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# REFRIGERATOR BFC 135/157/185



压缩机冰箱  
安装和使用说明书 **CN**

Compressor Refrigerator  
Installation and Operating Instructions **EN**







非常感谢您选购**阿雷纳**的制冷设备，在安装或使用冰箱之前，请您仔细阅读此说明书。请将说明书保存在所有用户都可以找到的地方，以便随时查阅使用。如果该冰箱转让或者出售，请确保此说明书也交付给新用户，以便告知他们安装方法、使用和安全要求。

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# 1.0 安全符号说明

-  **危险!** 表示潜在的危险情况，会导致死亡或重伤
-  **警告!** 表示潜在的危险情况，会导致轻伤或重度损伤
-  **注意!** 表示潜在的危险情况，会导致财产损失
-  **提示** 产品操作的补充信息

## 2.0 安全说明

以下情况造成的损坏，**阿雷纳**不承担任何责任：

- 错误装配或连接。
- 机械影响和过电压造成产品损坏。
- 未取得制造商明确许可擅自改变产品。
- 用于此说明书规定之外的用途。

### 2.1 一般性安全说明

#### **注意!**

**在任何情况下都不要打开制冷系统。我们强烈要求您请专业的维修人员进行维修操作。**

- 仅在此说明书中描述的用途下使用该冰箱。
- 该冰箱在使用之前必须按照说明书的指示进行正确安装。
- 在电器连接线缆破损或者磨损时，必须由专业人员马上维修更换。一定不能使用有裂纹、磨损的线缆、插头或者连接端点，以防安全隐患。
- 在清洗或者维修时必须将机器断电。
- 不能使用改制的插头或者自行延长的线缆。

- 检查铭牌上的电压是否与电源的电压一致。
- 冰箱不适于贮存腐蚀性或者含溶剂的物质。
- 冰箱用在房车或者游船上，如果长期不用，请关闭总电源开关，防止电瓶亏电。

### **警告!**

- 不恰当维修可导致更严重的损坏。
- 如冰箱有明显的损坏，请勿操作该冰箱。
- 对于 12 岁及以上儿童以及生理、感官、精神能力受限或者缺乏知识和经验的人，在对其进行监督或已告知如何安全使用冰箱以及可能存在的危险的前提下，他们可以使用该冰箱。
- 在没有监督的情况下，不得由儿童进行操作、清洗和维护。
- 小心挤伤！请勿将手指放入铰链中。
- 食品只能贮存在其原有包装或合适的容器中。

## 2.2 操作安全说明

### **危险!**

- 不要徒手触摸裸露的电线。

### **注意!**

- 启动冰箱前，确保电源线和插头的干燥性。
- 不得将冰箱安装在靠近明火或其它热源（加热器、阳光直射、煤气炉等）的地方。
- **过热危险!**  
请始终保持冰箱周围足够的通风，以便消散冰箱工作期间所产生的热量。
- 冰箱顶部通风格栅不能被任何物品堵塞、遮盖。
- 防止冰箱和电线受热和受潮。
- 确保食物不会触及制冷区的任何内壁。

## 3.0 预期用途

- 该冰箱适用于安装在房车和船上，也可用于家用。
- 该冰箱适用于安装在固定的壁橱内，一旦安装好，只有冰箱的前面是可接触到的。
- 该冰箱只适用于冷藏、冷冻和储存食物。该冰箱不适用于药品的储存。

### 警告!

- 请检查该冰箱的制冷能力是否适合存放您想要储存的食品。

## 4.0 技术说明

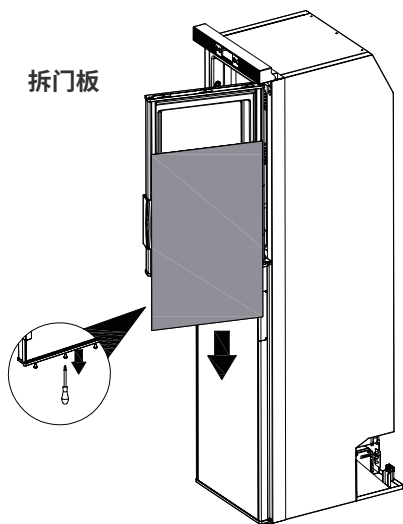
- 该冰箱上面为冷冻室，下面为冷藏室。
- 冰箱内使用的所有材料均符合食品级；制冷剂回路免维护。
- 冰箱控制面板调节的是冷藏室内的温度。

## 5.0 装饰面板的安装

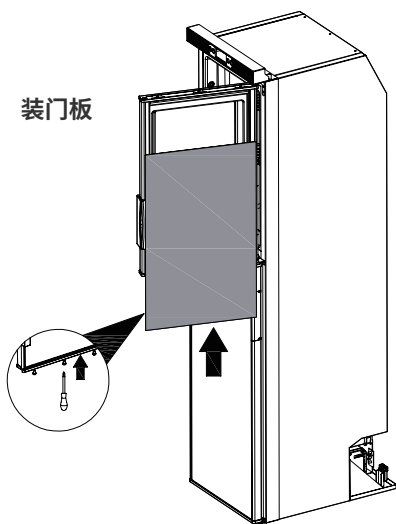
- 在安装冰箱前，应先在冰箱门上安装装饰面板。
- 装饰面板的厚度必须小于或等于 2.5mm。

01

拆门板



装门板



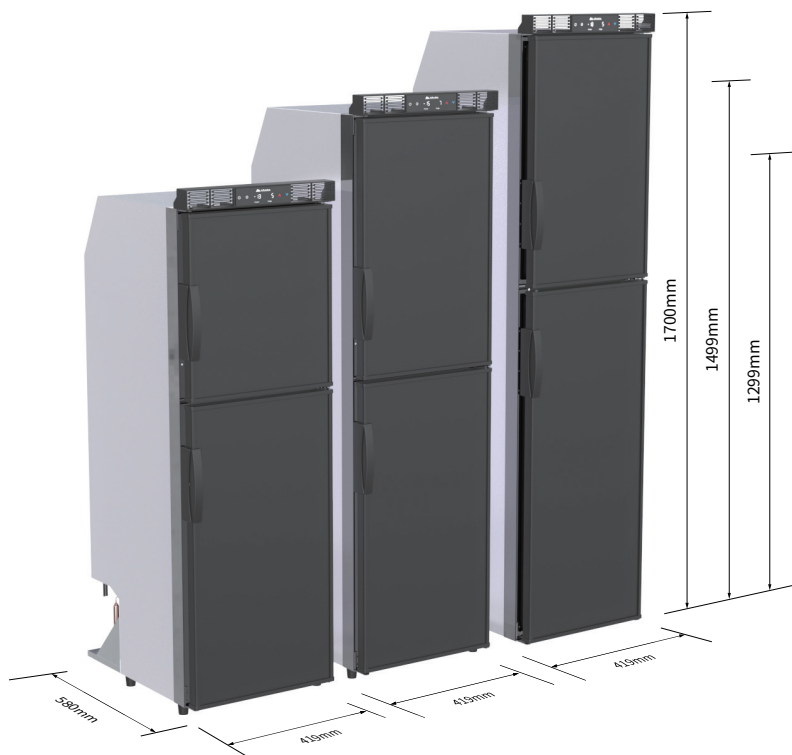
## 6.0 冰箱的安装和连接

请注意以下安装说明：

### 注意!

- 在最大倾斜角为 30°的情况下，冰箱也能正常工作，安装固定时请考虑该因素。如有任何安装问题，请与您的经销商联系。
- 安装时要保证冰箱的散热情况。

02



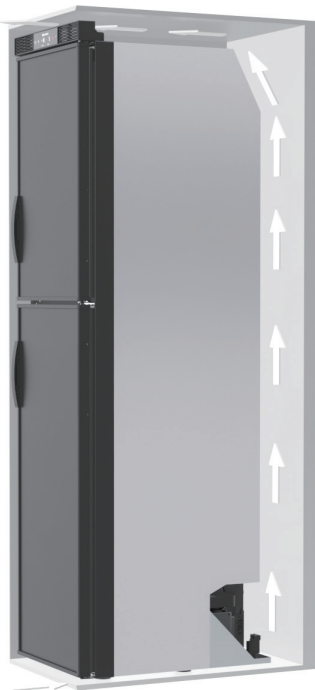
## 6.1 冰箱的安装

安装前，请见如下说明：

### 危险!

- 务必保证地面坚固和平整，并且能够支撑冰箱及存储物的重量。
- 冰箱必须安装固定在橱柜内，以便在车辆行驶时保持安全。
- 冰箱的左右两侧不需要间隙，冰箱后侧有限位橡胶碰，推入到底即可，不需要额外预留空隙。

