Make A Difference 卓/尔/不/凡

# WATER HEATER FOGATTI





**即热式燃气热水器** 安装和使用说明书



**RV Instantaneous Gas Water Heater** Installation and Operating Instructions



非常感谢您选购**阿雷纳**的即热式燃气热水器设备,在安装或使用该设备之前,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。如果该设备转让或者出售,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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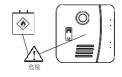
# 1.0 安全符号说明

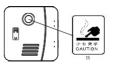
**危险!** 请遵守此说明书的安全警告信息和操作安全说明,以避免可能的人身伤害或死亡。如果不遵守这些警告和安全准则可能会导致火灾,爆炸、甚至死亡。

# 2.0 安全说明

- · 禁止将车载燃气快速热水器安装在室内使用,仅限其 安装在休闲车辆(房车)中。房车有自己的电源、气、 水供给,可自行行驶或由另一辆车牵引行驶。
- · 为防止火灾或爆炸事故的发生,不要在热水器和排烟口附近放置易燃、易爆、易挥发的物品。
- · 在热水器运行期间和使用后,排烟口及其周围部件的温度较高,请勿用手触摸,以免烫伤。
- 不管是淋浴还是盆浴,为了防止烫伤,应先用手测试水温,水温合适后再使用。
- · 请勿以任何方式改装热水器。自行改装很危险,并且 将不在保修范围内。
- 长期不使用热水器时,为防止热水器水路冻裂及漏气, 应排尽机内存水,并关闭进水阀、燃气及电源。环境 温度低于0℃时,必须排出热水器内的水,或者接通 电源并打开燃气阀启动防冻功能,做好防冻处理。(具体操作内容见说明书相关章节)
- 使用期间,按照此手册中指示定期保养。请经常检查 排烟口出口处和进气口是否有堵塞,是否有积雪积冰, 尘土污垢。确定热水器能吸入清洁空气,并能将燃烧 产生的废气顺利排放。













- · 热水器仅限用于提供热水,不可用于其它用途,以防止意外事故的发生。
- · 热水器的热水不能饮用。
- · 请勿使用电池充电器给热水器供电或测试。车载燃气快速热水器所使用的车载电源必需符合 class2 的安全隔离电源。请使用合格的电源,避免热水器发生损坏。
- · 请勿改装热水器的下极接地系统。
- · 除非热水器电源开关处于关闭状态,否则请勿高压通电测试。
- · 车辆行驶时请勿使用热水器。车辆加油时请勿使用热水器,并关闭热水器电源。
- · 烟气排放时注意保护周围建筑物。
- · 请勿将热水器和其他设备的排气系统连接。
- ・ 安装时,确保热水器底部平行于水平面。使用热水器时,请选择较平坦的地势停放 车辆。
- · 不得使用非我司提供的配件。

### ▲ 危险!如果闻到煤气味该怎么办?

- · 撤离所有人员离开车辆。
- 关闭燃气气源。
- 请勿使用车辆的任何电器或电话。
- · 不要启动车辆的发动机或发电机。
- 请联系最近的授权维修服务商或燃气供应商进行维修。
- · 如果您无法联系授权维修服务商或燃气供应商,请与最近的消防队联系。
- 在修复气体泄漏之前,请勿打开气源。

## ▲ 危险! 禁止使用!

- 禁止在有水的环境中使用。
- · 禁止用于室内加热。
- · 禁止在可移动式住宅中使用。
- 禁止在装载食物的货车或路边食物贩卖小车中使用。
- · 禁止在建筑拖车中使用。
- 禁止用于泳池水加热。

# 3.0 功能介绍与说明

该热水器操作简单方便。微电脑智能控制系统控制热水器的全过程。按键启动热水器并设定所需温度。微电脑智能控制系统检测到合格的水流后即启动点火装置点火,随后再打开燃气阀接通燃气点燃燃烧器,用户便可享用源源不断的恒温热水。微电脑自动检测全过程,安全可靠。如发生故障,微电脑系统将自动关闭燃气以防止发生意外。该热水器是强制排气结构。热水器开启后,在风机的作用下外部空气经过进气格栅,防尘网过滤后进入燃烧室,燃烧后产生的废气通过小口径烟管被强制排除,使用更加安全。

- · **数字恒温系统**: 微电脑控制系统,构成整机的"电脑",全程控制热水器的水、电气协调工作,不会出现水温忽高忽低的想象,以满足对舒适的要求。
- · **低水压启动**:启动水压低,使用更方便。
- · **熄火保护**: 热水器在使用过程中意外熄火时,可自动切断燃气供应,确保燃气不会 泄漏。
- · 无极变速抗风阻功能: 当烟道堵塞或排烟受阻时,内置微电脑系统检知后会适当提高风机的运行速度,消除有害气体的产生。当速度达到预定的上限转速肘,微电脑系统发出停气、停火指令,有效地保障安全。
- · **水气联动控制**: 当进水供应中断或关闭出水阀时,热水器会自动停止燃烧并关机。
- · **出水温度显示**: 带出水温度显示功能。
- · **防冻功能**: 当热水器内水管温度低于  $6\pm 1^{\circ}$ C(43 °F  $\pm 2^{\circ}$ F)时,线控制器将显示 "**Fd**" 字符,热水器将启动点火并在一定负荷下运行,整机运行 5 秒后自动关闭。或 2 秒 内热水器水温达到  $32\pm 1^{\circ}$ C(90 °F  $\pm 2^{\circ}$ F),热水器将自动关闭。关机后等待 3 分钟热水器再次自检。当温度低于  $6\pm 1^{\circ}$ C(43 °F  $\pm 2^{\circ}$ F)或防冻温控器闭合时又再次运行,如此循环。

在启动防冻功能的过程中,当发生故障时,会报相应的故障、显示相应代码。15分钟后系统自动清除故障代码。如果仍满足防冻启动条件,防冻功能将自动重新启动。

· **故障自动诊断和故障代码显示功能**:智能微电脑实时监控各种安全装置、燃气比例 阀等部件,发现故障及时安全停机。先进的故障码显示功能,使用、维修方便。

# 4.0 安装说明

## ▲ 危险!

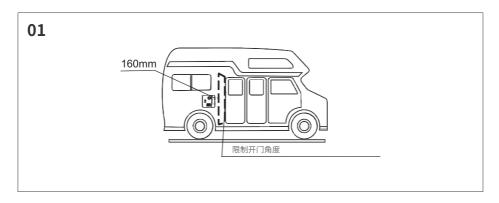
- 该产品不适合自行安装。
- · 安装和维护必须由专业人员、服务机构或燃气热水器供应商进行。
- · 安装、调试、 改动或维护不当将导致财产损失, 人员伤害或死亡。
- · 该产品必须由授权安装服务的公司进行安装和维修, 否则对因安装、维修而导致的 事故, 我公司概不负责。

