



# **CRACK JET II™**

## OPERATING MANUAL



*The Premium Crack Preparation Tool!*

**K M International**  
(aka Keizer-Morris International, Inc.)

*THE CHOICE OF ASPHALT PROFESSIONALS WORLDWIDE*

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## CRACK JET II <sup>TM</sup>

The KM International Team would like to take this opportunity to **THANK YOU** for your purchase of the **KM CRACK JET II <sup>TM</sup>**. We at KMI are confident that your newest KM International Purchase will offer years of safe, reliable and cost effective crack maintenance and repair.

KM International, Inc. has acquired and developed a number of strengths that has fostered KMI's worldwide reputation in the "SURFACE HEATING and REPAIR" industry. We have set the "Gold" and "Green" standards in Asphalt Repair. We are the preeminent authority on the "infrared process" of in place "surface heating" and "recycle and repair." We have fostered an ongoing industry standard of quality and excellence that continually exceeds our customers' expectations in all of our other product offerings including our "Infrared" line of equipment.

Our commitment to the design and manufacture of the highest quality surface maintenance and repair equipment in the market is not just a "quote on the wall" but rather the driving force for the entire KMI team. Our 26 years in the "Infrared" industry has provided KM INTERNATIONAL the necessary experience in the "Surface Heating" industry that has given our customers the "peace of mind" that only experience and knowledge can accomplish and that our customers have come to rely on.

The Management Team at KM INTERNATIONAL is confident that YOUR purchase of the **KM CRACK JET II <sup>TM</sup>** will be the basis for a long standing and profitable relationship. The Goal at KM INTERNATIONAL has and will always be to manufacture asphalt maintenance and repair equipment that provide our customers cost savings, purchase justification and profitability.



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**SAFETY AND WARNING INFORMATION** READ and UNDERSTAND all instructions carefully before starting the KM CRACK JET II™. FAILURE TO FOLLOW these instructions may result in a possible fire hazard and will void the warranty. Any safety screen or guard removed for servicing must be replaced before operating the KM CRACK JET II™.

**DO NOT USE** the KM CRACK JET II™ if any part has been damaged or placed under water. Immediately CALL a qualified service technician to inspect the appliance and to replace any part of the control system and any gas control, which has been damaged.

**THIS UNIT IS NOT FOR USE WITH SOLID FUEL AND REQUIRES PROPANE GAS OR SIMILAR COMBUSIBLE GASEOUS PROPERTIES.** Repair should be PERFORMED by a qualified service person. The KM CRACK JET II™ should be INSPECTED before initial use and at least annually by a professional KMI service person. It is IMPERATIVE that the unit's burners and air passageways ARE KEPT CLEAN to provide for adequate combustion. Always KEEP the KM CRACK JET II™ clear and free from combustible materials, gasoline, and other flammable vapors and liquids.

**NEVER OBSTRUCT** the flow of combustion and air flow. Keep the front of the KM CRACK JET II™ CLEAR of all obstacles and materials for servicing and proper operation. The heat can and will get DANGEROUSLY hot very quickly; care and caution must be observed at all times. Be aware of your surroundings. Use caution around buildings, utility wires, combustibles, landscaping, etc. to prevent damage.

**IT IS HIGHLY RECOMMENDED THAT YOU HAVE A FIRE EXTINGUISHER ON YOUR JOB SITE AT ALL TIMES.**

**WARNING: ALWAYS WEAR PROTECTIVE CLOTHING INCLUDING EYE AND EAR PROTECTION WHEN OPERATING THIS OR ANY OTHER EQUIPMENT.**

**REGULAR MAINTENANCE REQUIRES INSPECTION OF FUEL LINES AND CONNECTIONS.**

**WARNING: FIRE OR EXPLOSION HAZARD CAN CAUSE PROPERTY DAMAGE, SEVERE INJURY OR DEATH. CHECK FOR GAS LEAKS WITH SOAP AND WATER SOLUTION ANYTIME WORK IS DONE. NEVER USE AN OPEN FLAME TO CHECK FOR FUEL LEAKS!**



# CRACK JET II™

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## **INTRODUCTION**

The KM CRACK JET II ™ crack preparation tools are designed to give years of dependable high performance service. Their solid welded construction stands up well to commercial use. The simple, straight forward design has little to go wrong and can be maintained easily.

