLOSE THE LID AT ONCE. DO NOT THROW WATER ON THE VAT.** Shut off the burner and remove it at once and allow the material to cool down. The use of a Carbon-Dioxide (CO²) Fire Extinguisher is recommended for the control of kettle fires. As a last resort, cover a fire with sand or dirt. If a fire threatens to spread, call the nearest Fire Department.

**ALWAYS KEEP A FULLY-CHARGED
FIRE EXTINGUISHER
READILY AVAILABLE
AT ALL TIMES.**

PUMPING

Pumper kettles have a fully immersed pump so that the heated material keeps it in operating condition. **NEVER START THE PUMP ENGINE UNTIL THE MATERIAL IS HOT** and the pump line is connected, or discharge pipe is capped.

Set up a pump line to the roof, keeping it as short and as vertical as possible, and run a valve rope to the roof. **PUMP LINES OVER 50 FEET SHOULD BE SUPPORTED.** Start pump engine when material is hot and pump will circulate the material in the vat through a by-pass valve. When material is required at the roof, pull rope to close this valve and stop the flow.

CAUTION: Under no circumstances should a plugged pump line be 'thawed' while in place. Dismantle first and heat while on the ground. Check pump packing frequently (when hot) and tighten if there is excessive leakage. **DO NOT OVER-TIGHTEN.** Add new packing when adjusting nuts near maximum travel.

LIGHTING PROPANE-FIRED BURNERS

1. Check all hoses and connections for leaks and replace if necessary.
2. Open exhaust stack covers.
3. Place burners on ground, pointing away from kettle or any combustible material.
4. Make certain Globe Valve (at burner) is closed and adjust Regulator (on tank) to a maximum of 25 PSIG*.
5. Open the Globe Valve just slightly and use either a welder's spark lighter or a portable propane torch to ignite.
6. Open valve on propane tank fully.
7. When flame starts, re-adjust Regulator to a maximum of 25 PSIG and insert burner in burner well.
8. Open the Globe Valve fully and again adjust Regulator to a maximum of 25 PSIG. Flame size can be decreased by reducing pressure at Regulator.
9. To shut off, close valve at top of propane tank.
10. If Safety Shut-Off Valve is included in burner train, hold down red button at top, then open the Globe Valve and light as above.
It will be necessary to hold down this button until generating coil has heated the thermocouple sufficiently to maintain the flow of propane. This may require several minutes.
11. If the kettle is equipped with an Automatic Temperature Control unit, follow the instructions that are supplied with the automatic control.

MAINTENANCE

A well-maintained kettle is your best insurance against work slowdowns or stoppages, damage, or injury. Check the equipment frequently, paying special attention to tire pressure, burners, engine and pump. Individual instructions are supplied for the engine and pump, and it is essential that the manufacturer's recommendations for operation and maintenance are followed.

IMPORTANT

- Lubricate pump twice a day with special high-temperature grease.
- Ensure that clean fuel is used in the engine, and that oil level is maintained in the crankcase and reduction unit.

WARNING

- **DO NOT USE GASOLINE IN DIESEL ENGINES; IT WILL DESTROY THE ENGINE.**

PLAY IT SAFE

Highly combustible materials (asphalt, propane, gasoline) are involved in pumper kettle operations; extreme care should be taken at all times. As well, all Federal and Provincial Regulations that pertain to the use of propane must be followed. For example, most provinces require that propane tanks must be placed on a firm base, in an upright position, and located at least 10 feet away from burners, combustible materials, and buildings.

Careless handling and misuse are the most common source of accidents and can result in damage or injury. Be sure that all operators fully understand all instructions and guidelines. If in doubt, please contact SPAR-Marathon.

The following instructions and guidelines should also be followed:

- Asphalt manufacturer's instructions and guidelines
- Propane supplier's instructions and guidelines
- Kettle engine manufacturer's instructions and guidelines
- Kettle pump manufacturer's instructions and guidelines

WARRANTY

SPAR-Marathon Roofing Supplies (a division of SPAR Roofing & Metal Supplies Limited) warrants all new SPAR-Marathon Asphalt Melting Kettles to be free from defects in material and workmanship. Under normal use and service, any part or parts found to be defective within **THIRTY (30) DAYS** from the date of the original sale will be repaired or replaced, providing that our inspection establishes the defect to be due to faulty material or workmanship.

SPAR-Marathon Roofing Supplies assumes no liability for the cost of labour or transportation in connection with the repair or replacement of any defective part.

This warranty shall not extend to any damage that may result from accident, careless handling or misuse, and in no event shall SPAR-Marathon Roofing Supplies be liable for delay caused by defects, for consequential damage, or for any other damages, charges, or expenses of any nature.

SPAR-Marathon

ROOFING SUPPLIES

A division of SPAR Roofing & Metal Supplies Limited

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KETTLE AFTERBURNER AND SAFETY LOADER

Instruction and Safety Information



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| | | | • Bensenville (Chicago), IL |

Warning

- Park the kettle on firm and level ground away from doorway.
- Always keep the instruction manual with the machine for reference.
- Make sure all three-fire arrester screens are in place and in good condition before operation or serious injury/death or equipment damage could occur due to backfire and/or explosion.
- Do not open the kettle lids when afterburner is running.

Warning labels have been included on the equipment. If the warning labels wear off, please request new ones.

Misuse of the afterburner may result in injury or damage. SPAR-Marathon provides instructions for its safe use and relies on the purchaser to ensure that these instructions are given to the personnel who will actually be using the equipment.

It is the responsibility of the purchaser to ensure that the personnel operating the afterburner are trained in the proper operating procedures and all safety regulations.

