



Laboratory Equipment Manufacturer
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Operation Manual

HOM-100

KNIFE MILL FOR DRY AND FROZEN WET FOODS



PLEASE READ THIS MANUAL CAREFULLY BEFORE OPERATION

Hagavish st. Israel 58817 Tel: 972 3 5595252, Fax: 972 3 5594529 mrc@mrclab.com

MRC.4.23

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1.0 Notes on the Manual

- This manual covers all the contents of the HOM-100 directory.
- In order to operate safely, please read the relevant parts of the manual.
- This manual does not include repair information. If you need to repair, please contact the supplier or MRC directly.

2.0 Safety

2.1 General instructions

- Read and fully understand the safety instructions
- It is necessary for the operator to know the rules and regulations of the operation.
- Before operation new user must be familiar with safety and correct operation of the instrument.
- Improper handling may cause personal injury and damage to the instrument.
- Please ensure that unqualified personnel do not operate the equipment.

2.2 Repair

This manual does not include any repair information. For your safety, please contact MRC company's authorized agents or MRC technical service center for repair.

2.3 Safety instructions

Please use it normally

- MRC shall not be liable for any personal injury or damage to the equipment due to failure to comply with the safety instructions.
- No changes can be made to the instrument, and use the accessories and accessories approved by the MRC. Otherwise, any of our warranty commitments will no longer be valid.

Packaging

Please keep the packing materials during the warranty period. Otherwise, we shall not be able to guarantee your rights in case of packing complaint.

Transport

Please do not raise the equipment above the head, do not oscillate or throw, so as not to damage the electronic and mechanical parts of the instrument.

Temperature change

If HOM-100 is subjected to large temperature changes (such as in air transport), the formation of condensate should be prevented to avoid damage to electronic and mechanical components.

Packing list

Upon receipt of the goods, if you find any shortage or damage to the equipment, please inform the transport company or contact the MRC (within 24 hours). Delayed complaints may not be accepted.

Installation requirements

If the environment temperature is too high, too low or high humidity, it will be possible to cause damage to the electronic parts or mechanical parts of the instrument, and the performance will be unknown.

Connect the power supply

Before connecting the power supply, please pay attention to the value of the nameplate on the instrument so as not to damage the electronic parts or mechanical parts of the instrument.

Safety switch

When the equipment is running, please do not open the upper cover to avoid the failure of the safety switch, which may cause personal injury or equipment damage.

Check before starting

Before starting HOM-100, please confirm that the grinding container, knife and standard lid have been properly installed to avoid the damage of the equipment caused by the grinding kit.

The filling of the grinding container

Filling too much or too little sample can affect the grinding result. Too much sample will damage the grinding kit and the device.

Clean

Please do not clean the instrument with flowing water. Clean the instrument only with a damp cloth. No detergents or similar solvents are allowed.

Storage

The instrument should be kept in a dry and ventilated place after cleaning.

Please do not make any changes to the instrument and use only the fittings and accessories provided by MRC. Otherwise, any guarantee made by our company will be invalid.

3.0 Packing and transportation

3.1 Packing

The packing should be suitable for transportation and meet the packing requirements.

Note:

Please retain the original packing during the warranty period so that when the equipment is defective, and you need to have it shipped back intact to avoid any damage during transit.

3.2 Transportation

HOM-100 net weight is about 16kg. During transportation, please do not throw, knock or oscillate, so as not to damage the electronic and mechanical parts of the instrument.

3.3 Temperature change

If the temperature changes greatly (e.g., air transport), condensation water should be prevented to avoid damaging the electronic components.

3.4 Storage

Please ensure that the HOM-100 is kept dry during storage.

3.5 Supply list

- * HOM-100 main body: 1set
- * PC transparent plastic container: 1pc
- * Stainless steel knife: 1pc
- * Standard lid: 1pc
- * Scraper: 1pc
- * Power cord: 1pc
- * Fuse 2pcs (10A)
- * Manual: 1pc

Check whether the supply is complete, including individual additional orders.

Note:

Please inform MRC company within 24 hours if the shipment is not complete or damaged. Delayed complaints may not be accepted.

4.0 Technical specifications

HOM-100 is suitable for grinding of soft, medium hard, brittle and fibrous samples, especially for oily, water-containing, fatty samples.