03



内散热循环安装方式



外散热循环安装方式



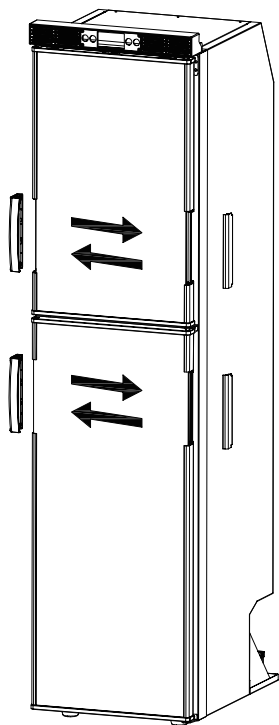
## 6.2 左右开门更换

如需更改开门方向，请按照如下步骤操作：

- 换门锁扣
- 拆冷冻门
- 拆冷藏门
- 换中门铰链
- 换门锁片
- 装冷冻门
- 装冷藏门

04

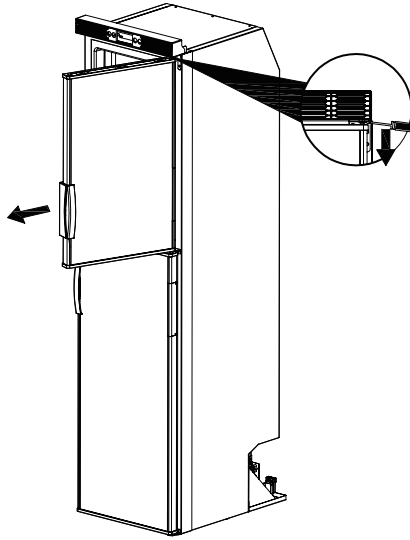
换门锁扣



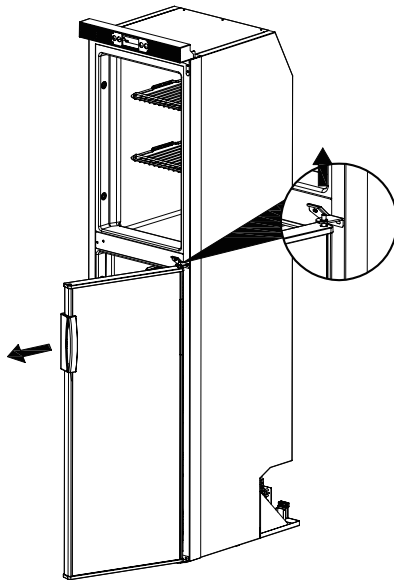
05

CN

拆冷冻门

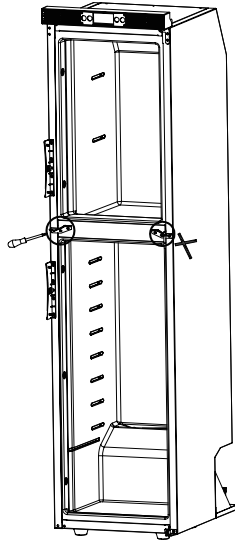


拆冷藏门

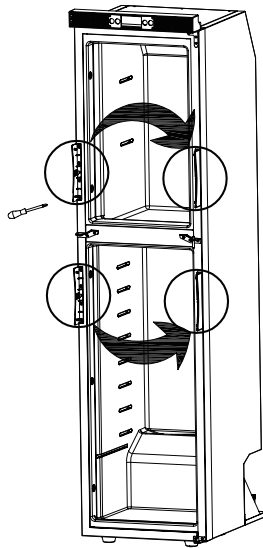


06

换中门铰链



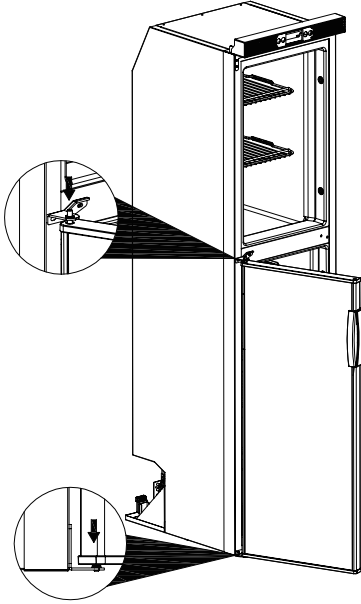
换门锁片



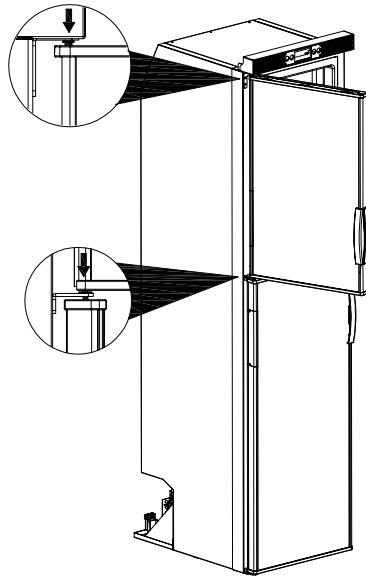
07

CN

装冷冻门



装冷藏门



## 6.3 连接电源

### 注意!

- 请确保接入冰箱的电源极的正确性。
- 初次启动冰箱前，先检查冰箱的工作电压是否与电池电压相匹配（见铭牌）。
- 线路须有最大 15 A（12 V 时）或 7.5 A（24 V 时）的保险丝保护。
- 电源线棕色线连接电池的正极，蓝色线连接电池的负极。

冰箱可工作于 12V 或 24V 直流电源，连接方式请见铭牌。

### 注意!

- 为避免压降和性能损失，请尽量使用较短的电线并避免交叉，因此，要避免多余的开关、插头。

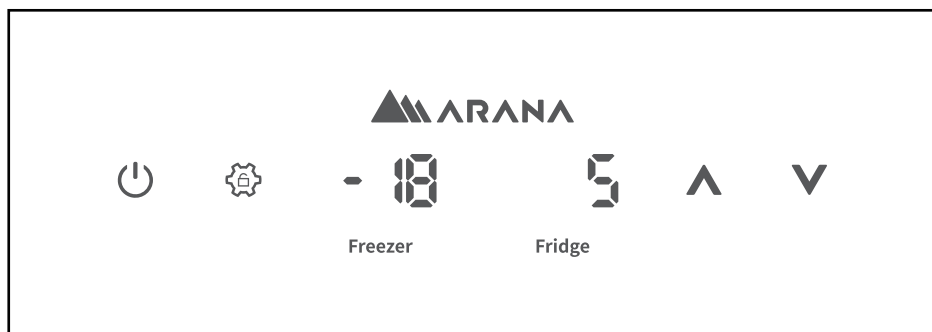
建议线束长度不能超过 2m，线束直径不能小于 2mm<sup>2</sup>。如果线束长度超过 2m，对应的线束直径请见下表：

线束直径	最大长度 /12V	最大长度 /24V
2.5mm <sup>2</sup>	2.5m	5m
4mm <sup>2</sup>	4m	8m
6mm <sup>2</sup>	6m	12m
10mm <sup>2</sup>	10m	20m

当电压不足时（参见下表），冰箱将自动断开，以保护电池。

额定电压	12V	24V
开机电压	11.7V	24.2V
关机电压	10.4V	22.8V

## 7.0 冰箱的使用



电源开关



安全锁 / 设置键



升高温度



降低温度


### 注意!

- 首次启动该冰箱前，请用湿布将冰箱内部和外部都清理干净（请参阅“清洁和保养”章节，第 18 页）

## 7.1 节能

- 将该冰箱放置在通风良好的地方，避免阳光直射。
- 热的食物冷却之后再放入冰箱内。
- 除非有必要，不要频繁打开冰箱。
- 除非有必要，不要长时间开着冰箱门。
- 形成冰层时，要定期除霜。
- 避免不必要的低温设置。
- 定期清理冷凝器上的灰尘。

## 7.2 冰箱开机

通过触摸开关按键  3 秒开机。

- 冰箱开启，电源指示灯恒亮。
- 冰箱开启，所有工作指示灯均亮起，如果不进行其他操作，5 分钟后，工作指示灯显示会变暗。
- 开机后，压缩机启动有一定的延时，请您耐心等待。

## 7.3 安全锁的使用

为防止触摸按键的误操作，需要长按安全锁  3 秒进行解锁，才能进行温度调节和关机操作。



安全锁同时也是冷冻室与冷藏室温度调节的选择设定键，长按解锁之后：

- 一次触碰，冷冻室温度数字闪烁，可以设定冷冻室温度；
- 两次触碰，冷藏室温度数字闪烁，可以设定冷藏室温度；
- 三次触碰，温度设置完成，退出温度设定模式。



## 7.4 温度设置

冷冻室和冷藏室的温度，可以单独设定和控制。

冷冻室温度设置：

- 触摸安全锁 3 秒解锁，触摸安全锁一次，冷冻室温度数字开始闪烁，通过   上下调节设定温度，温度设定完成之后，触碰安全锁两次退出温度设定；
- 冷冻室温度调节范围：-18° C ~ -5° C。

冷藏室温度设置：

- 触摸安全锁 3 秒解锁，触摸安全锁两次，冷藏室温度数字开始闪烁，通过   上下调节设定温度，温度设定完成之后，触碰安全锁一次退出温度设定；
- 冷藏室温度调节范围：0° C ~ 10° C。