## **SAFETY**

Safety is a main concern when working with any fuel combustion system and the KM CRACK JET II ™ propane system should be no exception. Gas leaks present a danger and should be tested for daily. Use a strong soap and water solution around fittings, bottles and hoses, watching for bubbles. **NEVER** use a flame to locate a suspected leak.

The KM CRACK JET II ™ crack preparation tool is designed to generate heat. The heat can and will get DANGEROUSLY hot very quickly; care and caution must be observed at all times. Be aware of your surroundings. Use caution around buildings, utility wires, combustibles, landscaping, etc. to prevent damage.

**WARNING: Explosions can occur if gas is present!!!!!!!!!!**

Whenever heating on or around manholes and other underground utilities, always check with the local utility company for presence of gas or combustibles. Use a gas sniffer or detector.

**CAUTION:** When heating asphalt where rubber crack fill exists, take extreme care as the rubber may catch fire. To effectively clean cracks that have previously been rubber filled will require the discarded rubber to be melted and blown from the crack; this may cause some flame.

**IT IS HIGHLY RECOMMENDED THAT YOU HAVE A FIRE EXTINGUISHER ON YOUR JOB SITE AT ALL TIMES.**

**WARNING:** Inspect all fuel lines and connections daily before using the KM CRACK JET II ™. **DO NOT** use if damaged in any way. **DO NOT** allow the fuel line to lie against the bottom of the machine or on hot asphalt during use. **DO NOT** expose the hose in any way to heat or physical abuse during operation.

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## OPERATION

*Before beginning operation, check engine and compressor oil. We recommend 10W30 in engine and 30W non-detergent oil in compressor. Be sure the hose is connected to the wand.*

1. Start engine and set throttle to max speed. The throttle stop has been factory set for proper RPM. DO NOT force or bend the throttle stop tab located behind the air cleaner. DO NOT Adjust RPM.
2. Slowly open the propane cylinder making sure not to activate the excess flow safety shut off. (Quick opening may trigger the excess flow valve and prevent flow of gas to the wand.)
3. Point the wand in a safe direction and depress the button on the electronic igniter. *\*NOTE: A loud "POP" indicates that combustion is occurring. A loud "HISSING" noise indicates ignition and proper wand operation.*
4. If necessary for ignition, turn the propane adjustment regulator **clockwise to increase** or **counterclockwise to decrease** the propane supply by 1/8 turn increments only. DO NOT OVER ADJUST! Always loosen and tighten the packing nut on the regulator when adjusting.
5. During operation decrease (or lean) the propane supply to optimize fuel consumption and proper heat lance operation.

**WARNING: WHEN IN OPERATION THE WAND BARREL IS DANGEROUSLY HOT! THE WAND OPERATES AT 2,800 DEGREES FAHRENHEIT (1,538 DEGREES CELCIUS).**

6. When completed close the valve on the propane cylinder to turn off the fuel and then allow the engine to run for two additional minutes before shutting off.

**WARNING: THE WAND BARREL OPERATES AT 2,800 DEGREES FAHRENHEIT AND WILL REMAIN HOT AFTER TURNING OFF THE ENGINE. DO NOT TOUCH IT AND DO NOT ALLOW IT TO CONTACT FLAMMABLE MATERIALS.**



## TROUBLESHOOTING

*Problem: The wand will not stay lit.*

Be sure the engine throttle is open all the way to the throttle stop. Do NOT bend throttle tab behind air filter! Slowly adjust the propane regulator while repeatedly pressing the igniter. Take notice of where the regulator adjusting knob is before you start. Loosen the locking nut under the regulator knob before attempting to make an adjustment. *NOTE: Failure to do so will strip the regulator body.* When adjusting, turn the knob slowly (**1/8 to 1/4 turn at a time**) clockwise; if no ignition go back to where you started and slowly turn the knob (**1/8 to 1/4 turn at a time**) counterclockwise. You will know when you are close to the proper adjustment when a “popping” sound occurs. Continue slowly turning the knob in or out until the wand “pops” and lights.