Typical samples:

- Fresh/dried vegetables, fresh fruits/dried fruits (peeled), fresh meat/fish, cooked meat products, preserved fruit, seeds and high sugar content samples.
- HOM-100 can quickly and evenly grind samples in a very short time (10 seconds to 3 minutes), with good repeatability and uniformity.

4.1 Grinding containers

Container of stainless steel: 1000ml

Container of transparent plastic: 1000ml

4.2 Filling amount

The optimum sample filling amount is 1/3 ~ 2/3 of the volume of the grinding container.

4.3 Feed size

Maximum feed size: <40mm (depending on the nature of the sample)

4.4 Final size

Minimum final size: appr.300 μ m (depending on the nature of samples)

4.5 Speed

2000~10000rpm

4.6 Electrical parameters

Rated voltage :220 V, 50Hz

Rated power 1.1KW

Current: 4.7 A

4.7 Safety protection

The HOM-100 is equipped with a lid safety switch and an electromagnetic locking device.

Safety switch: when the lid is opened, the instrument cannot be started. The instrument can be started when the lid is closed;

Electromagnetic locking device: the lid cannot be opened when the instrument is activated.

The lid can only be opened when the instrument is stopped.

4.8 Instrument size

- Width: 260 mm
- Depth: 343 mm
- Height: 454 mm
- Net weight: 16kg

4.9 Floor space

500×500 mm

Please ensure that the instrument is at least 10cm away from the wall for ventilation

5.0 Installation

5.1 Installation requirements

HOM-100 should be placed on a stable and horizontal laboratory bench.

5.2 Ambient temperature

5°C-40°C

Note:

If the ambient temperature and humidity is too high or too low, the electronic components and mechanical components may be damaged. Work performance will not be guaranteed.

5.3 Air humidity

When the humidity is high, the electronic mechanical components may be damaged, and the performance of the instrument will be unknown.

5.4 Power connection

- The voltage and frequency of the power supply have been marked on the nameplate.
- Ensure that the voltage is in line with the actual conditions.
- Please use the supplied HOM-100 power cord.

5.5 Ground protection

PE grounding protection line is required for power connection.

Note:

Failure to comply with the required power supply will likely damage the electronics or mechanical parts, seriously affecting the performance of the machine.