### 提示

**制冷性能会受到以下因素的影响：**

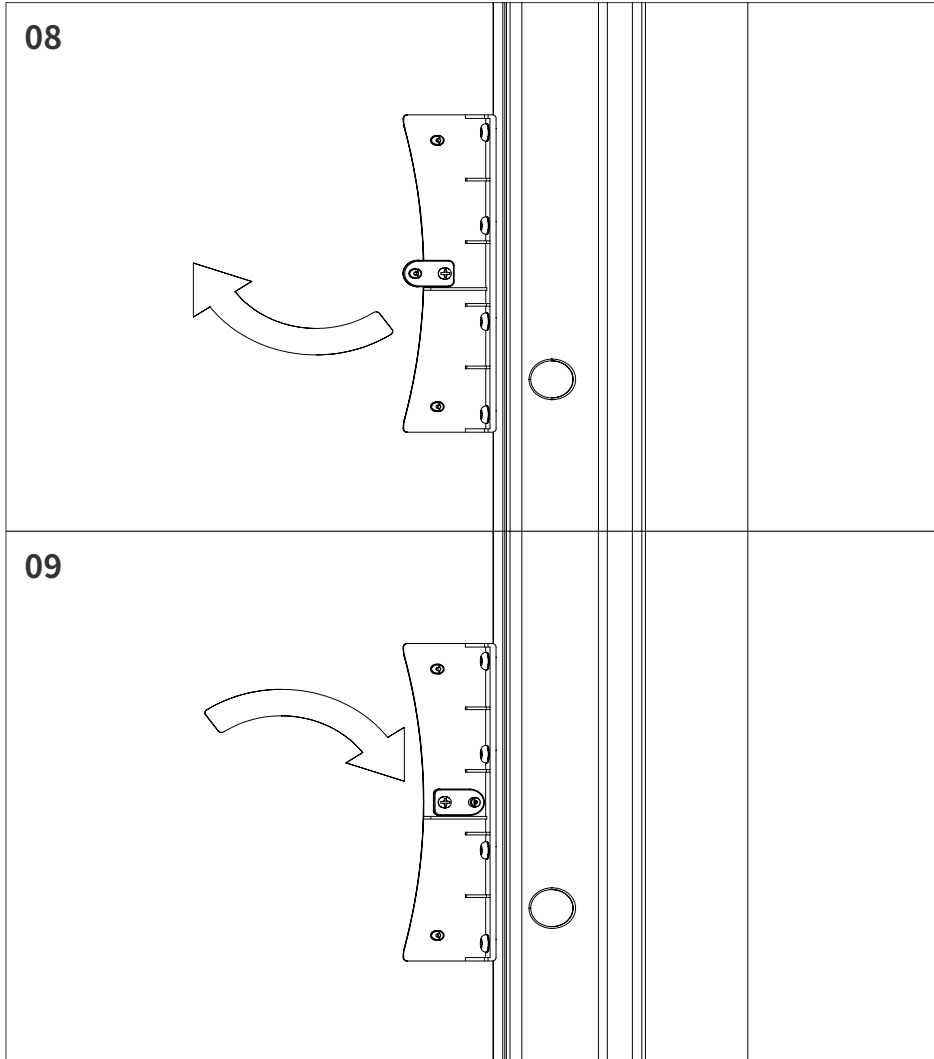
- 环境温度
- 保存的食物数量
- 门打开的频率
- 电池保护电压

## 7.5 关机和存放

如果近期不使用该冰箱，请：

- 触摸安全锁  3 秒解锁，触摸开关按键  3 秒关机。
- 断开电源总开关。
- 清洗冰箱（参见“清洁和保养”章节）。
- 关上冰箱门，把门体固定在透气锁上，操作步骤如下：
  - a. 首先将把手内侧的透气锁挡板向外打开，如下图所示；
  - b. 然后将冷冻室和冷藏室把手轻轻推入透气锁挡板卡扣上；
  - c. 冷冻室和冷藏室们留有一定的缝隙，防止冰箱内产生霉变气味。





**i 提示!**

- 当冰箱闲置时，必须保证箱体内部干燥以防止细菌滋生，尽可能保持冰箱门处于打开状态。
- 重新使用冰箱时，请把透气锁挡板转回把手内侧，如图09所示，冰箱门即可正常关闭。

## 8.0 清洁和保养

### 危险!

- 为避免电击，请在清洗冰箱前切断电源。忽视本警告可能导致人身伤害。

### 注意!

- 不要使用研磨性质的清洁剂或硬物来清洁冰箱以免损坏冰箱。
- 不要使用硬质或锐利的工具清除冰箱上的冰层或是冻结后的物体。
- 不要使用任何工具试图加速冰层融解。
- 取出箱体内部存放的东西。
- 用湿布擦洗箱体内外部。
- 清洗后，用干布擦干冰箱。

## 9.0 技术参数

BFC 135		
冰箱总容积	135L	
冷冻室容积	51L	
额定功率	80W	
额定电流	7A/12V	3.5A/24V
最低的启动电压	10.9V/12V	22.7V/24V
最低的工作电压	10.1V/12V	22.3V/24V
32 度环温实验室综合功耗	0.55KW/24H	
冷藏温度范围	0° C 至 10° C	
冷冻温度范围	-5° C 至 -18° C	
气候类型	T	
尺寸	419×580×1299mm	
最大的工作倾斜角度	30°	
重量	净重: 36Kg 毛重: 42Kg	
显示屏的变暗时间	不操作 5 分钟	
解锁键长按的时间	3 秒	
电源键的按压时间	3 秒	

### **i** 提示

- 我们将不断改进我们的产品，并保留修改某些规格的权利，恕不另行通知，请以产品铭牌为主。

## BFC 157

冰箱总容积	157L	
冷冻室容积	73L	
额定功率	80W	
额定电流	7A/12V	3.5A/24V
最低的启动电压	10.9V/12V	22.7V/24V
最低的工作电压	10.1V/12V	22.3V/24V
32 度环温实验室综合功耗	0.60KW/24H	
冷藏温度范围	0° C 至 10° C	
冷冻温度范围	-5° C 至 -18° C	
气候类型	T	
尺寸	419×580×1499mm	
最大的工作倾斜角度	30°	
重量	净重：40Kg 毛重：47Kg	
显示屏的变暗时间	不操作 5 分钟	
解锁键长按的时间	3 秒	
电源键的按压时间	3 秒	

### **i** 提示

- 我们将不断改进我们的产品，并保留修改某些规格的权利，恕不另行通知，请以产品铭牌为主。

BFC 185		
冰箱总容积	185L	
冷冻室容积	73L	
额定功率	80W	
额定电流	6.5A/12V	3.25A/24V
最低的启动电压	10.9V/12V	22.7V/24V
最低的工作电压	10V/12V	21.3V/24V
32 度环温实验室综合功耗	0.65KW/24H	
冷藏温度范围	0° C 至 10° C	
冷冻温度范围	-5° C 至 -18° C	
气候类型	T	
尺寸	419×580×1700mm	
最大的工作倾斜角度	30°	
重量	净重：45Kg 毛重：53Kg	
显示屏的变暗时间	不操作 5 分钟	
解锁键长按的时间	3 秒	
电源键的按压时间	3 秒	

## **i** 提示

- 我们将不断改进我们的产品，并保留修改某些规格的权利，恕不另行通知，请以产品铭牌为主。

# 10.0 故障问题

## 10.1 故障报警

代码	错误类型
Er1	电池保护 (输入电压低于或高于设定的值)
Er2	风扇过电流 (风扇负载超过 1A 电流)
Er3	压缩机马达启动错误代码 (马达阻塞或制冷系统中压差太高 >5bar)
Er4	压缩机马达转速错误代码 (制冷系统超载, 马达不能维持 1850 转 / 分钟的最低转速)
Er5	压缩机控制器热保护 (制冷系统过载或环境温度太高, 导致控制器过热)
Er6	急冻感温线故障 (感温器损坏或者没插好)
Er7	冷藏感温线故障 (感温器损坏或者没插好)
Er8	两条感温线都有故障或都没插好

## 10.2 故障排除

(1) 压缩机不工作 (连接电池)

问 题	原因分析	采取措施
冰箱不工作, LED 灯不亮 $U_{\text{Term}} = 0\text{V}$	电池与电器件之间的连接中断	重新连接
	主开关故障 (如果已安装)	更换主开关
	额外增加的电源线保险丝烧断了 (如果已安装)	更换电源线保险丝
$U_{\text{Term}} \leq U_{\text{ON}}$	内部保险丝烧断了	更换内部保险丝
	电池电压过低	给电池充电
冰箱不制冷 (通电, 电源灯亮着)	组件故障	只能由授权的维修中心进行维修

问 题	原因分析	采取措施
冰箱不制冷，通电，LED 灯闪烁	电线松动 接触不良（腐化）	重新连接
开始尝试 $U_{\text{Term}} \leq U_{\text{OFF}}$	电池电量过低	更换电池
	电线横截面过小或者电线过长	更换电线
	由于内部故障导致冰箱断电	只能由授权的维修中心 进行维修
开始尝试 $U_{\text{Term}} \geq U_{\text{ON}}$	环境温度过高	--
	通风散热不足	清理现有通风设施或者 安装更有效的通风设施
	冷凝器有脏污	清理冷凝器
	风扇故障	更换风扇
压缩机内电路针脚 断开	压缩机不良	只能由授权的维修中心 进行维修

$U_{\text{Term}}$ : 电器件正负极之间的电压。

$U_{\text{ON}}$ : 电器件接通电压。

$U_{\text{OFF}}$ : 电器件中断电压。

## (2) 最高温度设置模式下冰箱内温度过低

问 题	原因分析	采取措施
压缩机一直处于工作状态	传感器控制故障	只能由授权的维修中心 进行维修
压缩机长时间工作	冷冻室内存放的食物过多	等到食物完全冷冻

## (3) 制冷效果不佳，内部温度升高

问 题	原因分析	采取措施
压缩机长时间工作 / 一直工作	蒸发器结冰	蒸发器解冻
	制冷区域隔热不足（湿度）	加强冰箱门的密封
	环境温度过高	--
	通风散热不足	将冰箱移到通风良好的地方
	冷凝器有脏污	清理冷凝器
	风扇故障	更换风扇
压缩机间歇工作	电池电量耗尽	给电池充电