### ▲ 危险!

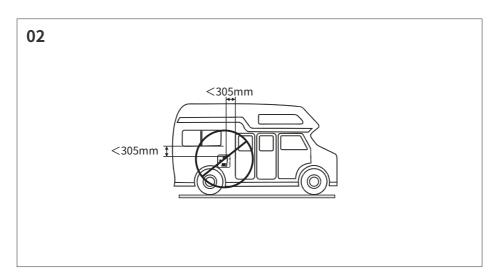
· 请将该产品的任何部件放置在儿童无法接触到的地方,避免发生人身伤害。

以下说明适用于房车燃气热水器。 如果您对特定安装或应用有其他疑问, 请咨询我司或 我司授权公司进行安装维修服务。

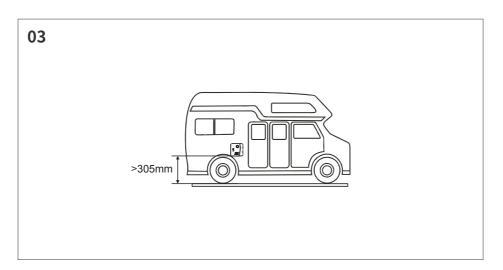
- 必须正确安装热水器以保证进气百叶窗和排烟管始终空气流通无阻碍。
- · 在对系统进行压力测试时, 设备应与供气管道系统断开连接。
- · 勿将该产品安装在悬垂结构下。应安装在牢固的车体位置上。
- · 安装该产品时,确保排烟口不会被车门遮挡。如果情况不允许,请确保车门打开时, 热水器通风口与车门之间留出至少 160mm 的距离。



- · 如果墙体不是耐火材料,该产品的背面和四周与可燃材料之间的缝隙必须填充隔热阻燃材料。
- · 由于乙烯壁板的差异,在没有事先咨询壁板制造商时,该设备不应安装在乙烯墙板上。
- · 当热水器排烟口距离门窗小于 305mm 时,请勿安装在该位置。



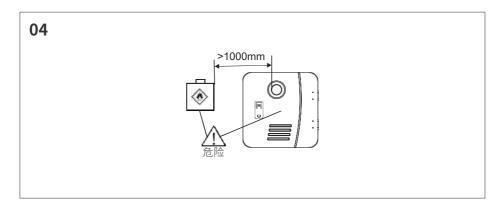
· 热水器的安装位置应高于地面305mm以上。





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- · 不要将热水器或其他电器安装在排气口,面向遮阳篷、折篷或任何其他外壳覆盖的区域。
- · 热水器可安装在房车的可伸缩遮阳篷下,但遮阳篷必须通风良好。
- · 热水器必须直立安装, 否则会影响热水器的正常使用。
- · 安装热水器时,应确保接地可靠。
- · 进水管与出水管连接前,请将水管内冲洗干净。
- · 在水泵后面要装一个易组装的过滤网,用于过滤水质。如果没有过滤网,我司将不提供保修服务。
- · 阀门应安装在燃气管道、进水管和出水管上,便于维护和保养。
- · 安装后检查漏气和漏水,确保没有任何气体和水泄漏。
- · 从排气口到易燃物的最小距离应 > 1000mm。



· 热水器正常运行的气体压力范围是:最大入口压力不能超过 3.3KPa,最小压力不能低于 2.0KPa。超出范围将无法正常工作。

如果安全阀定期排放,这可能是由于供水系统中的热膨胀压力过大造成的。请联系供水商或当地管道检查员纠正这种情况。不要堵塞安全阀。

## ▲ 危险! 锋利的边缘会导致割伤和伤害!

· 在安装和操作设备时,务必戴上防护手套,以避免被锋利边缘割伤。

## ▲ 危险!

· 在安装热水器之前,必须安装一个混水阀。在额定设置下,出水温度不会超过 51℃。当水流量偏小或进水温度过高时,热水器有可能将水加热到 51℃以上。此时,请打开混水阀调整至舒适的淋浴温度。

# 4.1 型号和规格

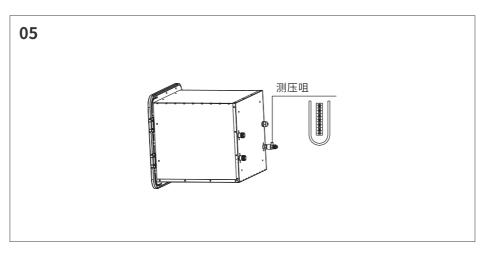
热水器型号	FS06B1
气体	通用液化石油气
输入负荷	12kW
喷嘴数量	6
喷嘴尺寸	0.91MM
最大工作水压力	0.8MPa
最小工作水压力	0.1MPa
标称燃气压力	2.8kPa
标称分气杆压力	1.3kPa
电源	12VDC, <10amp
水加热能力(温 度上升 25K)	6L/min
最高水温	51°C
输出负荷	10.8kW

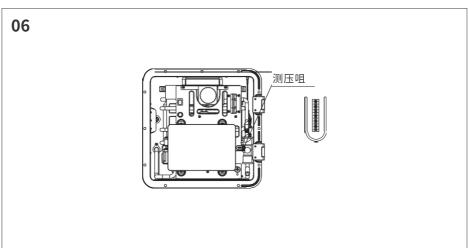


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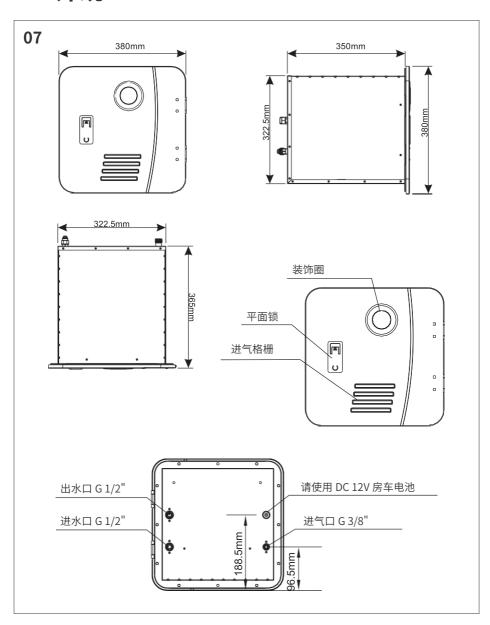
#### 气压实验位置

- · 进气口压力测试:在热水器的入口接头处安装一个带压力测量喷嘴的接头。压力测量喷嘴的尺寸是外部直径 6mm,内径不大于 1mm。从压力测量喷嘴测量气体压力。(见图 05)
- · 气体歧管入口压力测试:如图所示,打开门,取下压力测量喷嘴的密封螺钉,并测量压力测量喷嘴的气体压力。(见图 06)

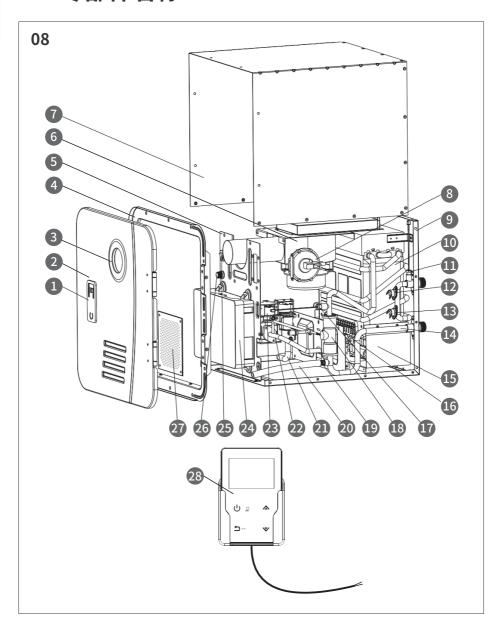




# 4.2 外观



# 4.3 零部件名称



序号	名称	序号	名称
1	平面锁	16	点火针组件
2	面壳组件	17	进水温度探测
3	装饰圈	18	水流传感器
4	机箱法兰盖	19	安全阀
5	固定板	20	排水管
6	风机蜗壳组件	21	进气管总成
7	外壳上围板	22	火排阀体连接管
8	风压开关	23	燃气比例阀
9	外壳下围板	24	控制器
10	热交换器	25	开 / 关
11	出水温度探头	26	保险丝盒
12	防冻温控器	27	防尘网
13	超温保护温控器	28	线控器
14	进水管总成		
15	燃烧器		