6.0 Operation

6.1 Instrument units (Fig.6.1.1 ~ 6.1.5)

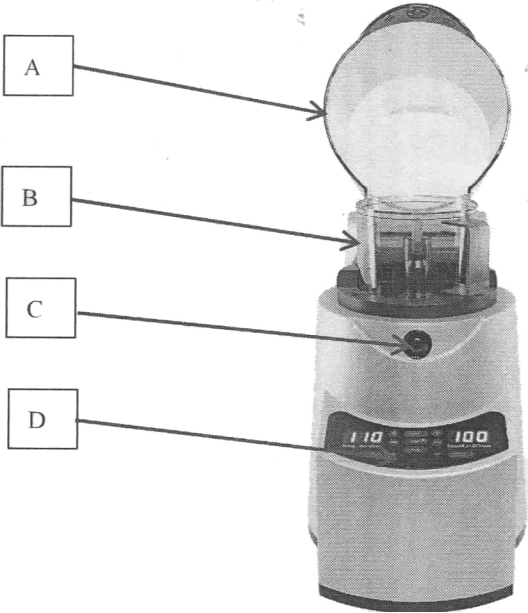


Fig. 6.1.1

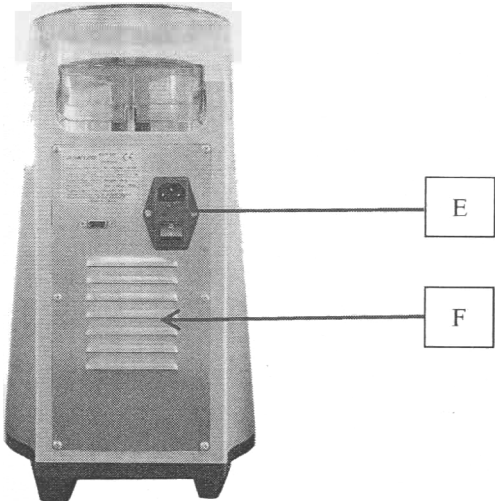


Fig. 6.1.2

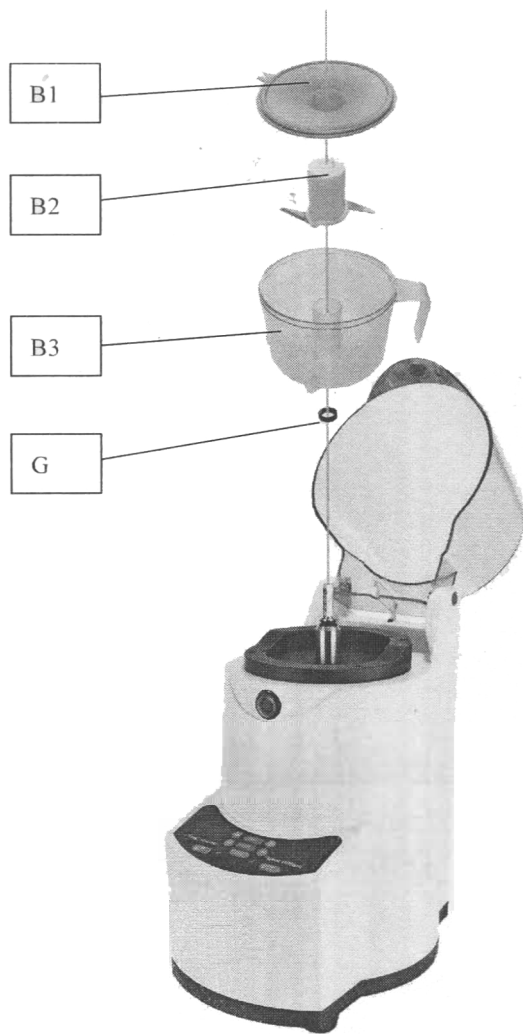


Fig. 6.1.3

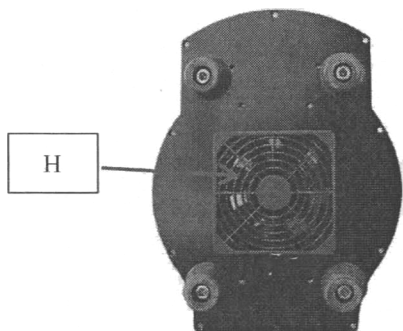


Fig.6.1.4

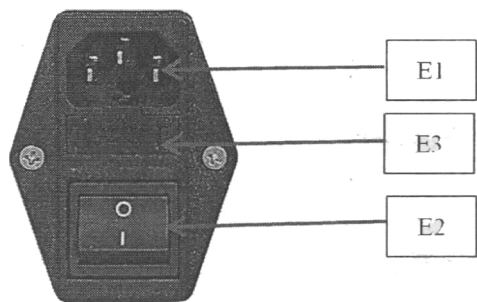


Fig. 6.1.5

No.	Name	Remarks
A	Lid of instrument	Close grinding chamber
B	Grinding kit	Including grinding container, standard container lid, knife
C	Electromagnet	Prevent the lid of the instrument from opening when the device is running.
D	Control panel	Set grinding parameters and control the operation of the instrument
E	Power supply socket (3 in 1)	Switch/fuse/socket
F	Ventilation opening	Exhaust air
B1	Lid for grinding containers	Standard lid
B2	Knife	Cutting the sample
B3	Grinding container	Holding the sample
G	Sealing ring	Prevent water from entering the motor shaft.
H	Fan	Ventilation and cooling
E1	Power supply socket	Connect power supply
E2	Switch	Switch the instrument on or off
E3	Fuse holder	2 fuses in it; Max current:10A

6.2 Power connection (Fig. 6.2)

Step 1: confirm that the supply voltage and power are in accordance with the HOM-100 nameplate.

Step 2: insert one end of the power cord plug into the power outlet E1 on the back of the machine.

Step 3: plug the other end of the power plug into the power socket.

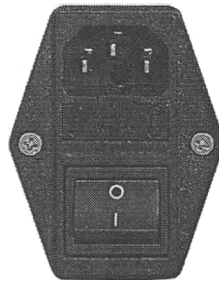


Fig.6.2

Note:

If the power supply data does not match the data on the nameplate, the electrical and mechanical components may be damaged.

6.3 Grinding operation

6.3.1 Install the grinding container (Fig. 6.3.1-1~6.3.1-3)

Step 1: Open the upper cover.