## (4) 冰箱内漏水

问 题	原因分析	采取措施
冰箱内部漏水	冰箱排水系统堵塞	清理排水系统
	食物阻碍，造成水无法流入排水管内	确保在放置食物时不要触碰到后侧箱体壁

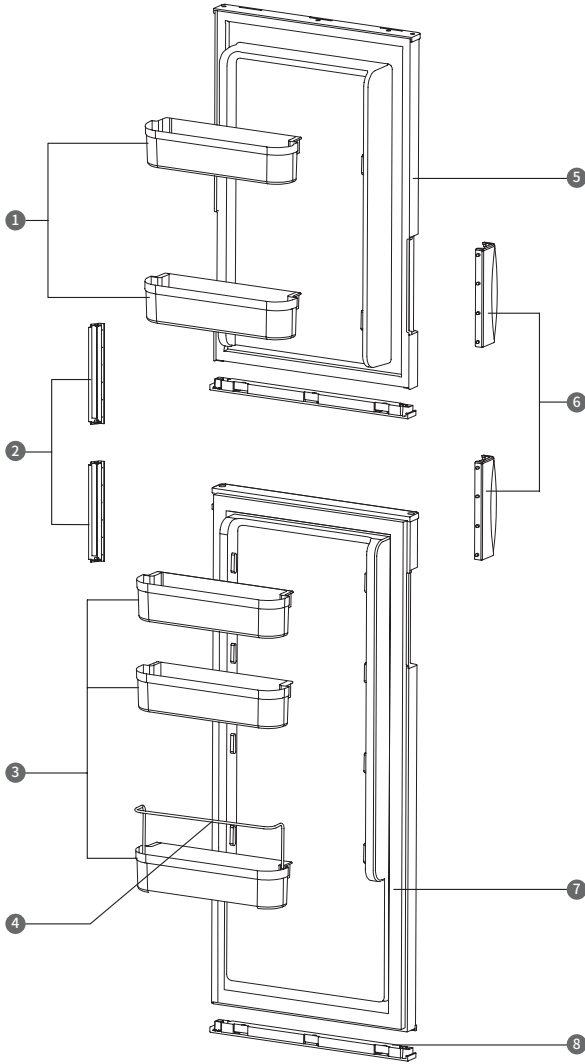
## (5) 压缩机异常噪音

问 题	原因分析	采取措施
很大的嗡嗡声	制冷系统的某个零件不能自由移动（靠近墙壁）	将该零件小心移开
	杂物卡在制冷系统和箱壁之间	清除杂物
	风扇噪音	--

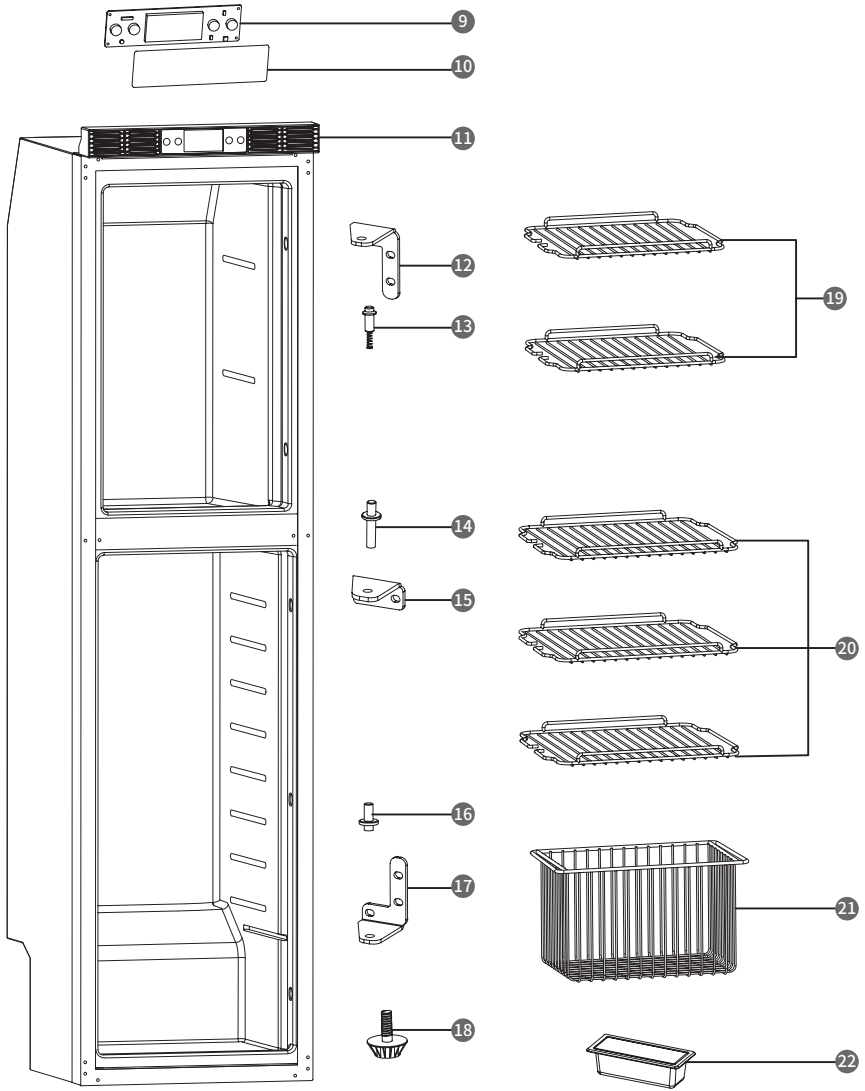


# 11.0 零部件明细表

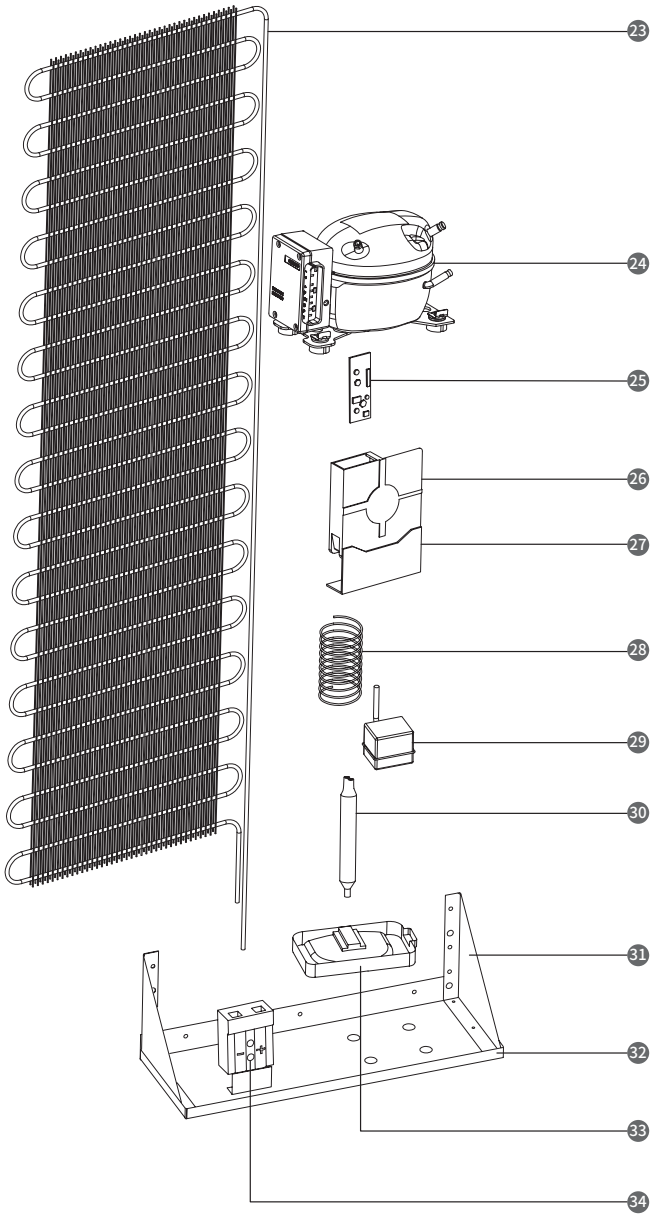
10



**11**



12



序号	名称	数量
1	急冻室门板层架	2
2	门板饰盖	1
3	冷藏室门板层架	3
4	层架防护栏	1
5	急冻室门体	1
6	门锁组件总成	2
7	冷藏室门体	1
8	门体边框饰件	2
9	控制电路板	1
10	控制线路板标牌	1
11	面罩总成	1
12	上铰链	2
13	上铰链轴	1
14	中铰链轴	1
15	中铰链	2
16	下铰链轴	1
17	下铰链	2
18	底脚	4
19	冷冻室层架	2
20	冷藏室层架	3
21	冷藏室挂篮箱	1
22	灯板总成	2
23	冷凝器	1
24	压缩机	1

序 号	名 称	数 量
25	压缩机转接板	1
26	冷凝器风机	1
27	冷凝器风机安装架	1
28	毛细管	2
29	电磁阀	1
30	干燥过滤器	1
31	机组底板加强架	2
32	机组底板	1
33	接水盒	1
34	电源接线插	1

## 12.0 质量保证

该产品适用法律规定的保修条款和条件，如果产品出现故障，请与最近的经销商联系。

维修该冰箱，请准备好如下文件：

- 注明购买日期的发票复印件。
- 故障的描述或索赔原因。

但是产品的保修将不覆盖如下情况：

- 在消费者使用产品时所发生的损坏、事故等，而这些损坏不是由于产品材料的缺陷或制造原因导致的。
- 消费者未按照说明书规定进行的误操作而导致的损坏。
- 整机外观破损，包括磨损导致的外观损坏。
- 未经制造商授权的维修、更改。



## 保修卡

客户姓名		联系电话	
产品名称		产品型号	
购买日期		序列号	
如果该设备为车厂原装冰箱,请您填写如下车辆信息:			
车辆品牌		车辆型号	
购买日期		车架号	
<p>本保修卡请用户妥善保管,以做维修凭证。                      保修期限自购买之日起十二个月内。                      全国统一服务电话: 400 110 1890</p>		 请关注微信公众号	



阿雷纳科技(深圳)有限公司  
 ARANA Technology (Shenzhen) Co., Ltd.





