



Operator's Handbook
for
RFT
Electrosurgical Instrument
Test Station

**For use with the MicroMed PD-8K or
MM5KV kits**

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CONTENTS

	Section
Safety Precautions	1.0
General Operating Principles	2.0
RTF Components	3.0
Inspection Procedure	4.0
Visual Operation	5.0
Specification	6.0
Troubleshooting	7.0
Warranty	8.0
Service and Maintenance	9.0
Cleaning Instructions	10.0
Product Part Numbers	11.0
Contact Information	

INTRODUCTION

Thank you for choosing the *RTF Electrosurgical Instrument Test Station* for the inspection and detection of defects, pinholes, and cracks in the applied surface insulation coatings of your electrosurgical equipment.

McGan has designed this instrument with care, to provide ongoing insulation defect detection for a wide variety of protective coatings currently in use with various electrosurgical equipment. Under reasonable operating care, the unit will provide many years of trouble free operation.

McGan welcomes user inquiries and recommendations for this product.

USE: *RTF Electrosurgical Instrument Test Station* provides the user with the easiest way to test the integrity of the coatings on various types of electrosurgical instruments used in conjunction with either the McGan MicroMed PD-8K or MM5KV kits.

The RTF station reduces the amount of handling of the instrument *during* the test for detects such as pinholes and cracks in the protective coatings applied over conductive instrument's surfaces.

NOTE: The MicroMed PD-8K and MM5KV system detects only full (complete) breaks in the insulation; it will not detect any defects that do not penetrate to the conductive substrate (core) of the electrosurgical instrument.

When to use for the Testing of Electrosurgical Instruments:

McGan recommends the use of the MMPD-8K or the MM5KV System after the electrosurgical instrument has been fully cleaned according to the instructions from the manufacturer of the electrosurgical instrument or the hospital's standard procedure BUT before sterilization of the instrument.

This will eliminate any potential to cross-contaminate the surgical instrument.

1.0 SAFETY PRECAUTIONS



All hand-held high voltage test equipment should be operated by responsible, trained and authorized personnel. As an added precaution always use surgical gloves while assembling and operating the unit to avoid the possibility of receiving a “shock”.

CAUTION



THE PD-8K and MM5KV UNIT SHOULD NOT BE USED IN AN ELEVATED OXYGEN ENVIRONMENT. THE UNIT EMITS AN ELECTRICAL SPARK AS PART OF ITS OPERATION AND A FIRE MAY OCCUR IN HIGH LEVELS OF OXYGEN.

The PD-8K/MM5KV units can output up to 8,000 volts. Should the operator accidentally make contact with the test electrode, they may experience a mild shock or zap, and in order to avoid this possibility, the wearing of surgical gloves is recommended and stabilize the unit to a workbench under test using an insulated clamp.

DO NOT operate the unit if you are not in good health. People with a cardiac condition should not operate this unit.

DO NOT operate this unit if you have a pacemaker.

This unit should only be used for checking the porosity, or electrical breakdown, of dielectric or insulating materials.

DO NOT use this unit around other machinery. An electrical shock may cause the operator to fall and injure themselves.

DO NOT operate this unit around people that are not directly involved in the testing procedure.

DANGER

DO NOT use the test equipment in any combustible or flammable atmosphere i.e. flammable anesthetics, as a test voltage can cause an arc or spark to be generated and an explosion could result.