Step 2: Place the grinding container into the base of the grinding container.

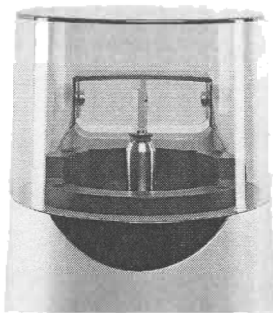


Fig.6.3.1.1

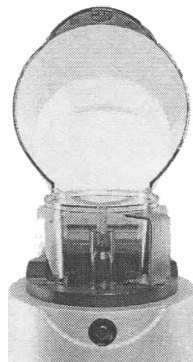


Fig.6.3.1.2

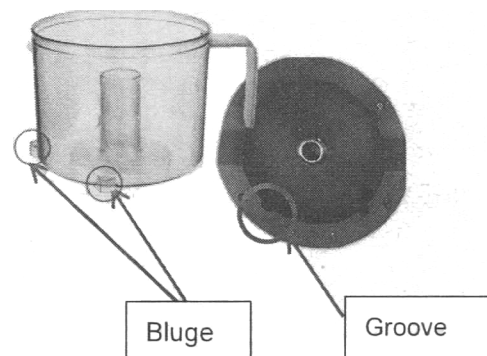


Fig. 6.3.1.3

Tip:

The bulge at the bottom of the grinding container should be aligned with the groove on the container base to ensure that the grinding container is positioned in the groove. The grinding container and lid of different materials are selected according to the sample material.

6.3.2 Grinding container material

PC transparent plastic grinding container: suitable for grinding soft, oily, water-bearing, fatty and fibrous samples.

Stainless steel grinding container: hard, brittle, tough samples, etc.

6.3.3 Put in the knife (Fig. 6.3.3)

Put the knife in place after the container is positioned

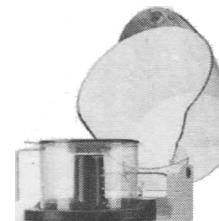


Fig.6.3.3

Tip:

After the knife is put into the motor shaft, it needs to be pushed down vertically to fix firmly (until it can't be pushed).

Note:

The blade is very sharp. When you put it in or out of the container, avoid touching the blade so as not to scratch you.

Make sure that the knife is properly installed to avoid the risk of popping up.

6.3.4 Add samples

Add sample to the grinding container. The sample size is 300~ 700ml.

6.3.5 Place grinding container lid

Standard plastic lid: universal lid.

Install the standard lid on the grinding container.

Tip:

There is a groove on the periphery of the standard lid, to ensure that the groove close to the protruding edge of the grinding container.

6.3.6 Close the upper cover (Fig. 6.3.6)

Close the upper cover.

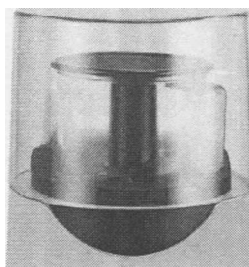
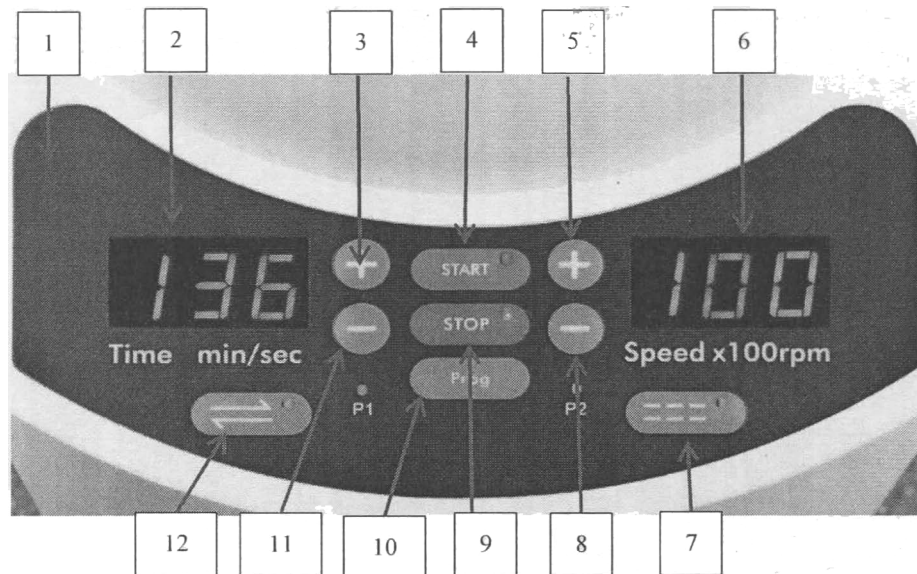