Thanks for choosing **ARANA** refrigeration device. Please read the instructions carefully before installation or first use of the refrigerator and store it in a place where all users could find it for easy reference. If the refrigerator is transferred or sold, please hand over the instructions along with it so that the new user is aware of installation methods, usage and safety requirements.

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# 1.0 Explanation of symbols

-  **DANGER!** Failure to observe this instruction can cause fatal or serious injury.
-  **WARNING!** Failure to observe this instruction can lead to minor or moderate injury.
-  **CAUTION!** Failure to observe this instruction can cause material damage and impair the function of the product.
-  **NOTE** Supplementary information for operating product.

## 2.0 Safety instructions

ARANA accepts no liability for damage in the following cases:

- Faulty assembly or connection.
- Damage to the product resulting from mechanical influences and overvoltage.
- Alterations to the product without expressing permission from the manufacturer.
- Use for purposes other than those described in the instructions.

### 2.1 General safety instructions

#### **CAUTION!**

**Do not open the refrigerant circuit under any circumstances. A qualified technician is recommended for any repair.**

- Only use the refrigerator for purposes described in the instructions.
- The refrigerator must be installed correctly under the guidance of the instructions before using.
- If the power cable of the device is damaged, it must be repaired and replaced by qualified technician immediately. Any cable, plug or connecting point with crack and abrasion must not be used to avoid potential safety hazard.

- The refrigerator must be powered down during cleaning or repairing.
- Do not use modified plug or self-prolonged cable.
- Check the voltage specification on the data plate to make sure it is the same as the power supply.
- The refrigerator is not suitable for storing substances which are caustic or contain solvents.
- Please disconnect the power supply if you do not intend to use the refrigerator for an extended period of time when it is installed in caravans, motorhomes and on boats.



### **WARNING!**

- Inadequate repairs may cause more serious hazards.
- Do not operate the device if it is visibly damaged.
- This device can be used by children aged 12 or over, as well as persons with diminished physical, sensory or mental capacities or a lack of experience and knowledge, providing they are supervised, or have been taught how to use the device safely and are aware of the resulting risks.
- Operating, cleaning and user maintenance must not be carried out by children without supervision.
- Danger of crushing! Do not put your fingers into the hinge.
- Foodstuff may only be stored in its original packaging or in suitable containers.

## **2.2 Safe operation instructions**



### **DANGER!**

- Do not touch exposed cables with your bare hands.



## CAUTION !

- Before starting the device, making sure the power line and the plug are dry.
- Do not place the refrigerator near naked flames or other heat sources (heater, direct sunlight and gas over etc.)
- **DANGER OF OVERHEATING!**  
Always keep sufficient ventilation so that the heat generated during operation can dissipate.
- Ensure the ventilation grille on the top of the refrigerator is not blocked or covered.
- Protect the device and cables against heat and moisture.
- Ensure foodstuffs do not touch the inwall of cooling area.

## 3.0 Intended use

- The refrigerator is suitable for installation in caravans, motorhomes, boats and also homes.
- The refrigerator is only suitable for installation in a fitted cavity. Once it is installed, only the front of the device is accessible.
- The refrigerator is only suitable for refrigerating, freezing and storing food, but not for medicine storage.



## WARNING!

- Please check if the refrigeration capacity of the refrigerator is suitable for storing the food you wish to cool.

## 4.0 Technical description

- The upper is freezer compartment, the lower is refrigerator compartment.

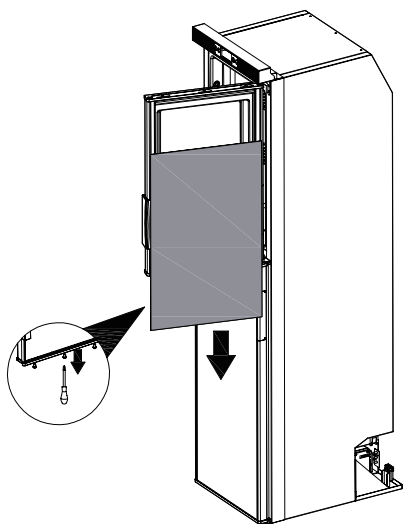
- All materials used in the refrigerator are compatible for use with foodstuffs. The refrigerant circuit is hermetically sealed and CFC-free.
- The temperature of refrigerator compartment can be adjusted by control panel.

EN

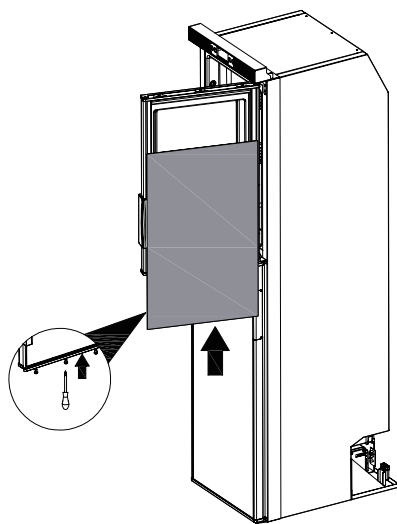
## 5.0 Installing the door panel

- Installing the door panel is preliminary before the refrigerator installation.
- The thickness of door panel must be less than or equal to 2.5mm.

01



**REMOVE  
THE DOOR  
PANEL**



**INSTALL  
THE DOOR  
PANEL**

## 6.0 Installation and connection

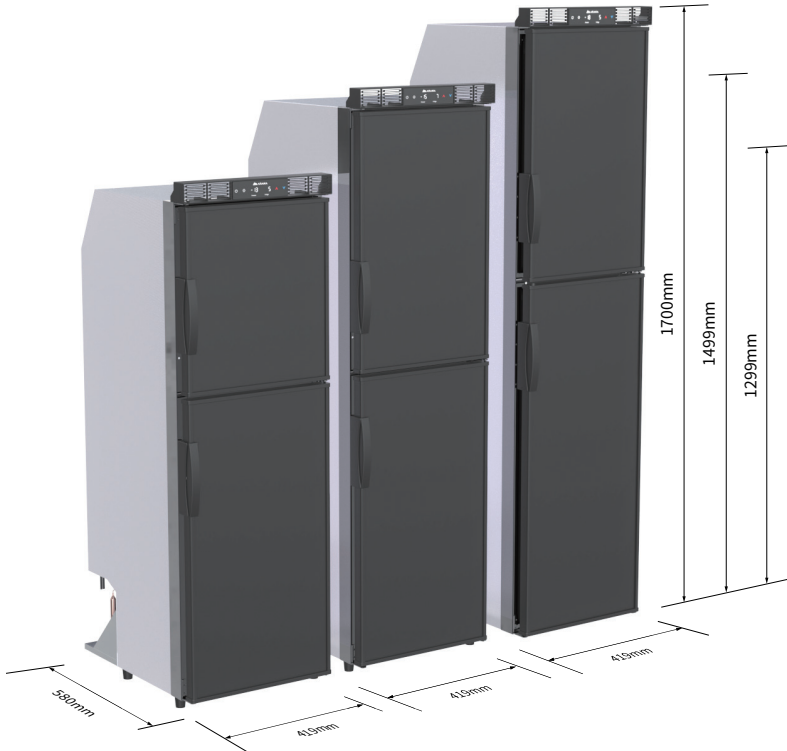
Please note the following instructions for installation:

### **i** NOTE

- The device can be tilted sideways up to 30°. When setting up the refrigerator, note that it must be fastened to take account of this. If you have any questions regarding installation, consult your specialist dealer.
- Install the refrigerator so that the warm air generated can easily flow away.

EN

02



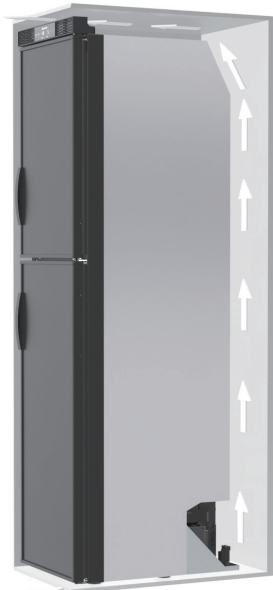
## 6.1 Installing the refrigerator

When installing the refrigerator, note the following:

**DANGER!**

- Ensure that the floor is solid and level, must be able to support the weight of the refrigerator and contents.
- The refrigerator must be installed in a recess so that it stands secure when the vehicle is in motion.
- No clearance is required on left, right and rear sides of the refrigerator. The refrigerator has rubber stoppers on the rear side and can be pushed into the end, so no extra gap required.

03



**INTERNAL COOLING  
CYCLE INSTALLATION**



**EXTERNAL COOLING  
CYCLE INSTALLATION**

## 6.2 Reversing the doors

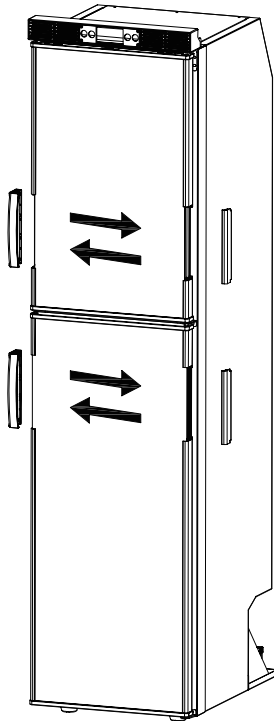
Reverse the doors as the following steps when needed:

- Change the lock buckle of the door;
- Remove the door of freezer compartment;
- Remove the door of refrigerator compartment;
- Change the hinge of the middle door;
- Change the lock catching;
- Install the door of freezer compartment;
- Install the door of refrigerator compartment.