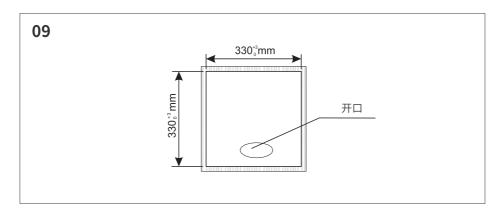
## 4.4 安装步骤

#### 安装前请在房车上选择合适的安装位置。

- · 不要将热水器安装在房车的通道中。
- · 应安装在房车的外墙上。
- · 排气口朝向房车外部。
- · 热水器应安装在坚固的框架上。
- · 为了牢固地安装热水器,设备的底部应由不易燃的地板或框架支撑。
- ·如果安装开口的周围是可燃材料,则需使用阻燃绝缘材料,例如隔热毡或隔热板,以使热水器的后侧与可燃表面完全分离。填充材料的最小厚度必须大于 20mm。
- · 热水器后面的外壳连接间隙应在安装过程中用耐高温密封胶密封,将其与房车内部空间隔离。以使燃烧的空气来自房车外部,燃烧产生的废气排到车外。

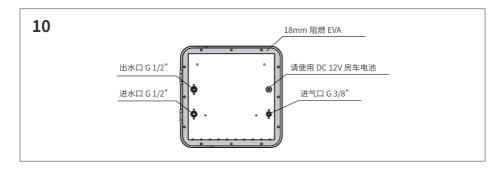


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- ・ 开孔尺寸为 330×330mm。
- · 当热水器从孔中拉出时,开口深度应足以容纳燃气管、电线和水管。
- · 在孔的底部或后部,请预留燃气管、进/出水管、电源线和其他管线通道孔。
- · 应预留足够的燃气管道、电线、水管的长度,推荐大于开口深度的 1.5 倍,以便维护和 测试。
- · 孔的四周应确保足够的强度来固定热水器。(见图 09)
- · 在热水器下方增加支撑框架可以增加牢固性,以确保热水器不会因车辆的加速或停止 而造成损坏。



#### 将 G1/2 冷热水管正确连接到热水器后部。

- · 在热水器背面正确安装 G3/8 液化气管。
- · 将电源线正确连接到热水器。红色是正极,黑色是负极。
- · 将线控器与热水器背面的两条蓝线连接起来,不区分正负极;注意热水器背面的水管、燃气管和电线,需留出足够的长度将热水器从安装孔中取出。(见图 10)
- · 必须由专业人员或燃气热水器供应商安装接线、线控器等。

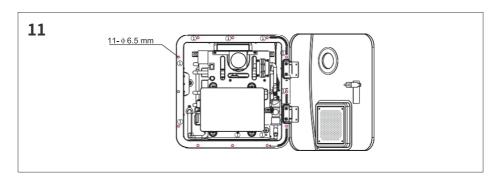


## ▲ 危险!

· 该热水器专为房车用户设计。工作电压为 DC 12V 房车电池,气源为液化石油气。 用力过大会损坏热水器的冷水和热水接头。安装燃气接头时,请用两把扳手拧紧接 头,以免损坏接头。

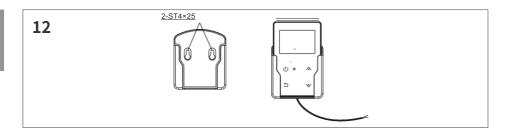
#### 在热水器法兰盖上粘贴 18mm 宽的单面粘合阻燃 EVA 板。

- · 粘贴处应平整、无缝隙(注意不要太厚)。
- ・ 然后将该产品放入开孔中,用 11 个螺钉(ST5×25mm)将热水器固定在车体上。
- · 开孔处应与水和空气隔绝,以防止进入房车内部。(见图 11)



#### 选择一个方便操作的位置来放置线控器。

- · 线控器和热水器之间的连接应根据具体环境合理布局。
- · 使用提供的两个螺钉 (2-ST4×25) 固定线控器底座,并将线控器放入座内。(见图 12)



**注意**:房车热水器配有水压安全阀,如果进水压力过高安全阀就会启动,将水排出泄压,以保护水管免受高压损坏。

# 4.5 检查步骤

#### 检查燃气管线有无泄漏。

- · 将肥皂水涂抹到连接处,看是否有气泡。
- · 如果没有,则表示没有泄漏;如果有气泡,请再次安装。

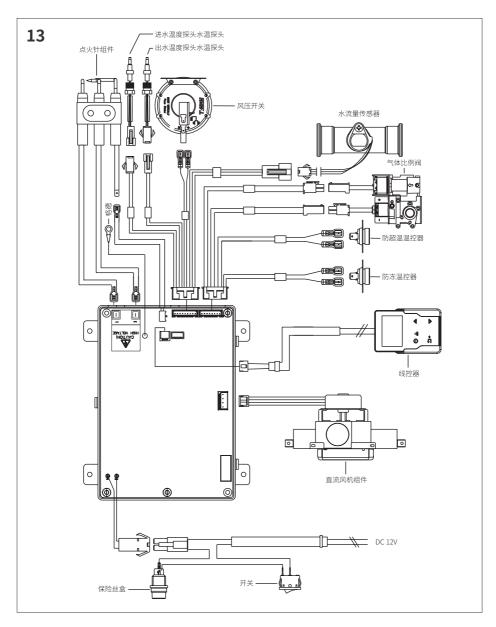
#### 检查水路有无泄漏。

安装人员在确认任何气体连接之间没有发生泄漏后,应检查热水器的运行情况,步骤参 见第 17 页。

- · 从排气口到易燃物的最小距离应 >1000mm。
- · 不要将热水器或其他电器安装在排气口,面向遮阳篷、折篷或任何其他外壳覆盖的 区域。
- · 热水器可安装在托车内或可伸缩遮阳篷下,但遮阳篷必须通风良好。
- · 该燃气热水器适用于符合标准的 9.8Kgs 液化气钢瓶。



# 4.6 电路接线图



# 5.0 操作说明

注意: 在电器运行时请勿在该产品附近喷洒喷雾剂。

注意:请勿在该产品内或附近使用或存放易燃物品。

注意:该设备上方及周围请勿放置物品。

注意: 请勿改装该设备。

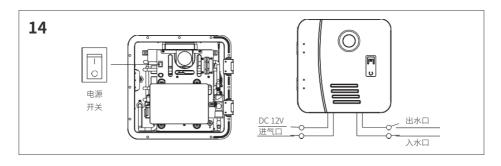
### ▲ 危险!

