

ENGEL

REFRIGERATOR

MODELS	INPUT
MD60F	DC12/24V
MD60F - C	
MD80F	
MD80F - C	

OWNER'S GUIDE

Model No. : _____

Serial No. : _____

SAWAFUJI ELECTRIC CO., LTD.
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Gunma 370-0344, JAPAN
Tel: +81 276 56 7139
www.sawafuji.co.jp/english
(Cat.No.5490 397 0000)
Printed in Thailand

This Owner's Guide contains important information regarding the operation and maintenance of your ENGEL dual compartment fridge-freezer.

In order to obtain the maximum enjoyment and usage of your fridge, we suggest you familiarize yourself with the contents of this booklet.

We would like to take this opportunity to thank you for choosing a ENGEL and assure you of our continuing interest in your traveling pleasure and satisfaction.

Yours sincerely,


SAWAFUJI ELECTRIC CO., LTD.


This appliance has been designed for refrigerating purposes and is operable on DC power supplies when installed as directed by the manual.

The model and serial number may be found on the outside of the fridge cabinet, close to the vented section.

Before installing your unit, record and retain the model serial number and service code for reference and warranty purposes.

INPUT VOLTAGE

MD60F/F-C: (12/24V )

MD80F/F-C: (12/24V )

AGENT IN EUROPE

<Austria>

HOECO Handels GmbH
Fischgasse 44
A-2483 Ebreichsdorf, Austria
Tel: +43 0 2254 72031 0
www.hoeco.at

<United Kingdom>

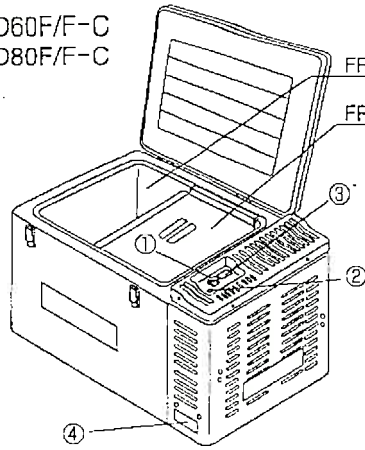
Bainbridge International Ltd
Unit 8, Flanders Industrial Park, Hedge End
Southampton, Hampshire SO30 2FZ, United Kingdom
Tel: +44 01489 776000
www.bainbridgeint.com

<France>

OUTBACK IMPORT
Z.A Mathias Sud
26320 St Marcel-les-
Valence, France
Tel: +33 0 4 75 85 10 48
www.outback-import.fr

DESIGNATION OF PARTS

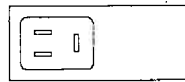
MD60F/F-C
MD80F/F-C



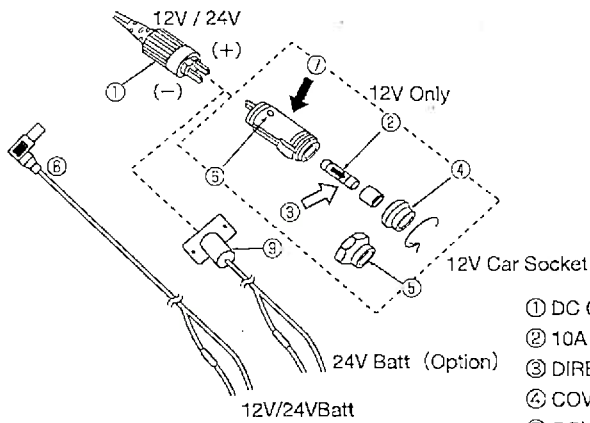
FRIDGE COMPARTMENT

FREEZER COMPARTMENT(F-C MODEL ONLY)

- ① FREEZER TEMP. CONTROL KNOB
- ② INDICATING LIGHT
- ③ FREEZER TEMP. INDICATOR
- ④ TERMINAL HOUSING



12/24V



- ① DC CORD
- ② 10A SPECIAL THERMAL FUSE
- ③ DIRECTION OF INSTALLATION
- ④ COVER(FOR JAPAN AND USA)
- ⑤ COVER (FOR EUROPE)
- ⑥ POWER INDICATION LIGHT
- ⑦ DC 12V ONLY
- ⑧ DIRECT DC 12V / 24V CONNECTION
- ⑨ DIRECT DC 24V CONNECTION (OPTION)

1 INSTALLATION

Your shockproof fridge is best installed on a level and solid surface.

Although it will operate satisfactorily for long periods on angles of up to 30°.

Be sure your fridge is not in direct sunlight, near a gas stove, heater, or other heat-generating appliances.

Adequate ventilation and suitable distance from each wall (at least 150 mm or more) will result in maximum cooling efficiency and minimum electric current consumption.

Avoid installing your fridge close to a kitchen sink or faucet.