EN

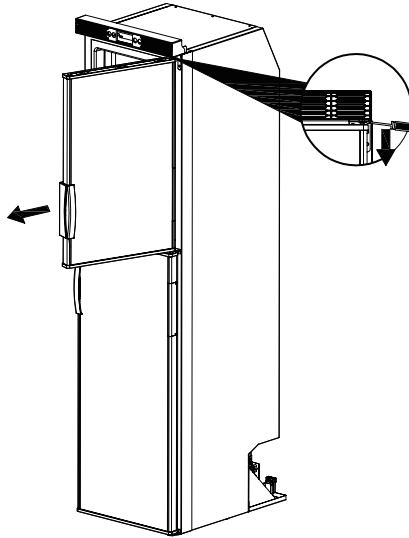
04

**CHANGE THE  
LOCK BUCKLE  
OF THE DOOR**

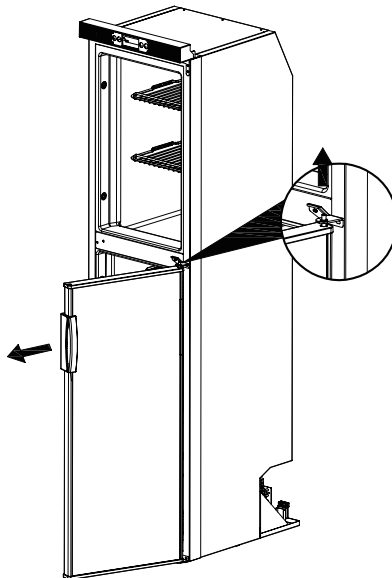


05

REMOVE  
THE DOOR  
OF FREEZER  
COMPARTMENT



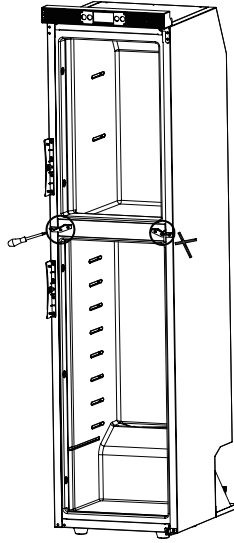
REMOVE THE  
DOOR OF  
REFRIGERATOR  
COMPARTMENT



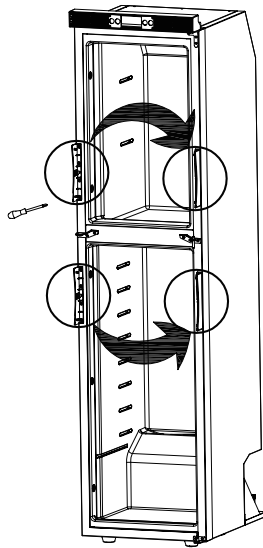


06

**CHANGE THE  
HINGE OF  
MIDDLE DOOR**



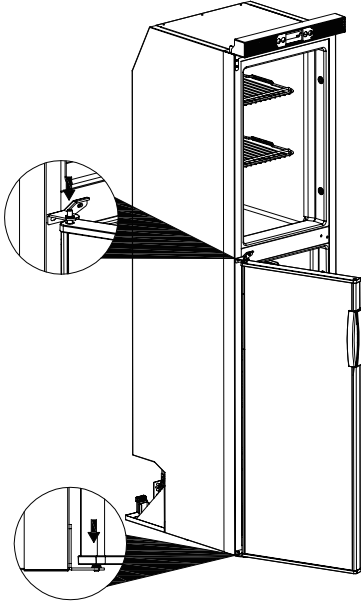
**CHANGE  
THE LOCK  
CATCHING**



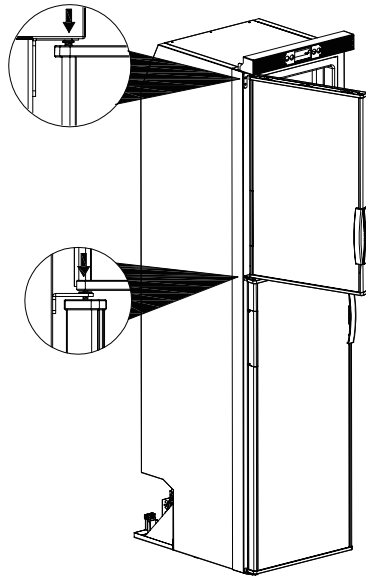
**07**

**EN**

**INSTALL  
THE DOOR  
OF FREEZER  
COMPARTMENT**



**INSTALL THE  
DOOR OF  
REFRIGERATOR  
COMPARTMENT**



## 6.3 Connecting the refrigerator

### CAUTION!

- **Make sure the correct connection to the power supply.**
- Before starting up the device for the first time, checking whether the operating voltage matches the battery voltage (see data plate).
- The circuit shall be protected by fuses with maximum 15A (12V) or 7.5A (24V).
- The brown cable of the power supply connects to the positive pole of the battery and the blue cable connects to the negative pole of the battery.

The refrigerator can be operated with a 12V or 24V DC voltage supply, please see data plate.

### CAUTION!

- To avoid voltage drops and loss of performance, keep the connection cable as short as possible and uninterrupted. Therefore, avoid additional switches and plugs.

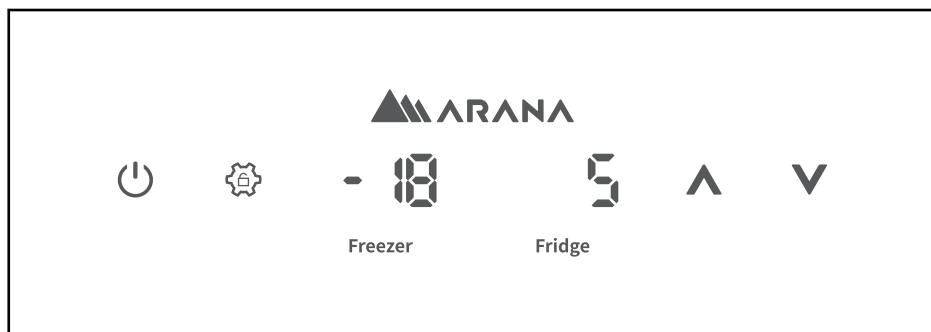
It is recommended that the cable length should not exceed 2 meters and the cross section of the cable should not be less than 2mm<sup>2</sup>. Please check the following cross section if the cable exceeds 2 meters long.

The cable cross section	Maximum length/12V	Maximum length/24V
2.5mm <sup>2</sup>	2.5m	5m
4mm <sup>2</sup>	4m	8m
6mm <sup>2</sup>	6m	12m
10mm <sup>2</sup>	10m	20m

To protect the battery, the refrigerator switches off automatically if the voltage is insufficient (see below table).

Rated voltage	12V	24V
Cut-in voltage	11.7V	24.2V
Cut-off voltage	10.4V	22.8V

## 7.0 Using the refrigerator



Power switch



Security lock / Setting key



Increase the temperature



Decrease the temperature

### NOTE

- Before starting the refrigerator for the first time, you should clean it inside and outside with a damp cloth for hygienic reasons (please also refer to the chapter "Cleaning and maintenance" on page 48).

## 7.1 Energy saving tips


- Choose a well ventilated location which is protected from direct sunlight.
- Allow hot / warm food to cool down firstly and then place them into the device.
- Do not open the device more times than necessary.
- Do not leave the doors open for longer time than necessary.
- Defrost your refrigerator periodically when a layer of ice forms.
- Avoid unnecessarily low temperature settings.
- Clean dust and dirt from the condenser at regular intervals.

## 7.2 Switching on the refrigerator

Start the device by touching the switch button for 3 seconds 

- Once started, the power light will always be on.
- After the refrigerator is switched on, all indicator lamps will light up. If without any other operations, the indicator lamps will be dimmed after 5 minutes.
- Please wait for a moment as the compressor will start up with some delay after the refrigerator is switched on.

## 7.3 Using of security lock

In order to prevent the mis-operations by touching the keys, pressing the security lock  3 seconds for unlocking, then processing temperature setting and turning off the device.

Security lock is also the temperature setting key of freezer and refrigerator compartments, pressing longer time for unlocking:

- Touching one time, the temperature number of freezer compartment starts flashing, then setting the temperature of freezer compartment;
- Touching two times, the temperature number of refrigerator compartment starts flashing, then setting the temperature of refrigerator compartment;
- Touching three times, the temperature setting is finished, exiting the temperature setting mode.

## 7.4 Temperature setting

The temperatures of freezer and refrigerator compartments can be set and controlled separately.

Temperature setting of freezer compartment:

- Touching the security lock 3 seconds for unlocking, touching the security lock one time and the temperature number of freezer compartment starts flashing; Setting the temperature by touching the buttons **▲ ▼**, finishing the temperature setting, touching the security lock two times and then exiting the operation.
- Temperature range: -18° C ~ -5° C.

Temperature setting of refrigerator compartment:

- Touching the security lock 3 seconds for unlocking, touching the security lock two times and the temperature number of refrigerator compartment starts flashing; Setting the temperature by touching the buttons **▲ ▼**, finishing the temperature setting, touching the security lock one time and then exiting the operation.
- Temperature range: 0° C ~ 10° C.