- · 在安装热水器之前,必须安装一个混水阀。在额定设置下,出水温度不会超过 51℃。当水流量偏小或进水温度高时,热水器有可能将水加热到 51℃以上。此时, 请打开混水阀调整至舒适的淋浴温度。
- · 首次操作前,请拆除包装材料,如塑料袋、塑料密封胶带等,包装材料可能会堵塞 热水器的出口。

用户在初次使用前确认热水器是否安装正确,仔细检查连接是否正确并且有无泄露。确 认后,请按照以下步骤操作:

## 5.1 启动设备

- ・ 确认热水器中的电源开关已打开; (见图 14)
- · 确认电源打开后,按下线控器上的按键" 世";
- · 打开进水阀和气瓶上的燃气阀;
- · 打开出水阀(热水龙头),热水器启动后热水流出。



### ▲ 危险!

- · 除非由监护人陪同,否则不建议儿童和青少年自行操作热水器。
- · 使用设备时请保持车门关闭。

关机或断电后,热水器会自动切断燃气供应。用户在停电或关机时应关闭燃气阀。请在下次启动前检查 DC12V 的电源连接。

- · 安装在耐火材料上。
- · 在检查软管和气瓶有无泄漏之前,请勿操作该产品。
- · 仅适用于室内安装。

### ▲ 危险!

- · 为了确保该设备的安全,必须按照制造商的说明进行安装、操作和维护。
- 在安装热水器之前,必须安装一个混水阀。在额定设置下,水温不超过51℃。当水流量偏小或进水温度高的时候,热水器有可能将水加热到51℃以上。此时,请打开湿水阀调整至舒适的淋浴温度。
- · 没有监护人的指导, 儿童不得操作此热水器。
- · 该机器的任何部件都应存放在儿童无法触及的地方。

### ▲ 危险!

- · 在阅读说明书之前,请勿操作该产品。
- · 请勿在该设备上放置物品。
- · 请勿在该产品附近存放化学品或易燃材料,或喷洒喷雾剂。
- · 请勿将面板、盖子或防护装置从设备上拆卸下来操作。

## 5.2 线控器说明

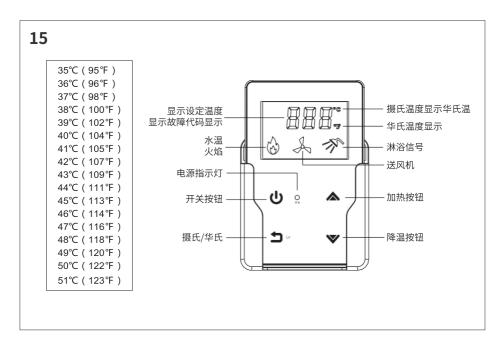
- ·接通电源后线控器发出"哔"的一声。显示屏显示气源代码 3 秒后熄屏。线控器电源 指示灯亮,开关机按钮背光灯亮。
- · 按下开机按钮后,根据运行状态实时显示风机、淋浴、火焰和出水温度。

CN

- · 将温度设置成您想要的温度,设定好的温度闪烁 5 次后自动切换为显示实时水温。
- ·按"与"切换摄氏度/华氏度。
- · 如果发生故障将显示故障代码。
- · 当系统通电或有效操作时蜂鸣器均发出"哔"一声。系统发生故障时蜂鸣器连续发出 10次"哔"声,每次间隔 1 秒。
- · 使用完毕后,请按"()"关闭热水器,同时关闭燃气和供水。

## 5.3 设定水温

- ・ 该机出水温度设定范围为 35°C~ 51°C; 设计出水温度不超过 51°C (123°F)。
- · 每按一下 "▲"按键,温度上升 1°C。持续按上升键,温度每 0.25 秒上升 1°C。
- 每按一下"▼"按键,温度下降1°C。持续按下降键,温度每0.25秒下降1°C。



### ▲ 危险!

· 请勿在该设备或任何其他设备附近存放或使用汽油或其他易燃蒸气和液体。

# 6.0 故障判断与处理

当热水器发生故障时,显示屏将显示故障代码,同时蜂鸣器会连续发出 10 声"哔"的报警声,请按照下表作相应处理。

故障代码	故障说明与处理方法
E0	出水温度探头开路或短路。请检查出水温度探头连线或更换连线。
F1	点火故障,点不着火或工作过程中出现意外熄火。请检查燃气是否正
E1	常供给,检查正常后再使用。
E2	点火前检测到有火焰信号,蜂鸣警报提示故障,需断电后清除故障。
E3	温控器发生故障,开机或热水器工作过程中检测到温控断开。检查温
ES	控器连线或降低水温。
F4	进水温度探头故障,进水温度探头开路或短路。请检查进水温度探头
C <del>4</del>	连线或更换连线。
E5	风机故障,开机或热水器工作过程中检测不到风机信号。
	过热故障。
E6	当水温连续 3 秒在 60℃(140 °F)以上时,显示屏将显示错误代码。
	请检查供水压力是否过低。
F7	正常燃烧前,主阀开路或短路;比例阀开路。
	正常燃烧中,主阀开路或短路;比例阀开路。
E8	正常燃烧中,风机转速连续五秒超出设定最高转速值。
EN	热水器设定定时器时间到("nE"设定为打开)。

#### 故障报警解除和复位方法:

如出现上述故障代码,请在确保水、气正常供应情况下,按下线控器开 / 关键。

开关热水器或断电重启热水器,或关水等故障代码消失后再开水启动热水器,即可恢复 正常使用。如果上述操作不能恢复,请通知售后服务人员维修。

(15 分钟内连续开关热水器 5 次,热水器将被锁定。处于锁定状态时,无故障代码且按 开关键也无法启动。15 分钟后自动恢复正常使用。关水等水流信号消失或断电重启可立 即恢复使用。)

#### 以下情况并非缺陷:

现象	原因和处理方法
排气口冒白烟	当室外温度太低时,排出的烟雾遇到室外冷空气并凝结成白雾。
热水开太小变成冷水	热水太小不能启动热水器,水就会变冷。需要达到热水器的最小运行流量才能保证热水器稳定运行。
冬天未能提供高温热 水	水温过低,水流超过热水器的加热能力。此时请将水量适当调小。
20 分钟或 40 分钟后, 热水器突然熄灭	为了防止缺氧,部分机型号具有20或40分钟定时保护功能。请关闭水龙头并等待一段时间后再使用。
关闭热水阀,但风扇 不能立即停止	这是风机有延迟停机的功能,为了将热水器中的废气彻底排 放干净,以保证用户的安全。
打开热水阀门不能立刻出热水	从热水器到热水阀门有一段距离,因水管内有残留冷水,故需要等待一段时间,待残留的冷水流出后才能出热水。管道的距离越远,需要等待的时间越多。
整机通电后线控器无响应	打开热水器机箱门确定机箱内开关已打开并且保险丝完好。 如保险丝烧断,请更换相同规格的保险丝。(保险丝: 10A 125V)

# 7.0 保养

**注意**:只能由授权人员进行保养服务,不得改装设备。

为了您能更安全、舒适地使用该设备,我们建议您每月进行定期检查和保养。保养时请断开电源,待机器冷却后再进行保养。保养时请不要拆卸燃气通路及安全装置。因机器内部有电子零件,保养时请注意避免水渗入到机器内部。请不要拆掉机器外壳,以免造成故障。

## 7.1 日常检查

- · 进气格栅、排烟口等处是否有尘土、杂物堵塞。
- · 热水器外观是否有异常。
- · 整机运行过程中是否有异常的响动。
- · 检查水、气有无泄漏。
- · 当发现积碳时,应立即通知售后服务商进行维护。维护人员拆下燃烧器将喷嘴朝下, 使用毛刷清除焦炭,或更换新的燃烧器。