Your fridge has been thoroughly cleaned before shipment from the factory. It is advisable, however, to clean the interior once more before use.

Clean the interior with a cloth moistened in warm water and wipe with a dry cloth.

Engel fridge is suitable for camping use.

=CAUTION=

- * Never use your ENGEL fridge to store gasoline or other flammable vapors and liquids as these sometimes cause explosion, and salt water.
- * Do not touch evaporator and any other metal parts inside cabinet with a wet hand or fingers as this may result in frostbite.
- * Do not remove or modify any of the electrical components, as this may cause electric shock, damage your fridge, as well as void the warranty.
- * Suitable for camping use.
- * The appliance shall not be exposed to rain.

2 ELECTRIC POWER SOURCES

2.1 Connection to 12/24V...

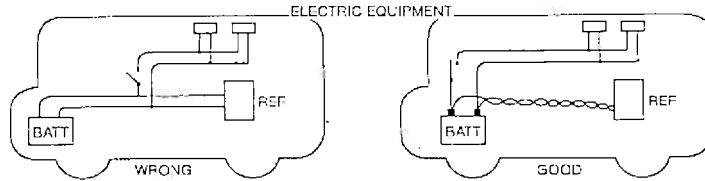
Ensure that the battery voltage corresponds with the voltage stated on the fridge label and a fuse is fitted in that line. If the voltage supplied is too high it will damage the power supply. If the voltage is too low the cooling efficiency will be reduced, the running time will increase.

- * Set the temperature control knob to "OFF". Insert the square plug of DC cord into the connector on the fridge and connect the other end to the battery connection supplied with unit. Disconnect all power cords from fridge when doing connection.

《DIRECT WIRING FOR PERMANENT VEHICLE INSTALLATION》

Engel fridges are protected against radio interference to the requirements of EN50081-1. However, to further avoid radio interference whilst on DC operation, please use separate positive and negative cables, twisted together in a spiral form, between your battery and the DC outlet socket.

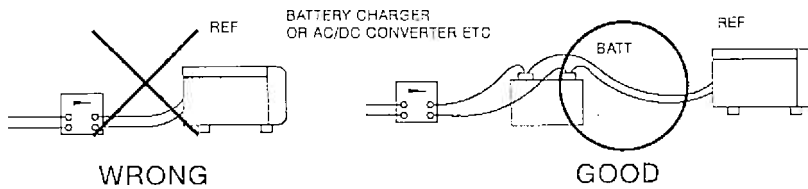
Any switches and lead wires for other electrical equipment should not be shared with the wiring between your fridge and battery (other equipment sometimes generates high voltage pulses which may cause defects in the fridge power supply).



WIRE GAUGE IS IMPORTANT TO AVOID "VOLTAGE DROP"

Connect your fridge to battery by use of the following wire :

Distance Between Refrigerator And Battery	Wire gauge	
	DC12Volt series	DC24Volt series
Less than 6m(19ft.)	SWG#16(AWG#14)/2.1mm ²	AWG#16/1.25mm ²
From 6m(19ft.)over to 10m(32ft.)	SWG#14(AWG#12)/3.3mm ²	AWG#14/2.1mm ²
More than 10m(32ft.) (Not recommended,too long)	AWG#10/5.3mm ²	AWG#12/3.3mm ²



=IMPORTANT=

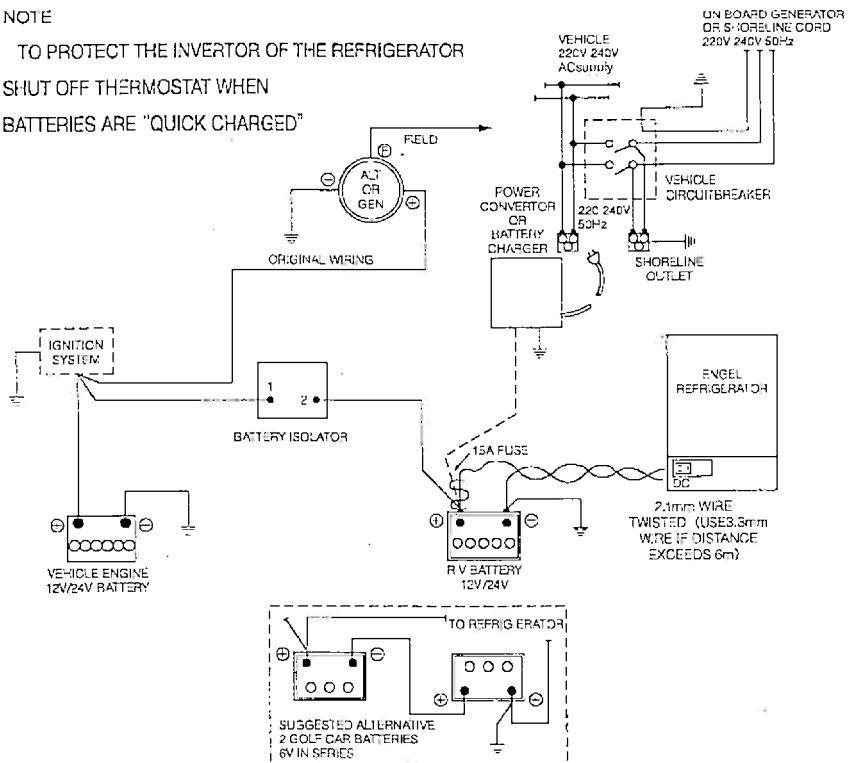
- * Green power light indicates thermostat operation. Compressor activity is automatically controlled to meet your selected Freezer temperature requirements whilst unit is switched on. (Power light failure indicates a defective power source or reversed polarity in the DC connection).
- NOTE : In case of green light on and compressor not operating. Check voltage at battery with fridge switched on to ensure sufficient voltage.
- * When not using the fridge, check the fuse in DC cord.