*Problem: Regulator adjustment does not get the wand to “pop” and light.*

Check the spark plug and spark plug wire for damage.

Check the condition and gap of the spark plug. If the electrodes are dirty, they must be cleaned and re-gapped according to the proper specification. If the spark plug requires replacement it must be re-gapped as well.

- *Piezo Igniter:* Red button, one fire per push or “snap”. The spark plug must be gapped at 0.08 inch (thickness of a nickel) (2.04 mm).
- *Electronic Igniter:* Black igniter box with small black button located under protective metal cover. The spark plug must be gapped at 0.08 inch (thickness of a nickel) (2.04 mm).

With the plug removed and the electrodes visible, check for a spark. Be sure that the igniter and spark plug are properly grounded. If they are not grounded, you may receive an electrical shock when the igniter is fired. The igniter will fire the spark plug once per push, while the electronic igniter will fire the spark plug continuously while depressed. If the igniter fails to produce a visible spark, it must be replaced. Under no circumstances should anyone EVER look down the barrel of the wand during ignition.

*Problem: Cold weather affects lighting and operation.*

During prolonged operation in cool weather, the propane bottle may “freeze up”, especially a bottle that is below one-half (1/2) full.

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This will cause propane pressure to fall below the regulator pressure and the wand will be hard to light and will operate poorly. To solve these problems, carry an extra propane cylinder to exchange with the “frozen” bottle. NOTE: It is recommended to keep a bottle warm (approximately 70 degrees Fahrenheit) and begin cold weather operation with a full warm bottle.

*Problem: While operating, the wand will not stay lit and/or the regulator continually needs adjustment.*

Check the locking nut under the propane adjustment regular knob. If it is not tight, then the adjustment knob may be vibrating in or out.

The compressor V-belt may be slipping; tighten adequately and/or apply belt dressing.

*Problem: Will not light or stay lit - was working until.....*

After deducing that “all of the above” does not work, it may be necessary to disassemble the wand and clean the six inch mixer nipple.

**WARNING: Do not attempt to disassemble wand while operating or within thirty (30) minutes after sustained operation. The Crack Jet wand operates at 2,800 degrees Fahrenheit (1,538 degrees Celsius).**

Refer to the Crack Jet II parts diagram at pages A-1 and A-2. The wand safety cover in the wand diagram will need to be taken off the wand and checked for debris caught in the mixer nipple and/or in the base of the wand. When reassembling the wand, be sure that the mixer end of the six inch nipple is installed toward the top (quick connector) end of the wand.





## PERIODIC MAINTENANCE – COMPRESSOR

### 1. SAFETY RULES

- a. Always remove compressor belt from motor prior to working on the compressor. Ensure the spark plug on the engine is disconnected to prevent inadvertent starting of engine.
- b. Bleed any air pressure off system.
- c. Be careful when disassembling/assembling: sheet metal may have sharp edges.
- d. Allow unit to cool to ambient temperature before performing any type of service.
- e. Turn off, disconnect, and remove propane bottle prior to servicing equipment.
- f. Do not operate with the belt guard removed.
- g. Avoid any contact with the engine, compressor or drive components when they are running.

### 2. DAILY

- a. Check oil level at sight glass (proper level is 2/3 full) or dip stick. Check engine oil on gasoline engine.
- b. Verify that the pressure unloader is working by listening for a hissing sound when ring is pulled.
- c. Visually inspect the machine for loose/missing parts or excessive wear. Listen for any unusual noise or vibration.