# 7.2 维护说明

- · 定期用抹布清理热水器外壳上的灰尘,请不要用化学洗剂和挥发性溶剂,以免外壳变色。
- · 定期清理进气格栅、防尘滤网、排烟口上的灰尘,以保证进气和排烟通畅。进气滤网 装在进气格栅背面,需要开机箱门,拧掉四个手拧螺钉,取下进气滤网,用清水清洗 干净后再装回原处。
- · 关闭热水器进水,卸下热水器背部的进水管,将进水接头滤网清洗干净,保证水路通畅, 再将进水管接回去方可重新使用热水器。
- · 定期排放房车系统中的水,并用经过认可的除垢溶液冲洗热交换器。(具体请参考房车供应商提供的说明书)
- ・使用拧干的湿布擦拭显示屏。不要使用汽油或油脂性洗涤剂,以免引起变形。
  - · 保持设备区域清洁,不含可燃物质、汽油和其他易燃蒸气和液体。
  - · 如果发生过热或气体供应无法关闭的情况,请手动关闭气体控制阀。
  - · **小心**: 维修控制器时,在断开连接之前标记所有电线。接线错误可能导致操作不当 和危险。维修后验证操作是否正确。

服务中心:		
地址:		

## 7.3 设定最小热负荷

#### 方法 1:

- · 插电后,显示屏显示"O"。
- ·按♥持续3秒,显示屏显示"PP"。
- ・按 🖒 显示 FA;按 🖒 显示规格:将值设置为 00。按 🖒 退出。
- ・ 按 ▲ 显示 PH; 按 ▲ 显示 PL。然后打开气体和水,热水器将以最小的热负荷运行。
- ・按 🛦 切换 PL, dH, FH, FL..... 等规格, 直至显示"qu", 然后按 🖒 保存并退出设定。

#### 方法 2:

· 将线控器上的温度设置为 35°C,如果进水温度高到足以使出水温度高于 35°C,则证明 热水器在最小热负荷下运行。

## 7.4 备件

部分	图片
平面锁	
燃气比例阀	
直流风机组件	
燃烧器	口口

部分	图片
点火针组件	
进气管总成	
进水管总成	
火排阀体连接管	
线控器	0 - * 5 v
保险丝(125V 10a)	
风压开关	

部分	图片
水流传感器	
进水温度探头	
出水温度探头	4
超温保护温控器	
防冻温控室	
控制器	
进水滤网	

# 8.0 排水和存储说明

冬季必须排干热水器中的水, 以防结冰。

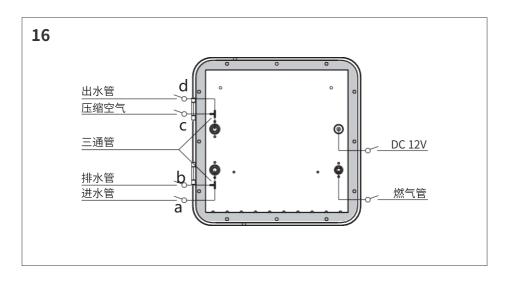
- · 如图 16 所示,关闭热水器进水阀 a,打开排水管 b。然后关闭热水器出水阀 d,打开压缩空气阀门 c。压缩空气会将水从排水管 b 排出。(**注意:**排水前需先关闭电源、燃气阀。应用较小压力的压缩空气(小于 2bar)。当热水器管道内的水排干净后即可关闭压缩空气阀门 c。切勿长时间用压缩空气排水,否则会损坏热水器内部零件。)
- · 关闭热水器电源、供气、供水系统上的压力泵。打开热水器冷热水龙头。
- · 按照房车制造商的说明排空整个水路系统中的水。

注意: 房车供水系统重新注水时,所有空气从管线中排出后再启动热水器。

注意: 排水管必须将热水器排出的水排放到房车的外部。

### ▲ 危险!

 安全阀和热水器之间不得设置阀门。出现泄压时,安全阀的排放将被引导到合适的 地方进行排放,并且排放管线中不安装减压或其他限制装置。此外,排放管的安装 应确保阀门和管道内的水可以完全排空。



# 9.0 防冻系统

请在前往寒冷地域前,做好防冻措施。因受冻导致热水器受损,热水器不在被保修范围内。防冻方法如下:

- · 排水防冻。适用于较长时间不使用该机的情况。(有关具体操作,请参阅"**排放和 存储说明**")
- · 添加房车制造商推荐的防冻剂防冻。
- · 启动防冻功能防冻。打开电源开关和燃气阀,关闭进水阀时热水器系统将默认进入 防冻模式。(确保房车内有足够的燃气可供使用)

当热水器内水管温度低于  $6\pm1^{\circ}$ C(43 °F  $\pm2^{\circ}$ F)的时候,线控器显示 "**Fd**"字符,机器启动点火并以一定负荷运行,整机运行工作 5S 后自动关机或 2S 内热水器内水管温度达到  $32\pm1^{\circ}$ C(90 °F  $\pm2^{\circ}$ F)时自动关机。关机后等待 3min,热水器再次自检,当温度低于  $6\pm1^{\circ}$ C(43 °F  $\pm2^{\circ}$ F)或防冻温控闭合时又开始运行,如此循环。

在启动防冻功能过程中,出现故障时,则报告相应故障以及显示对应代码。过 15min 后系统自动清除故障代码,若仍满足防冻启动条件,则再次启动防冻功能。

# 10.0 保修须知

尊敬的用户:感谢您使用我公司产品,我公司将按照《中华人民共和国消费者保护法》的相关规定为您提供优质的服务。

- 为确保您的利益,请仔细填写保修卡。此保修须知仅适用于我司燃气热水器产品。
- · 凡购买我司产品的用户,如产品因质量问题发生故障,可凭有效购买证明,到我司进行保修,我公司各产品保修期限为(以购机证明开具日期起计算):强排机保修一年,终身维修。
- · 请勿用于商业用途,否则会缩短产品的使用寿命。如果用于商业用途,即使产品在 保修期内我们也将收取维修费用。
- · 以下情况不在免费保修服务范围之内,我公司可向您提供产品有偿服务。

- a. 超过我公司规定的三包有效期, 经修复仍可继续使用;
- b. 由于运输、保管不善等用户自身的原因而损坏或未按照说明书要求进行操作而损坏的产品;
- c. 未经我公司许可, 自行拆动或维修、经非本厂保修点修理后的产品;
- d. 没有有效购机证明的产品;
- e. 有效购机证明经涂改的产品;
- f. 由于电压不稳定或超出正常电压范围(DC 12V),或电源线路安装不符合国家电器 安装要求而造成损坏的产品;
- g. 此说明书提到的不宜使用的以及因使用方法不当而造成损坏的产品。
- · 根据国家相关标准规定,人工煤气型燃气热水器使用年限6年,天然气、液化气机型 热水器使用年限为8年,如果产品超过了国家规定的使用寿命,发生故障时,我公司 不再提供相关修理服务,请参照国家相关废旧家电报废规定或政策对产品进行更新换 代,旧机应进行报废处理,不得再流向市场销售,以免引起安全事故。

# 11.0 包装清单

序号	物品	数量	备注
1	燃气热水器	1台	
2	使 用 说 明 书 (含保修卡)	1本	
3	线控器	1 个	
4	螺钉 ST5×25	11 个	
5	螺钉 ST4×25	2个	

# 12.0 保修卡

<b>A</b> 11
<b>ARANA</b>

### 保修卡

客户姓名	条形码	пчила
产品名称		
产品型号		
购买日期		请关注微信公众号

#### 警告!为了您的安全,请确保您的安装条件符合以下要求:(仅适用于热水器产品)

- 热水器的供电电源必须可靠接地,并配有漏电保护装置,防止电路意外漏电。
- 电源插座、接头易浸水,请使用防溅电源插座,将接头做好防水处理。
- · 该产品应在房车上使用,禁止在室内使用。燃烧的废气必须排放到车辆外部, 以防止一氧化碳中毒。
- · 燃气管路,水路必须可靠安装,无泄漏。防止因泄漏产生危害。
- 热水器的安装应符合当地法律法规。

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本保修卡请用户妥善保管,以做维修凭证。 全国统一服务电话: 400 110 1890 阿雷纳科技(深圳)有限公司 ARANA Technology (Shenzhen) Co., Ltd.