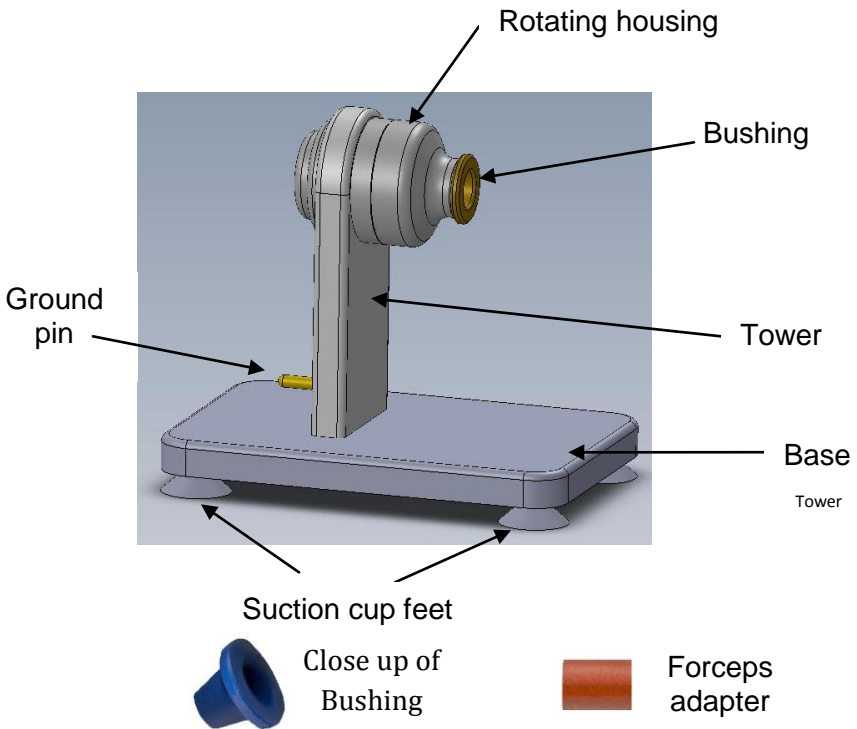
ELECTRICAL SHOCK HAZARD

DO NOT disassemble the RFT- Refer servicing to qualified factory service personnel.

2.0 GENERAL OPERATING PRINCIPLES

The RTF Electrosurgical Instrument Test Station is used in place of the LSE Ring Electrode (MMLSE-0029) to test round electrosurgical instruments, such as laparoscopic, or with the Brush Electrode (MMBRU-0007) to test different diameter instruments such as electrosurgical forceps.

3.0 RTF Components



4.0 INSPECTION PROCEDURES

By using the *RTF Electrosurgical Instrument Test Station* in conjunction with McGan's MicroMed **PD-8K** or **MM5KV**

Inspection test units the user will be able to locate pinholes, voids and cracks in high resistance coatings applied to the surface of low resistance materials.

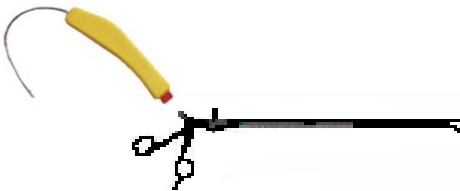
Applied coats on surgical leads and instruments should be identified as to type, thickness tested and visually inspected and accepted to ensure the applicable voltages can be set prior to high voltage porosity tests being carried out.

It is recommended that hospitals establish a testing program and document tests for future reference.

Operation

Standard Round Instrument

1. Set the MMPD-8K or MM5KV unit up according to the respective operating manual
2. Secure the RTF to a flat surface of the work station using the four rubber suction feet.
3. Connect the ground clamp on the Green wire to the Ground Pin of the RTF Station.
4. Attach the red connector located in the handle of the HV red wire to the metal pin located on the instrument to be tested..



5. Turn the Inspection unit on.
6. Select the proper voltage according to the Inspection unit's operational manual.
7. Insert the tip of the instrument under test into the center of the hole "Bushing" in the front of the test unit.
8. The Alarm should sound indicating that the bare metal end has made contact and indicating that the Inspection unit is operating

properly. A spark should occur but will be in the housing and not be visible

9. The unit should now be ready for use. Move the instrument under test slowly through the hole in the housing, approximately 4 seconds per 3 feet, until the entire length of the instrument has passed through the opening.

10. Any alarm or lights flashing on the Inspection unit will indicate that a fault has been located and the instrument under test should be taken out of service.

A fault is indicated by:

- A spark at the probe – this will not be seen as the spark is somewhat internal when using the RTF Station.
- A light flashes on the front panel of the base unit.
- An audible sound – the buzzer is mounted within the base unit.

Electrosurgical Forceps:

1. Set the MMPD-8K or MM5KV Inspection unit up according to the respective operating manual
2. Secure the RTF to a flat surface of the work station using the four suction cup rubber feet.
3. Connect the ground clamp on the Green wire to the Ground Pin of the RTF Station.
4. Attach the brush electrode to the HV red probe handle in the port on the end of the yellow handle.
5. Turn the Bushing to the left to remove it from the RTF Rotating housing.
6. Take the Forceps that will be tested and put the forceps adapter in the middle between the tines making sure that the bare tips are exposed just past the forceps adapter end see figure. Insert the adapter with the forceps into the Bushing,

removed in #5. Insert the Bushing into the RTF Rotating housing and turn to the right until the Bushing is tight.