### 3. MONTHLY

- a. With machine off and cooled, check the belt tension. The belt tension should be adjusted to allow 3/8" to 1/2" deflection with normal thumb pressure. Be careful not to over tighten the belt as premature wear and premature bearing failure will occur.
- b. Remove and check the air filter. Replace or clean if dust/dirt is present.

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c. Replace oil after first 50 hours of operation. After that, change oil every month or 200 hours. Compressor grade non-detergent oil should be used (see chart). **DO NOT USE A DETERGENT OIL!**

<u>TEMPERATURE</u>	<u>OIL WEIGHT</u>	<u>TYPE</u>
0 to 32 degrees F	10 weight	non-detergent
32 to 55 degrees F	20 weight	non-detergent
55 degrees & above	30 weight	non-detergent

NOTE: All units run at a constant speed (not start and stop) and if you wish, you can operate the compressor on synthetic compressor oil. However, do **not** use synthetic oil for the first 200 hours. All units should be broken in on petroleum based oil.

d. Re-torque the compressor head bolts after the first 200 hours of operation.

e. Check to verify that compressor flywheel nut is tight. **SPECIAL NOTE:** Flywheel shaft has **left-hand** thread. Tighten nut by turning counter-clockwise.

#### 4. PERIODIC MAINTENANCE – ENGINE

a. Follow all engine manufacturer’s recommendation for maintenance.