Fig.6.3.6

7.0 Control panel



No.	Name	Function
1	Control panel	Set grinding parameters and control the operation of the instrument
2	Time display	Indicates grinding time : 0: 01~9: 59(min/sec)
3	Time adding key	Press + key to increase grinding time
4	START key	<ul style="list-style-type: none"> Start the instrument: press once to start the instrument, the instrument will run at the set time, and the green indicator light is on. Manual mode: hold this key for more than 3 seconds, and the instrument enters manual mode. The manual mode is not limited by the set time. Press the key, the instrument runs, and the release of this key will stop the instrument running.
5	Speed setting key	Press + key to increase grinding speed

6	Speed display	20~100(×100rpm)
7	Interval mode key	Press  key, the light is on, the instrument enters into interval mode.
8	Speed setting key	Press – to decrease grinding speed
9	STOP key	Press the key instrument will stop and the red light is on
10	Program setting key	Press the Prog key once, the green light P1 is lit, then you can set time and speed parameters and save them in P1. Press the Prog key again, the green light P2 is lit, then you can set time and speed parameters and save them in the P2.
11	Time subtracting key	Press – to decrease grinding time
12	Reverse mode key	Press  key once, the light is on, instrument enters into reverse mode.

7.1 Set grinding time (Fig.7.1)

Press time setting key +/- to set grinding time(minute/second);

Time range:0:01~9: 59((minute/second)

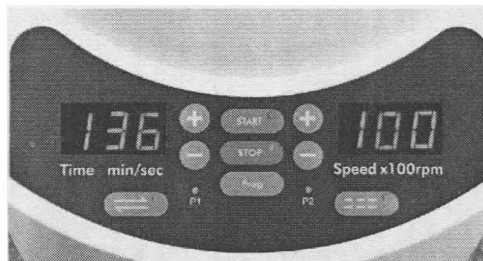


Fig.7.1

7.2 Set grinding speed

Press speed setting key +/- to set speed.

Speed setting range: 2000~10000rpm


Note:

To ensure that the instrument can operate safely for a long time, we recommend that the maximum operating speed of the instrument should not exceed 80% of the maximum design speed of the instrument.

7.3 Set the instrument in reverse operation

Press  key, the light is lit, and the instrument is in reserve mode.

7.4 Set the instrument in interval operation

Press  key, the light is lit, and the instrument is in interval mode.

7.5 Enters into manual mode

Press and hold this key for more than 3 seconds, the instrument enters manual mode. The manual mode is not limited by the set time. Press the key, the instrument runs, and the release of this key will stop the instrument running.

7.6 Enters into program mode

Press the Prog key once, the green light P1 is lit, then you can set time and speed parameters and save them in P1. Press the Prog key again, the green light P2 is lit, then you can set time and speed parameters and save them in the P2.

When pressing the Prog key and the P1 or P2 indicator light is on, press the START key to start the instrument, and the instrument will run according to the parameters set previously (i.e., run according to the set P1 or P2).

7.7 Start HOM-100

Step 1: place the grinding container in the grinding container base.

Step 2: cover the lid of grinding container.

Step 3: close the instrument lid.

Step 4: set the instrument parameters.

Step 5 press the START key to start the HOM-100.

Note:

Please note and observe the operation situation and the sound of the instrument. If the instrument is shaken or sounds abnormal, please stop running and check the grinding container, knife and upper cover immediately.

7.8 Stop HOM-100

Press STOP key to stop the instrument running.

7.9 Remove the grinding kit

Step 1: open the upper cover.

Step 2: remove the grinding kit as a whole.

Step 3: remove the container lid.

Step 4: take out the knife.

8.0 Instructions on grinding different samples

8.1 Sample with large water content

For large samples with large water content, such as vegetables, fruits, etc.