### **NOTE**

**The cooling performance can be affected by:**

- The ambient temperature
- The amount of food to be conserved
- How often you open the door
- Battery low voltage protection

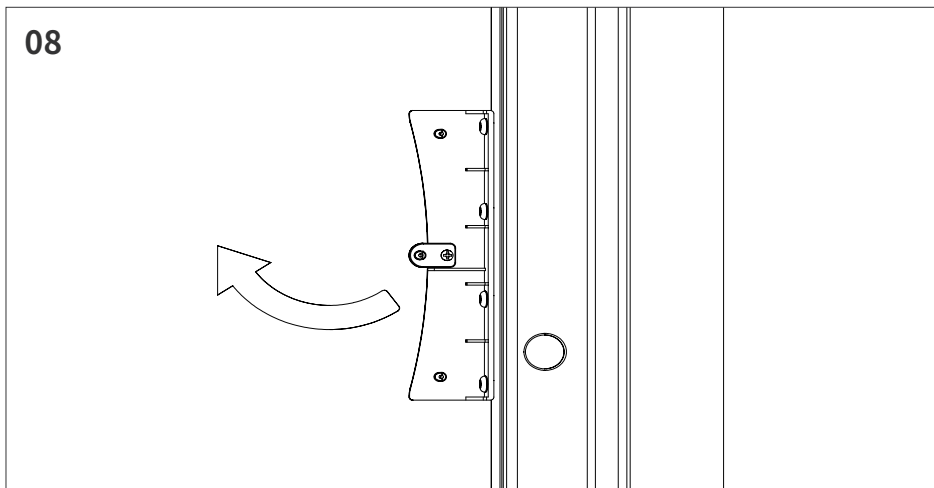
## 7.5 Switching off and storing

If you do not intend to use the refrigerator for a long time, proceed the following steps:

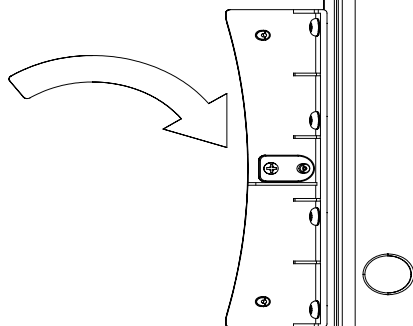
- Touching the security lock  3 seconds for unlocking, touching the ON/OFF key  3 seconds for turning off the device.
- Disconnect the main power supply.
- Clean the refrigerator (see 8.0 Cleaning and Maintenance).
- Open the refrigerator doors and hold them to the airing lock as the following steps:
  - a. Open the airing lock deflector outwards.
  - b. Push the door handles on the tab of the deflector.
  - c. Latch the doors slightly opened to prevent mould from forming.

### NOTE

- When the refrigerator is idle, keep inside being dry for preventing the growth of bacterial.
- When reusing the refrigerator, please turn the airing lock deflector to the inside of the handles (as the figure 09 showing), then the refrigerator doors can be closed normally.



09



## 8.0 Cleaning and maintenance

### **DANGER!**

- Always disconnect the refrigerator from the mains before you clean and service it.

### **CAUTION!**

- Do not use abrasive cleaning agents or hard objects during cleaning as these can damage the refrigerator.
- Do not use hard or sharp tools to remove ice or free objects frozen in the device.
- Do not use any mechanical tools or any other tools to speed up the defrosting process.
- Take the stored stuff out of the refrigerator.
- Clean the refrigerator with a damp cloth.
- Wipe the refrigerator dry with a cloth after cleaning.



## 9.0 Technical data

BFC 135		
Gross Volume	135L	
Freezer Storage Volume	51L	
Rated Power	80W	
Rated Current	7A/12V	3.5A/24V
Min. Starting Voltage	10.9V/12V	22.7V/24V
Min. Working Voltage	10.1V/12V	22.3V/24V
Power Consumption under 32°C Ambient Temperature	0.55KW/24H	
Refrigerating Temperature Range	0° C ~ 10° C	
Freezer Temperature Range	-5° C ~ -18° C	
Climatic Class	T	
Installation Dimension	W419 x D580 x H1299 (mm)	
Max. Tilt Angle	30°	
Weight	Net Weight: 36Kg Gross Weight: 42Kg	
Dimming Time of Display	Without Operation for 5 Minutes	
Pressing Time of Unlock Key	3s	
Pressing Time of Power Key	3s	



### NOTE

- To continuously improve our products, we reserve the rights to change some specifications without further notice, please check the refrigerator data plate.

**BFC 157**

Gross Volume	157L	
Freezer Storage Volume	73L	
Rated Power	80W	
Rated Current	7A/12V	3.5A/24V
Min. Starting Voltage	10.9V/12V	22.7V/24V
Min. Working Voltage	10.1V/12V	22.3V/24V
Power Consumption under 32°C Ambient Temperature	0.60KW/24H	
Refrigerating Temperature Range	0° C ~ 10° C	
Freezer Temperature Range	-5° C ~ -18° C	
Climatic Class	T	
Installation Dimension	W419 x D580 x H1499 (mm)	
Max. Tilt Angle	30°	
Weight	Net Weight: 40Kg Gross Weight: 47Kg	
Dimming Time of Display	Without Operation for 5 Minutes	
Pressing Time of Unlock Key	3s	
Pressing Time of Power Key	3s	

 **NOTE**

- To continuously improve our products, we reserve the rights to change some specifications without further notice, please check the refrigerator data plate.

**BFC 185**

Gross Volume	185L	
Freezer Storage Volume	73L	
Rated Power	80W	
Rated Current	6.5A/12V	3.25A/24V
Min. Starting Voltage	10.9V/12V	22.7V/24V
Min. Working Voltage	10V/12V	21.3V/24V
Power Consumption under 32°C Ambient Temperature	0.65KW/24H	
Refrigerating Temperature Range	0° C ~ 10° C	
Freezer Temperature Range	-5° C ~ -18° C	
Climatic Class	T	
Installation Dimension	W419 x D580 x H1700 (mm)	
Max. Tilt Angle	30°	
Weight	Net Weight: 45Kg Gross Weight: 53Kg	
Dimming Time of Display	Without Operation for 5 Minutes	
Pressing Time of Unlock Key	3s	
Pressing Time of Power Key	3s	

**NOTE**

- To continuously improve our products, we reserve the rights to change some specifications without further notice, please check the refrigerator data plate.

## 10.0 Troubles

### 10.1 Troubleshooting

Code	Error Type
Er1	Battery protection (Lower or higher voltage issue);
Er2	The current overload on fan in excess of 1.0 Amps;
Er3	Motor start error (The motor may be blocked or the differential pressure in the refrigerant circuit is too high (>5bar) );
Er4	Minimum motor speed error (Too much load on the refrigerant circuit, the motor can't keep 1850r/min);
Er5	Heating protection of compressor controller (Too much load on the refrigerant circuit or too high ambient temperature);
Er6	Failure of freezer thermostat line (Thermostat is damaged or unconnected);
Er7	Failure of refrigerator thermostat line (Thermostat is damaged or unconnected);
Er8	Two thermostat lines are both damaged or unconnected.

### 10.2 Fault alarms

(1) Compressor does not run (battery connection)

Fault	Possible cause	Remedy
Device does not function, Power LED does not glow $U_{Term} = 0V$	The connection between the battery and electronics unit has been interrupted.	Establish a connection.
	Main switch faulty (if installed)	Replace the main switch.
	Additional supply line fuse has blown (if installed).	Replace the supply line fuse.
	Internal fuse has blown	Replace the internal fuse.

Fault	Possible cause	Remedy
$U_{Term} \leq U_{ON}$	Battery voltage is too low	Charge the battery.
The device does not cool (power is present, power LED is lit)	Defective component	This can only be repaired by an authorised repair centre.
	Loose cables Poor contact (corrosion)	Establish a connection.
	Battery capacity too low	Replace the battery.
	Cable cross section too small or cable too long	Replace the cable.
The device does not cool, power is present, status LED flashes. Start attempt with $U_{Term} \leq U_{OFF}$	The device has switched off due to an internal fault	This can only be repaired by an authorised repair centre.
	Ambient temperature too high	--
Start attempt with $U_{Term} \geq U_{ON}$	Insufficient ventilation	Clean existing ventilation or install sufficient ventilation.
	Condenser is dirty	Clean the condenser.
	Fan defective	Replace the fan.
Electric circuit between the pins in the compressor interrupted	Defective compressor	This can only be repaired by an authorised repair centre.

$U_{Term}$ : Voltage between the positive and negative terminals of the electronics.

$U_{ON}$ : Cut-in voltage of the electronics.

$U_{OFF}$ : Cut-off voltage of the electronics.

(2) Interior temperature too low on warmest control setting

Fault	Possible cause	Remedy
Compressor runs constantly	Control sensor faulty	This can only be repaired by an authorised repair centre.
Compressor runs for a long time	Large quantities of food have been frozen in the freezer compartment.	Wait until goods are completely frozen.

(3) Poor cooling, increase in interior temperature

Fault	Possible cause	Remedy
Compressor runs for a long time/ continuously	Evaporator is iced over.	Defrost the evaporator.
	Cooling area insulation is insufficient (moist/wet).	Adjust/replace the door seal.
	Ambient temperature too high	--
	Insufficient ventilation	Move the refrigerator to another location.
	Condenser is dirty.	Clean the condenser.
Compressor does not run often	Fan defective	Replace the fan.
	Battery capacity exhausted	Charge the battery.

(4) Water in the refrigerator

Fault	Possible cause	Remedy
Water is leaking into the inside of the refrigerator.	The water drain system is clogged.	Clean the drain.
	Foodstuffs are preventing the water from flowing to the drain tube.	Make sure that foodstuffs do not touch the rear wall.