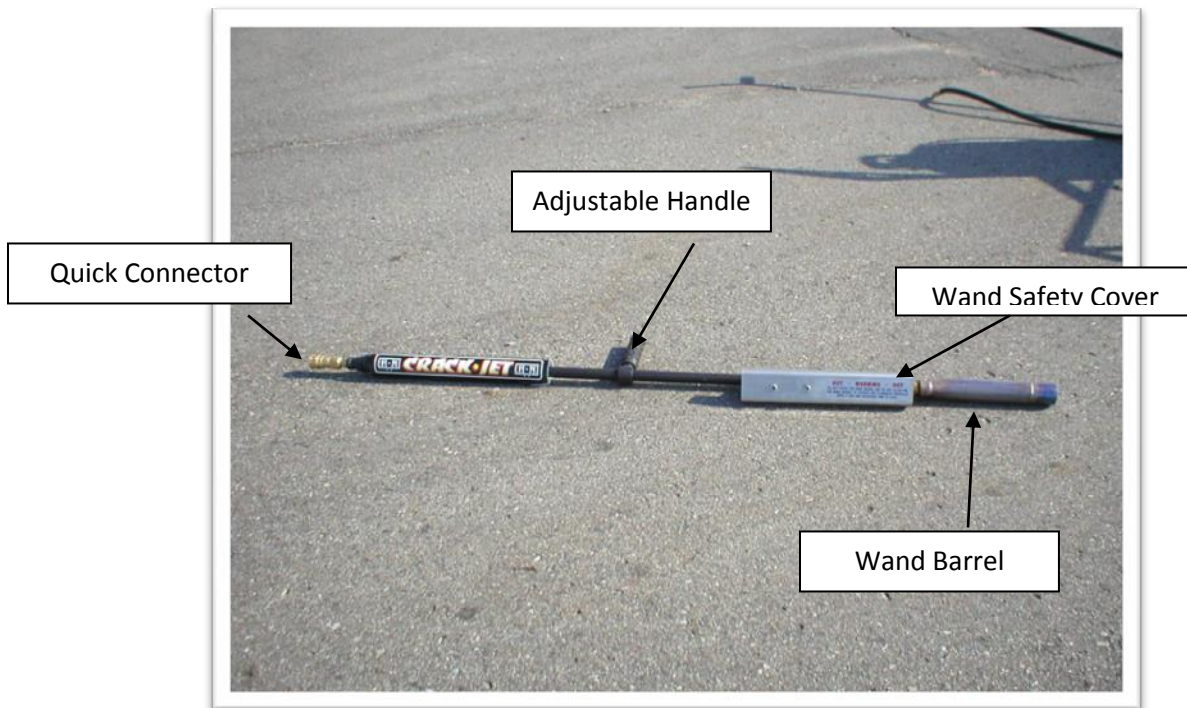
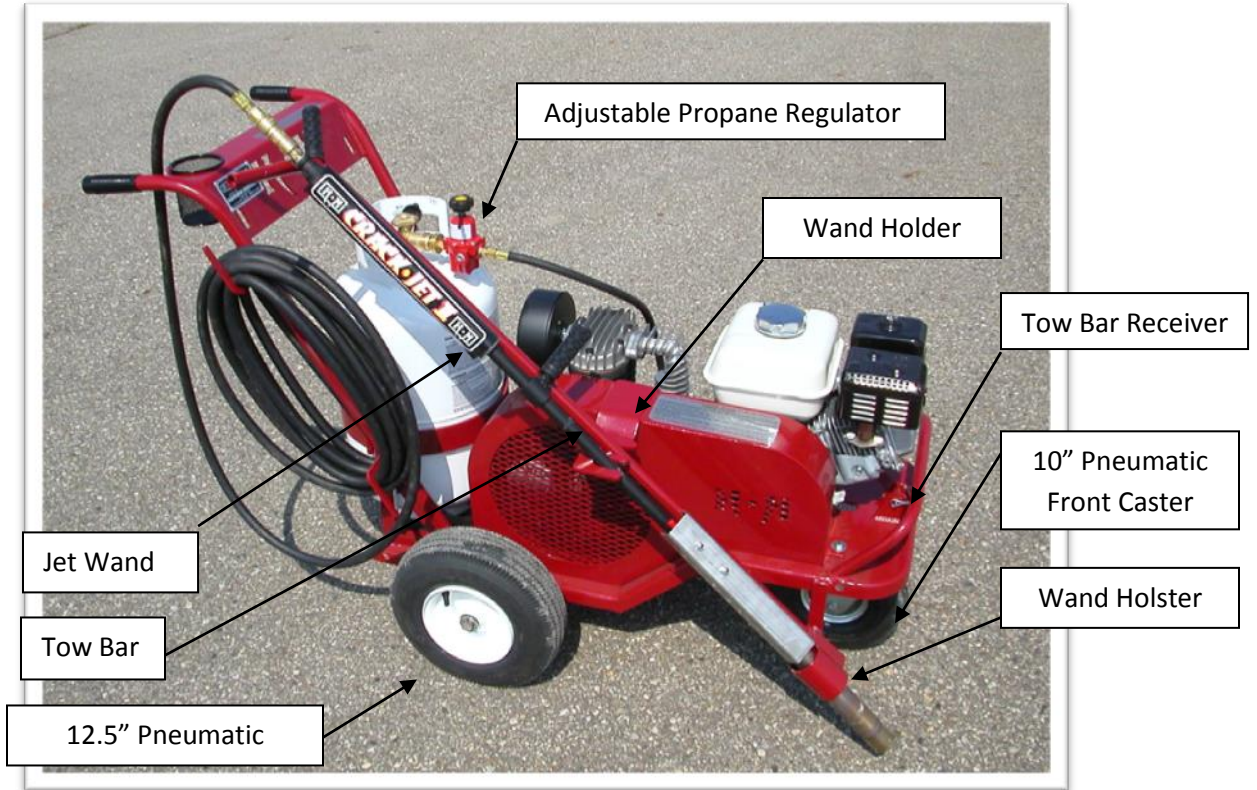
b. Tighten the set screws on the engine pulley monthly.

c. Check for “slop” in the engine shaft keyway; replace if necessary.

#### CJI Parts Diagram

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## Wand Assembly Diagram