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Thanks for choosing **ARANA** RV instantaneous gas water heater. Please read the instructions carefully before installation or first use of the device and store it in a place where all users could find it for easy reference. If the device 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

## **A** DANGER!

Please observe the safety warning information and operating safety instructions in this manual to avoid possible injury or death. Failure to comply with these warnings and safety guidelines can result in fire, explosion, and even death.

## 2.0 Safety instructions

- Please only install it in recreational vehicles (RVs).
   RV is a tourist caravan, or motorhome with its own power, gas and water supply. An RV can be selfpropelled or towed.
- To prevent fire or explosion accidents, do not place flammable, explosive and volatile articles nearby the water heaters and flue exhausted pipe.
- During operation of the water heater and after use, the temperature of the flue exhaust pipe and the surrounding components is high. Please do not touch any of it with your hands to avoid scalding.
- In the shower or bath, in order to prevent scalding, you should firstly test the water temperature by hand, and then use it after confirming it is suitable for shower.
- Do not modify the water heater in any way. Selfmodification is dangerous and will void the warranty.
- When the water heater is not used for a long time, in order to prevent hydro block of the water heater from freezing and leaking, it shall be drained, and turn off the water inlet valve, turn off the gas as



well as the power supply. When the environment temperature is lower than 0° C, it must be drained of water .Or turn on DC 12V the power supply and open the gas valve to start anti-freezing Gas Inlet function, (For details, refer to the relevant section of the manual.)

- During use, please perform regular maintenance as instructed in this manual. Please regularly check if the exhaust venting pipe and air intake port have any blockage, accumulation of snow, ice, insect nestsor dirt. Make sure the water heater can draw in clean air and the exhaust gas produced by combustion can be discharged smoothly.
- · Water heaters are used only for the supply of hot water and cannot be used for other purposes to prevent accidents.
- Do not use the battery charger to power or test the water heater. The on-board power supply used by the vehicle-mounted gas water heater must be power supply complying with class 2 safety-isolated. Please use a qualified power supply to avoid damage to the water heater.
- · Do not modify the positive grounding system of the water heater.
- Do not test the water heater with high voltage power unless the water heater power switch is turned off.
- Do not use a water heater while the vehicle is in motion. Do not use the water heater while the vehicle is refueling, and turn off the water heater.
- Pay attention to protecting the surrounding buildings from hot exhaust fumes.
- Do not connect the water heater to the exhaust system of other appliances.
- · Make sure the bottom of the water heater is installed parallel to the horizontal plane. When using a water heater, choose a flat place to park the vehicle.
- Do not use accessories other than ours.

#### ▲ DANGER! WHAT TO DO IF YOU SMELL GAS?

- · Evacuate all personnel to leave the vehicle.
- · Turn off the gas supply.
- Do not use any electric appliance or telephone on the vehicle.

- · Do not start the vehicle's engine or generator.
- · Contact the nearest authorized service provider or gas supplier for repairs.
- If you cannot contact an authorized service provider or gas supplier, contact the nearest fire department.
- Do not open the air supply until the gas leak is repaired.

## A DANGER! PROHIBIT USE CASES!

- · Do not use in a watery environment.
- · It is prohibited for indoor heating.
- · It is prohibited to use in mobile homes.
- It is prohibited to use in food trucks or roadside food carts.
- It is prohibited to use in construction trailers.
- · Not to be used as a pool heater.

## 3.0 Function introduction and explanation

The water heater is simple and convenient to operate. The microcomputer intelligent control system controls the whole process of the water heater. Press the key to start the water heater and set the required temperature. After the microcomputer intelligent control system detects the qualified water flow, it starts the ignition device. After that, the gas valve is turned on to light the gas burner, and then the user can enjoy a steady stream of constant temperature hot water. The microcomputer automatically detects the entire process, safely and reliably. In case of failure, the microcomputer system will automatically shut down the gas to prevent accidents. The water heater is a forced exhaust system. After the water heater is turned on, the air outside will pass through the air intake grill, enter the combustion chamber after the dust-proof net, and the flue gas or air mixture is discharged outdoors.

• **Digital constant temperature system:** microcomputer control system, which constitutes the "computer" of the whole heater, controls the water, electricity,



and gas of the water heater in a coordinated manner, and controls the output water temperature to the selected temperature.

- Low water pressure startup: Low water pressure at startup and it will be easier to use.
- **Flameout protection:** When the water heater accidentally flames out during use, it can automatically cut off the gas to ensure that the gas will not leak.
- Speed changing and wind resistance function: When there is a blockage of
  the flue or the exhaust is blocked, the built-in microcomputer system will increase
  the running speed of the fan and eliminate the generation of harmful gases. When
  the speed reaches the predetermined maximum speed, the microcomputer
  system will issue the cease-gas and cease-fire instruction to effectively safeguard
  the heater and occupants.
- Water and gas linkage control: When the water supply is interrupted or the water outlet valve is closed, the water heater will automatically stop the combustion and shut down.
- Outlet water temperature display: with outlet water temperature display.
- Frost protection function: When the temperature of the water pipe in the water heater is lower than  $6\pm1^\circ$  C (43° F $\pm2^\circ$  F), the line controller will display "Fd" character, the machine will start ignition and run with a certain load, the water heater will automatically shut down after the whole machine runs for 5 seconds. When the water temperature in the working water heater reaches  $32\pm1^\circ$  C (90° F $\pm2^\circ$  F), it will shut down automatically.

After shutdown, wait for 3 minutes self-testing. When the temperature is lower than  $6\pm1^{\circ}$ C (43° F $\pm2^{\circ}$ F) or antifreeze thermostat control stops working, it will start to run again.

In the process of starting the antifreeze function, when a fault occurs, the corresponding fault is reported and the corresponding code is displayed. After 15 minutes, the system automatically clears the fault code. If the antifreeze start condition is still met, the antifreeze will automatically start again.

 Fault auto-diagnosis and fault code display function: The intelligent microcomputer can in real-time monitor various safety devices; gas proportional valves and other components; find faults and if necessary, safely shutdown.
 Advanced fault code display function, is easy to use and maintain.

# 4.0 Installation instructions

# **A** DANGER!

- This product is not suitable for DIY installation.
- Installation and maintenance must be carried out by a professional person, service company or gas water heater suppliers.
- Improper installation, commissioning, alteration or maintenance will lead to property damage, personnel injury or death.
- The product must be installed and repaired by an authorised installation service company, otherwise we will not be responsible for any accidents caused by improper installation or maintenance and warranty will be void.

# **A** DANGER!

 Any parts removed from this model, please keep them in places where children cannot reach them, so as to avoid personal injury.

### **A** DANGER!

NOT TO BE USED AS A POOL HEATER.

The installation must be done in accordance with the information supplied in this manual. All other relevant national, state and local regulations must also be adhered to including (but are not limited to):

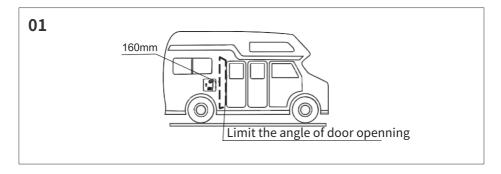
- Australian Standard AS3500.1 Water Services.
- Australian Standard AS3500.4 Heated Water Services.
- Australian Standard AS3000 Electrical Installation.