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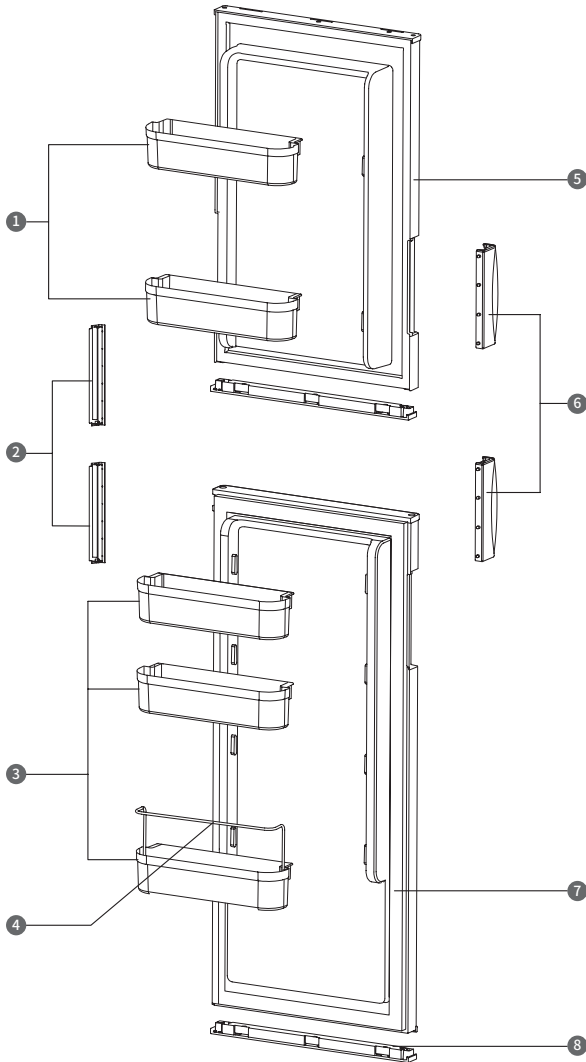
(5) Unusual noises

Fault	Possible cause	Remedy
Loud humming	A component of the refrigerant circuit cannot move freely (touching the wall).	Bend the component carefully away from the obstruction.
	There is a foreign object stuck between the cooling unit and the wall.	Remove the foreign object.
	Fan noise (normal)	--

# 11.0 Spare parts list

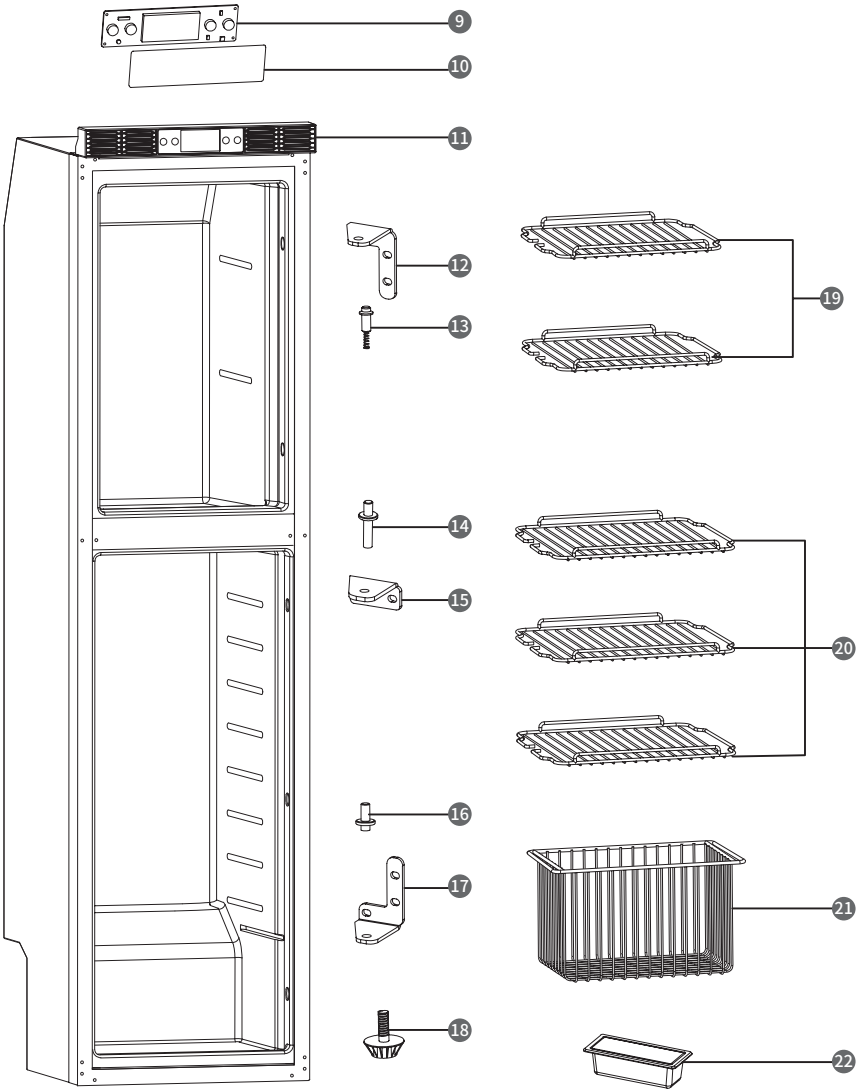
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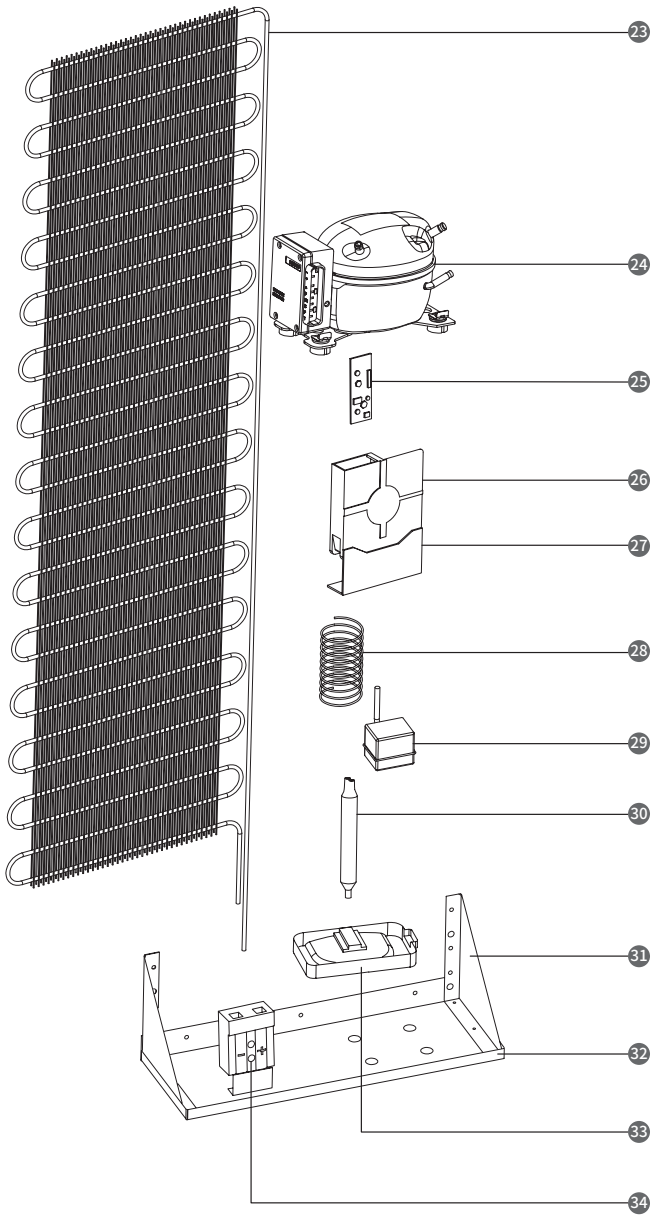


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Serial number	Name	Quantity
1	Door bin of freezer compartment	2
2	Door handle blank	1
3	Door bin of refrigerator compartment	3
4	Protective rod for door bin	1
5	Freezer door	1
6	Door lock assembly	2
7	Refrigerator door	1
8	Door frame decoration	2
9	Control electric panel	1
10	Plate of control circuit panel	1
11	Ventilation grille assembly	1
12	Upper hinge	2
13	Upper hinge pin	1
14	Middle hinge pin	1
15	Middle hinge	2
16	Lower hinge pin	1
17	Lower hinge	2
18	Foot	4
19	Shelf in freezer compartment	2
20	Shelf in refrigerator compartment	3

Serial number	Name	Quantity
21	Hanging basket of refrigerator compartment	1
22	Built-in lamp	2
23	Condenser	1
24	Compressor	1
25	Main PCB	1
26	Condenser fan	1
27	Installation bracket for condenser fan	1
28	Capillary pipe	2
29	Electromagnetic valve	1
30	Filter drier	1
31	Reinforced bracket for base pan	2
32	Base pan	1
33	Drain tray	1
34	Power wiring plug	1

## 12.0 Warranty

The statutory warranty period applies. If the product is defective, please contact the nearest dealer in your location. For repair and guarantee processing, please prepare the following documents:

- A copy of the invoice with purchasing date.
- A reason for the claim or description of the fault.

No warranty claim shall be applicable under the following circumstances:

- Damage, accident or otherwise, to the refrigerator while in the possession of the consumer not caused by a defect in material or workmanship.
- Damage caused by consumer misuse, tampering, or failure to follow the care and special handling provisions in the instructions.
- Damage to the finish of the case, or other appearance parts caused by wear.
- Damage caused by repairs or alterations of the refrigerator by anyone other than those authorized by the manufacturer.

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BFC 135/157/185.0122.V01

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