The employer shall instruct each employee in the recognition and avoidance of unsafe conditions and the regulations applicable to work environment to control or eliminate any hazards or other exposure to illness or injury.

Regulations governing the use, selection and maintenance of personal protective and lifesaving apparatus regulations must be followed.

The SPAR-Marathon afterburner is designed and manufactured for use on kettle only. Any other use of this equipment will void any warranty or responsibility, expressed or implied, on the part of the manufacturer.

Do not change or modify the equipment. Any unauthorized change or modification of the equipment will void the warranty and responsibility.

The afterburner should be operated by experienced personnel only. It is a good idea to barricade the kettle area and to keep unauthorized persons away from it.

⚠ Warning Do not operate the equipment until all the operator manuals come with the equipment have been read carefully and fully understood by the operator who will actually operate this equipment.

Do not operate this equipment if you have question about the operation procedure or not understanding the operator manual. Call SPAR-Marathon for information before proceed.

Setting up the afterburner

⚠ Warning Use vapour withdrawal LP gas cylinder only. Serious injury or death could occur if liquid LP gas and any other fuel type are used.

Use approved LP gas pipe thread sealant only on all thread.

Check the LP gas cylinder and all its components, hoses and valves for damage, repair or replace if damage.

- 1) Open the exhaust stack cover.
- 2) Clean the three stainless steel fire arrester screens each time before operation. Tar and asphalt remover can be used to clean the screens. Let screens to be fully dry before putting back into the stack. Replace the screens if damaged. Make sure all three-fire arresters are in place before operation or serious injury/death or equipment damage could occur due to backfire and/or explosion.
- 3) Check to make sure all the afterburner valves and regulator valve are closed. Connect one end of the LP gas hose to the afterburner valve and the other end to the regulator at the vapour LP gas cylinder. Move the vapour LP gas cylinder to upwind from the kettle and away from any heat or open flame. Check local by-laws for minimum distance from kettle. Secure the vapour LP gas cylinder to avoid it from tip over.
- 4) Slightly turn on the vapour LP gas cylinder valve. Check for leak with soap solution and smell for distinctive smell. If leaking is found, turn off the valve and tighten the connection or replace any damage component. Repeat the leak test procedure. Do not use a flame to check leak.

Loading the kettle

- 1) Before lightening up the burners in the kettle, load the kettle with chopped bitumen through the skim opening. Level the bitumen in the kettle.
- 2) Close the skim door.
- 3) Refer to kettle operation manual to prepare for lightening up the kettle burners.
- 4) After the bitumen is melted, the safety loader must be used to add additional bitumen.

To operate the safety loader

- 1) Open the safety loader door and put in chopped bitumen to the bitumen holder inside. Smaller size of chopped bitumen should be used. It will melt faster and will be circulated away from the loading area and avoid pile up of solid bitumen under the safety loader.
- 2) Close and lock the safety loader door.
- 3) Rotate the safety loader handle up and let the chopped bitumen to fall into the kettle.
- 4) Repeat loading through the safety loader until the bitumen level reach the full mark.
- 5) Check bitumen level frequently through the slim door.

⚠ Warning Pay extra care when open any kettle lids. Stand as far as possible and use wooden handle to open the cover. Do not lean head or any part of body close to the opening. Hot vapour or backfire may cause serious personal injury.

Operation of the afterburner

⚠ Warning Do not operate the afterburner without all three fire arrester screens in place. Serious injury/death or equipment damage could occur due to backfire and/or explosion.

Do not touch the afterburner chimney. It is very hot and will cause serious burn and injury if contact with the skin.

Keep all the kettle lids closed when afterburner is operating. Extra care when open any kettle lids. Hot vapour or backfire may cause serious personal injury.

Never leave the lighted kettle burner or the lighted afterburner unattended.

Do not turn the afterburner valve fully open or the excessive heat may damage the stack.

The afterburner should be lighted when first sight of smoke is visible from the exhaust stack.

- 1) Open the exhaust stack cover.
- 2) Make sure all the afterburner valves are closed.
- 3) Turn on the vapour LP gas cylinder valve fully open.
- 4) Set the regulator reading to maximum 7 lbs pressure.
- 5) Open the afterburner service door at the bottom of the exhaust stack.
- 6) Have a hand torch ready and hold the torch close to the afterburner inside the stack.
- 7) Light the afterburner with the hand torch while turning on the afterburner valve slowly.
- 8) If flame dies out or does not light up right away, turn off the afterburner valve. Repeat step 6 to light the afterburner.
- 9) Close the afterburner service door.
- 10) Adjust the afterburner valve slowly until smoke is not visual from the stack. Do not turn the afterburner valve fully open or the excessive heat may damage the stack.

Shutting down after operation

Note: Operator should shut down the kettle burner and let the bitumen in the kettle to cool down before shutting down the afterburner.

- 1) Turn off the main valve on the vapour LP gas cylinder first to let the gas in the line to burn out.
- 2) After the flame burn out by itself, turn off all the valves on the afterburner.
- 3) Disconnect the hose from the afterburner valve and the vapour LP gas cylinder and store in a safe place.
- 4) Close the cover on the emission stack.

Maintenance of the afterburner

Clean the three stainless steel fire arrester screens each time before operation. Tar and asphalt remover can be used to clean the screens. Let the screens to be fully dry before put back to the stack. Replace the screen if damage with cut or hole is found. Make sure all three-fire arresters are in place before operation or serious injury/death or equipment damage could occur due to backfire and/or explosion.

⚠ Warning Do not operate the afterburner if any of the fire arrester screens is damage with cut or hole. Damage screen must be replaced before operation or serious injury/death or equipment damage could occur due to backfire and/or explosion.