- Use PC plastic container
- Feed size: less than 30 mm
- Sample amount: less than 300 ml (> 300 ml water may overflow)

Tip:

The manual mode is used for cutting first, and then the continuous mode is used for further crushing when the sample volume is reduced.

8.2 Fragile/fibrous samples

Examples: cereals, seeds, compound feed, nuts and other samples:

- Use stainless steel grinding container
- Feed size: <15mm
- For the harder samples, the reverse mode can be used for coarse crushing (the speed is limited to 4000rpm), then the forward mode is adopted and the speed is transferred to medium-high speed.

8.3 Tough and fibrous samples

Examples: meat, sausage, fish, etc.

- Feed size: 10 ~ 20 mm (pretreatment)
- Sample size: 100~300ml, it is recommended to grind with manual mode first, and then use continuous mode for grinding after gaining experience.

8.4 Samples with high sugar content

If the samples with high sugar content such as preserved, candied fruit and medlar:

- Use transparent PC grinding container.
- Use dry ice.

Pound dry ice to pieces (about 100 g), cut the sample to 5 mm or so, put the sample into the dry ice in container, stir with a stick for about 5 min (make it fully frozen), then put the samples into grinding container together with the dry ice.

- Use standard lid.

Use manual mode to grind several times, then switch to continuous mode.

8.5 Recommended sample grinding parameters

Sample	Amount(g)	Feed size(mm)	Speed(rpm)	Time(s)	Remarks
Round cabbage	100	30~40	4000-8000	60	Manual mode first, and then continuous mode
Leek	80	20~30	5000	60	
Candied Date	50	5	5000	40	Use dry ice
Hawthorn roll	60	5	5000	30	Use dry ice
Casing for sausage	50	10~20	9000	20	
Pork	100	20	8000	30	
Carp	100	10~20	8000	30	
Soybean	120		8200	50	Reverse first and then forward
Peanut	100		8000	30	
Sesame	80		7000	30	
Mung bean	120		8000	45	Reverse first and then forward
Coffee bean	120	10~20	7000	30	Reverse first and then forward
Pepper	60	20~30	7000	20	
Corn	100		8000	30	Reverse first and then forward
Pepper corn	120		7000	45	

Cacao bean	100		6000	30	Reverse first and then forward
Potato	180	20~30	7000	30	
Tomato	200	20~30	7000	15	
Apple	150	30	6000	20	
Mushroom	180	20~30	8000	25	
Carrot	200	20	8000	20	
Cheese	150	20~30	6000	30	
Fresh figs	120	20~30	8500	20	

9.0 Instruction of safe operation

9.1 Placing of the grinding container

- The bulge at the bottom of the container must be in conformity with the groove on the container base, ensure the grinding container is positioned in the groove.
- HOM-100 is a high speed grinding device. The container, rotary knife and container lid must be securely mounted.
- Before starting the instrument, please make sure that the cover is closed so that the grinding cup will not pop up and cause damage to the instrument.
- Container filling amount is too high or too low, will weaken the grinding results and accelerate the abrasion of equipment parts.

9.2 Power failure during run time

During operation, if power supply failure causes the grinding operation interrupted, when turning on the power supply again, the parameters displayed on the screen is that of previously set.

Tip:

You need to open the instrument and inspect the grinding container and the standard lid to be installed in the correct position before restarting. If everything is normal, press the START key to start running again.

10.0 Routine

10.1 Cleaning instrument

Do not use cleaning agent and similar solvent to clean the instrument, use the damp cloth only.

10.2 Cleaning grinding kit

- Use the scraper to remove all the samples from container.
- Clean grinding container, lid of container and knife with clear water.
- If sterilization is needed, the parts can be put into disinfection container for high temperature treatment, and the temperature should not be higher than 120 degrees.

10.3 Maintenance

To ensure HOM-100's reliable work, the following maintenance should be carried out everyday after use:

Clean the grinding container, the lid of the container, the knife with water and wipe dry, then place them in the dry and ventilated place;

Wipe the motor shaft with dry cloth and keep it dry. If the instrument is not used for a long time, it is recommended to smear some anti-rust oil on the motor shaft.

10.4 Repair

This operation manual does not contain any repair information. If you need repair, please contact your supplier or contact the MRC directly.

10.5 Copyright

The MRC will be held liable only if the MRC has direct authority to copy or distribute the instruction.

10.6 Modification

Technical improvements will be made without prior notice.