2.2 FOR YOUR REFERENCE

The Wiring Diagram shown below is recommended for dual battery hookup.

NOTE

TO PROTECT THE INVERTER OF THE REFRIGERATOR
SHUT OFF THERMOSTAT WHEN
BATTERIES ARE "QUICK CHARGED"



INSTALL A FUSE IN WIRING CIRCUIT

To avoid damage to the fridge in the event of reverse polarity or short circuit, install 15A fuse (DC 12 VOLT), 10A fuse (DC 24 VOLT) in the wiring circuit, near the battery.

* DC OPERATION is safe to use from a vehicle battery being charged by DC output of your generator set (Do not use without a battery).

- Avoid sudden power fluctuations by switching of your ENGEL fridge before;
 - Starting or stopping your generator
 - Switching other appliances off / on

2.3 Acoustic Noise Information 3. GSGV

The sound pressure level is 70dB (A) or less according to ISO 7779.

3 SAFETY DEVICES

POLARITY GUARD FOR DC BATTERY OPERATION

In order to protect the power supply from damage caused by reversed polarity the fridge is fitted with an automatic polarity guard. Should incorrect polarity be applied, the green power lamp will not light and the fridge will not operate. Following the connection of polarity care should be taken check the fuses in DC cord. Following the correction of the current supply, the green power lamp will light up and normal operation will be resumed. However, if the green power lamp does not light, this indicates a possible power supply fault, and users are advised to contact their ENGEL dealer for service,

4 BATTERY MAINTENANCE AND CAUTIONS

1. Should the DC voltage at the fridge input terminals fall below 10.7 volts, the cooling efficiency will immediately be reduced: Please pay attention to the maintenance of your battery to ensure a good stage of charge.
2. Quick charges supply the battery with excess voltage in performing their intended function. Should the fridge remain switch-on whilst a quick charger is connected to the battery, the fridge can suffer damage.
3. Never use a battery, transformer / rectifier, or non approved AC / DC converter to supply your Engel fridge. Such equipment can, under certain circumstances, deliver current at a voltage which may damage the power supply. In order to use these devices always ensure that a battery is connected in parallel between the charging equipment and the fridge.

5 TEMPERATURE INDICATOR

This digital temperature reading is not an accurate indication of freezer air temperature and should be used as a reference only.

DISPLAY	EXPLANATION
---. -- °C	OPEN the Wiring (Replace Indicator)
---. -- °C	-30degree C MAX. or 70 degree C MIN

6 DEFROSTING

Due to the humidity of the air within the cabinet storage space, frost will form on the surface of the evaporator when the unit has been working for some time. A layer of frost in excess of about 6 mm (1/4in), has an adverse effect upon cooling efficiency, therefore the evaporator must be defrosted at regular intervals. For this purpose, set the power switch to "O" (OFF). After defrosting the cabinet, interior must be cleaned and dried before the fridge is switched on again.

7 CLEANING

ALWAYS DISCONNECT POWER SOURCE BEFORE CLEANING. Remove all water resulting from defrosting, if left this will cause an unpleasant odour and will contaminate the fridge contents. Wipe the cabinet interior clean with a damp cloth wrung out in warm water containing a mild, non-abrasive household detergent. Dry thoroughly with a soft, dry cloth. Never use brushes, scrapers, soap powders, petrol, bleach, benzene or thinners. These will damage the cabinet lining. Door or lid linings must not be allowed to become too wet, water may be absorbed by the insulation material, and insulating efficiency will be adversely affected until the insulation has dried out. Wash all removable fittings in warm soapy water, then rinse and dry with a soft clean cloth.

8 STORAGE

It is recommended by the manufacturer that your fridge is operated at regular intervals if being stored for periods of time.

A suggestion is to utilise your Engel as a 2nd freezer / fridge or Bar fridge at home during these periods.