Tines exposed
on the side of
Forceps adapter

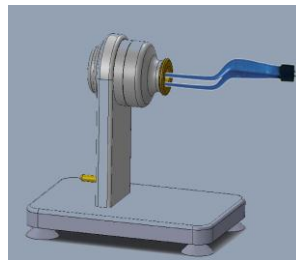


7. OPTION: It may be easier to NOT remove the bushing but insert the loaded forceps and Forceps adapter directly into the Bushing.
8. OPTION: If the tips of the instrument under test do not fit into the forceps adapter then 1) slide the bushing onto the instrument and push past the tips 2) place the forceps adapter between the tips of the tines 3) move the bushing over the tips and the forceps adapter and 4) insert the bushing into the Rotating Housing.



Step 1 and 2

Step 4



9. Turn the Inspection unit on.
10. Select the proper voltage according to the Inspection unit's operational manual.
11. **Lightly** pass the side of the brush over terminals extending from the cap portion of the forceps.
12. The Alarm should sound indicating that the bare metal end has made contact and indicating that the Inspection unit is operating properly. A spark will occur.
13. The unit should now be ready for use. Move the side of the brush **lightly** over one of the instrument's blades (tines)

both under and over the blade for the entire length of the instrument under test. This should be performed slowly at approximately 4 seconds per 3 feet. Take the Brush away from the instrument and using the front part of the electrode-housing rotate the housing and repeat the testing of the other blade.

A fault is indicated by:

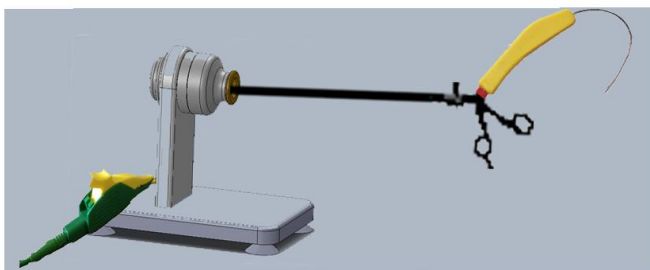
- A spark at the probe
- A light flashes on the front panel of the base unit.
- An audible sound – the buzzer is mounted within the base unit.

Operational Hints:

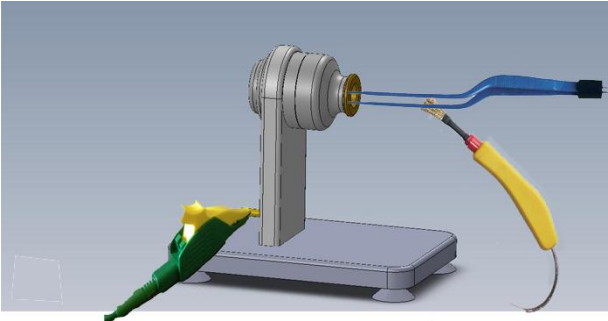
- Instruments must be kept in full contact with the electrode within the housing so that the flaws can be detected. .
- The unit should always be switched off prior to removing and testing a new instrument
- After repositioning the ground lead, the probe should always be 'flushed' on the substrate to prove a good contact has been made.
- Wet and contaminated coatings **should not** be tested until dry and clean.

5.0 Visual Operation

RTF Electrosurgical Instrument Test Station



Laparoscopic Set-up



Forceps Set-up

6.0 SPECIFICATIONS

Weight: 1.35 lbs (0.62kgs)

Dimensions (in):

Base 6.0 (L) x 4.0 (W) x 0.5 (H) inches

Tower 2.5 (L) x 2.0 (W) X 4.4 (H) inches

Overall 6.0 (L) x 4.0 (W) X 5.0¹ (H) inches

Components: Bushing adapter
Forceps adapter

1 includes the rubber feet

7.0 TROUBLESHOOTING

Symptom	Possible Cause	Solution
No Display	Dead or low charged battery	Recharge or replace battery
No Alarm on fault	Voltage too low	Make sure voltage is set to the correct kV level Increase voltage/sensitivity Maker sure all wires are connected properly. Make sure the instrument under test is properly installed.

8.0 WARRANTY

Subject to the warranty conditions below MicroMed PD-8K is warranted by the Manufacturer to be free from defects arising from faulty design, material, or workmanship for a period of 12 months from the date of original purchase by the user.