- Australian Standard AS/NZS5601 Gas Appliance Installation.
- · Local Water, Gas & Electrical Authority Regulations.
- Municipal Building Codes including local OH&S requirements.

The installation must conform to one or more of the following as applicable:

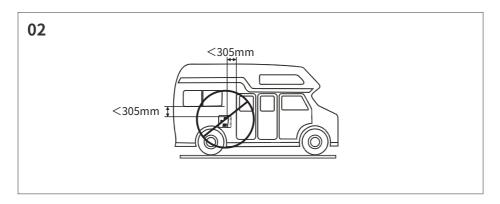
- The following instructions are applicable to the Fogatti RV gas water heater.
   If you have any other questions about a particular installation or application,
   please consult our company or the company authorised by us for installation and
   maintenance services.
- The water heater must be properly installed to ensure the air flow is free of air flow at any time when the air inlet louvers and exhaust pipes are in place.
- During any stress test of the system, the device should be disconnected from the air supply piping system.
- Do not install this product under any overhanging structure such as awnings.
- This product should be installed in any place where the door will not be covered or blocked.



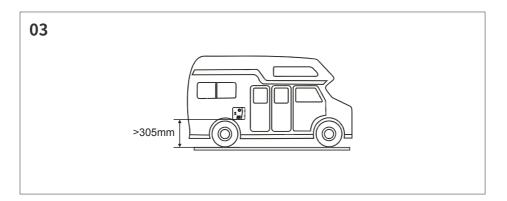
- If the wall is not fire-proof, the gap between the back of the product and the surrounding flammable structure and combustible materials must be filled with heat-proof and flame-resistance materials.
- The equipment should not be installed on vinyl panel, due to the difference in the vinyl panel.

ΕN

• Do not install at the position when the water heater venting pipe is less than 305mm from the door.



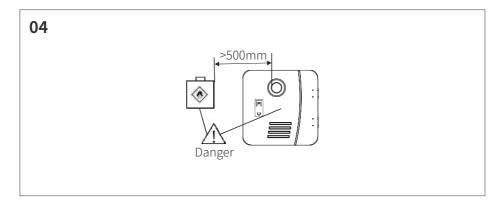
• The water heater should be installed at a higher level than 305mm above the ground.



- Do not install the water heater or other electrical appliances in the exhaust port facing an area covered with awning, canopy or any other enclosure.
- The water heater can be installed in the trailer or under the retractable awning, but the awning must be well ventilated.
- The water heater must be installed uprightly, otherwise it will affect the normal use of the water heater.



- When the water heater is installed, it should be reliably grounded.
- Clean any dirt in the supply pipes before they are connected to the heater.
- You must install a filter that is easily accessible for cleaning in the water supply line/s after the pump and before the heater. Failure to do so voids warranty.
- Valvess should be installed in gas pipe, inlet pipe and outlet pipe for easy maintenance.
- Check the gas leakage and water leakage after installation, make sure there is no any gas and water leakage.
- The minimum distance from the exhaust outlet to the flammable surface should be >500mm.



• The gas pressure range for the normal operation of the water heater is that the maximum inlet pressure cannot exceed 3.3 kPa (13" w.c.) and the minimum pressure cannot be lower than 1.99 kPa (8" w.c.). Out of range will not work normally.

If a relief valve discharges periodically, this may be due to thermal expansion in a closed water supply system. Contact the water supplier or local plumbing inspector on how to correct this situation. Do not plug the relief valve.

# **A** DANGER!SHARP EDGES CAN CAUSE CUTS AND INJURY!

 Always wear protective gloves to avoid injuries from sharp edges during installation work and while handling the appliance.

# **A** DANGER!

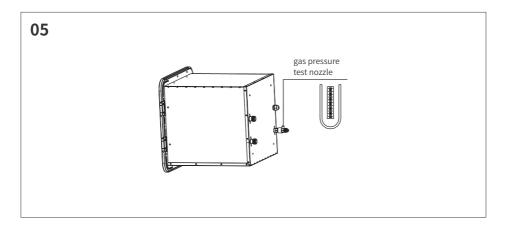
• Before installing the water heater, a water mixing valve must be installed. At the rated setting, the equipment to provide water is not more than 51°C. When water flow is small or high inlet water temperature, water heater will heat the water to the likely above 51°C. At this moment, please open the mixing valve to provide you with a comfortable shower temperature.

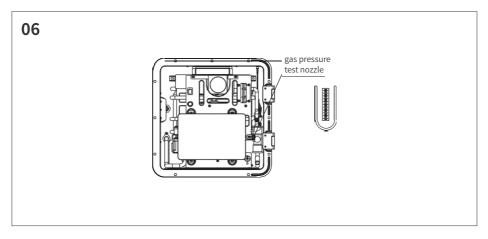
# 4.1 Model and specifications

Model	FS06B1
Gas intended for	Universal LPG
Total nominal gas consumption	12kW
Number of injector	6
Injector size	0.91MM
Max. working water pressure	0.8MPa
Min. working water pressure	0.1MPa
Nominal test point pressure	2.8kPa
Nominal manifold pressure	1.3kPa
Electrical power	12VDC, <10amp
Water heating capacity (temp rise 25K)	6L/min
Maximum water temp	51°C
Heat output	10.8kW

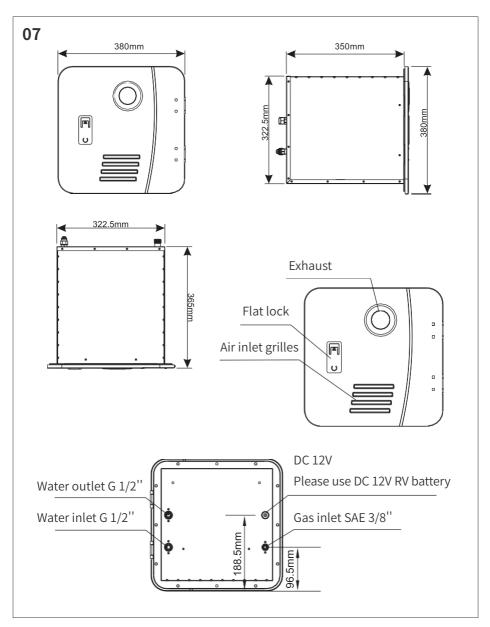
#### Gas pressure test position

- Gas inlet pressure test: Install a joint with a pressure measuring nozzle at the inlet joint of the water heater. The size of the pressure measuring nozzle requires a cylindrical outer diameter of 6 mm and an inner diameter of not more than 1 mm. The gas pressure is measured from the pressure measuring nozzle. See FIG.05.
- Gas manifold inlet pressure test: open the door, remove the pressure measuring nozzle sealing screw, and measure the gas pressure from the pressure measuring nozzle. See FIG.06.