Probes and leads are warranted for 2 months. They are consumable items, and subject to wear and deterioration during use. The life of these parts can be extended by keeping them in a clean and dry condition. The probes and leads must be stored in suitable protective containers.

During use, avoid “scrubbing” the probe along the surface of the work-piece.

WARRANTY CONDITIONS

During the warranty period listed above McGan or it’s authorized service representative will make good any defects covered by this warranty.

McGan or its authorized service representative will decide if there are any defects in design, material or workmanship.

This warranty only applies provided the instrument has been used in accordance with the manufacturers operating handbook recommendations.

This warranty does not cover damage, malfunction or failure resulting from misuse, neglect, abuse or if the unit or its accessories are used for a purpose for which it was not designed and no repairs, alterations or modifications have been attempted other than by the manufacturer under an authorized service.

This warranty applies only to the original user/ buyer and is not transferable.

This warranty does not cover any service that is needed after an accident, alterations, misuse, fire or floods.

This warranty is the only one given by McGan and no one has the authority to change, or add to, the obligations and liabilities listed in it.

This warranty does not cover batteries, probe handles, brushes, ring (electrodes) or leads which are subject to wear.

During the warranty period McGan or its authorized service representative will bear the transportation cost for the return of instrument/s repaired under warranty back to the user's premises within the country of purchase. If it is found that the unit has failed for any reason stated above or the warranty period has expired then the user is obligated for all repair and transportation costs.

HOW TO MAKE A WARRANTY CLAIM

Defective goods must be returned to McGan or an authorized service representative at the Purchaser's expense. The goods must be accompanied by the Purchaser's written order describing the defect and authorizing McGan or its authorized service representative to invoice the Purchaser for any charges not covered by the warranty.

The purchaser's order must also include the model **of the instrument and address of the** Purchaser and date of purchase.

Upon receipt at the service point the instrument will be examined to determine the nature and cause of the defect.

If the defect is covered by the warranty, a repair will be initiated at McGan's or its authorized service representative expense. If the defect is not covered by the warranty, McGan or its authorized service representative will quote the Purchaser for a replacement unit or for the cost of the repair, and will not proceed until written acceptance of the quotation is received.

9.0 SERVICE AND MAINTENANCE.

CARE AND MAINTENANCE

NOTE: There are no serviceable parts in the RTF *Electrosurgical Instrument Test Station*. *Do Not dissembled*

This equipment is protected against hostile environments and is designed for prolonged use in the field without any special maintenance, other than routine cleaning. However, the equipment is not totally sealed and appropriate precautions should be taken.

There are no internal user controls.

The equipment should only be operated by qualified personnel.

Some organic materials may attack plastic parts and cause early degradation. Contact with such materials should be avoided.

DO NOT operate damaged equipment.

10.0 Instructions for cleaning the *RTF Electrosurgical Test Station*

Base Unit:

Dab a soft cloth in alcohol and wipe down base unit.

Caution:

DO NOT saturate the cloth

Thoroughly, DRY all areas before using the components

SERVICE REPAIRS AND MAINTENANCE

Repairs not covered by the warranty or carried out after the warranty period, will be charged at the current hourly or set service rate, plus the cost of materials.

Goods for repair must be sent at the Purchaser's expense, and be accompanied by the Purchaser's written order (purchase order) describing the defect and authorizing McGan to invoice the purchaser for labor, materials and return delivery cost.

No service or repair will be undertaken until a written order is received.

BEFORE YOU CALL FOR SERVICE

Read the section on "troubleshooting" in this handbook and check the symptom, cause and solution before you call for service.

Service Phone # 508-876-1070

McGan Technology

9 Liberty Hill Dr.

Blackstone, MA 01504

USA

11.0 MMPD-8K Part Numbers and Description of Components within the System.

Part Number	Description
MMRTF-0045	RTF Electrosurgical Instrument Test Station
MMFTA-0050	Forceps adapter
MMGWC-0005L	Ground wire (green) with Large alligator clip
MMRWP-0006	HV lead (red) with mini-handle
MMRFT-0055	Suction Cup feet

McGan Technology Offers:

- Strong technical support
- We provide strong technical support and a quick response to inquiries and orders.
- Market and product knowledge
- We understand technical specifications demanded by industry and recognize customer requirements are specific in relation to testing and measuring instruments.
- Warranties and after sales service



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