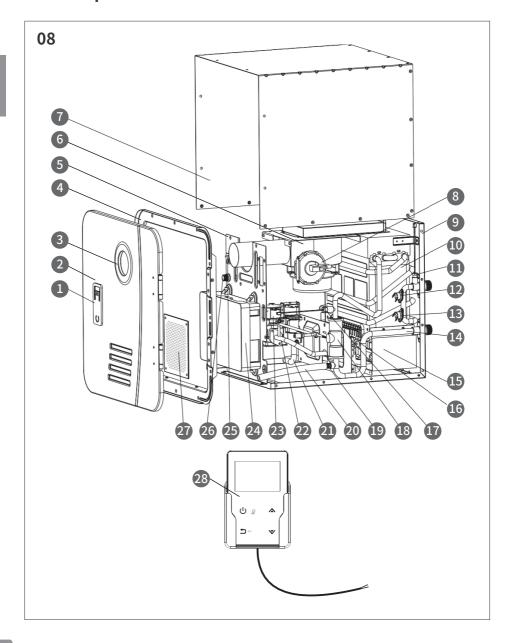


# 4.2 Appearance





# 4.3 Main parts name



NO.	Name	NO.	Name
1	Flat lock	16	Ignition pin
2	Front panel	17	Water inlet temp probe
3	Decorative ring	18	Water flow sensor
4	Blind flange	19	Relief valve
5	Fixing plate	20	Drain pipe
6	Fan Volute	21	Gas inlet assembly
7	Housing upper plate	22	Connecting pipe
8	Wind pressure switch	22	for burner and valve
9	Housing nether plate	23	Gas proportional valve
10	Heat exchanger	24	Controller
11	Water outlet temp probe	25	ON/OFF switch
12	Thermostat	26	Fuse Box
13	Anti-freezing thermostat	27	Anti-dust mesh
14	Water inlet pipe	28	Wire controller
15	Burner		

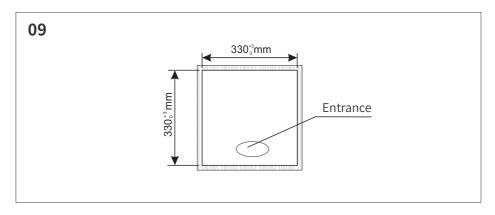
## 4.4 Installation steps

#### Select the installation location on the RV before installation.

- Do not install the water heater in the RV aisle.
- It should be installed on the exterior wall of the RV.
- · The exhaust port should face outside the RV.
- RV hot water heater should be installed on a solid, or on a non-combustible frame.
- In order to install a water heater firmly, the unit's bottom should be supported by a non-combustible floor or frame.
- If the surrounding of the opening is a combustible material, use a flame-retardant insulating material such as heat-insulating felt or heat-insulating board to completely separate the back surface of the water heater from the combustible surface.
- And the minimum thickness of the filling material must be greater than 20mm.

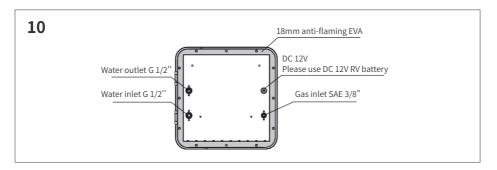


- The housing connection gap behind the water heater should be sealed with a high temperature sealant during installation to isolate it from the inside of the RV. In this way, the burning air does not come from the inside of the RV, but from the outside of the RV and the exhaust gas generated by the combustion is discharged outside the vehicle.
- Cut a hole sizing 330x330 mm.
- The opening depth should be sufficient to accommodate the gas pipe, wire, and water pipe when the water heater is pulled out of the hole.
- And at the bottom or back of the hole, please reserve space for gas inlet, inlet, outlet pipe, power line and other channel holes.
- Reserve extra gas pipe, wire, pipe length should be greater than the opening depth 1.5 times for maintenance and testing.
- The perimeter of the hole should ensure sufficient strength to fix the water heater. See FIG.09.
- The hole can be strengthened by adding support frames under the water heater bottom in order to ensure water heater does not make any damage on the wall of the RV.



Correctly connect the G1/2" cold and hot water pipe to the back of the water heater.

- Correctly install the SAE 3/8" liquefied gas pipe on the back of the water heater.
- Correctly connect the volt power cable to the power cable on the back of the water heater.
- Red is positive, black is negative; connect the line controller with the two blue lines
  on the back of the water heater, it is not necessary to divide the positive and negative
  poles; pay attention to the water pipe, trachea, and wires on the back of the water
  heater to leave enough length to pull the water heater from the mounting hole. See
  FIG.10.
- Installation of wiring and wired controller must be installed by professional person, service company or gas water heater suppliers.



# **A** DANGER!

This water heater is designed for RV users. The working voltage is DC 12V RV battery and the gas source is propane.
 Excessive force will damage the water heater's cold water and hot water connections. When installing the gas joint, tighten the joint with two wrenches to

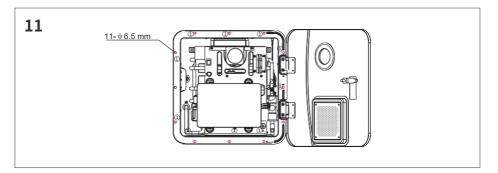
# The water heater flange cover is glued with 18mm wide single-sided adhesive anti-flaming EVA.

- The paste should be flat and connected seamlessly. (Be careful not to be too thick)
- Then press this product into the opened hole.

avoid damaging the water heater joint.

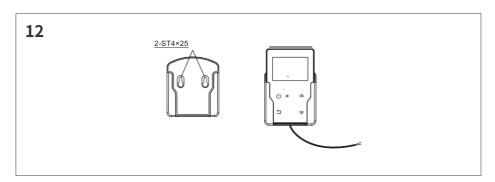


 Secure the water heater to the RV body with 11 screws (M6 x 15mm). Air and water should be isolated from openings to prevent entry into the interior of the RV. See FIG.11.



#### Choose a convenient location to place the Wire Controller.

• The connection between the line controller and the water heater should be reasonably laid out according to the specific environment. See FIG.12.



### 4.5 Checking steps

### Confirm there is no leakage happening between any gas connections.

- For example, put soapy water on gas connection, to see whether there are bubbles.
- If there are no bubbles, it means noleakage; if bubbles occur, please check connections.

EN

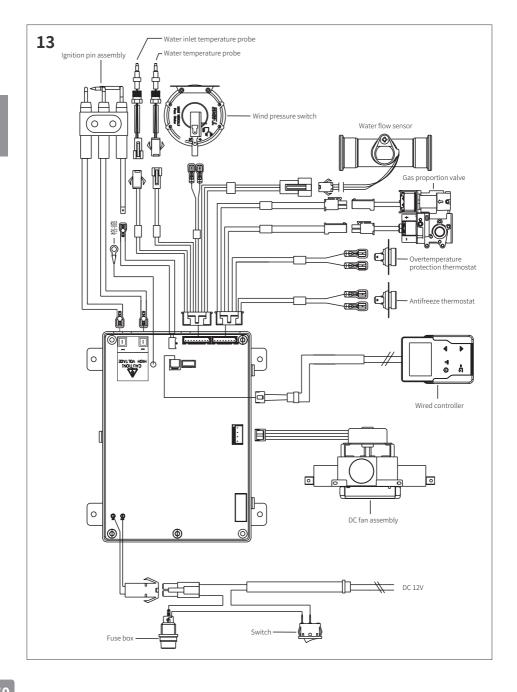
Confirm there is no water leakage.

Installer shall check the operation of water heater, after being sure there are no leaks happening between any gas connections; for checking steps refer to Page 50.

- The minimum distance from the smoke outlet to the flammable surface should be >500mm
- Do not install the water heater or other electrical appliances in the exhaust port facing an area covered with awning, canopy or any other enclosure.
- The water heater can be installed in the trailer or under the retractable awning, but the awning must be well ventilated.
- This RV water heater is intended to be used with a gas cylinder not less than 9Kgs conforming to local code.

Cylinder	Approximate size	Dimensions
EUGE -	9kg(8.5kg)	480mm height 310mm diameter

# 4.6 Product wiring diagram



# 5.0 Operation instructions

**Note:** DO NOT SPRAY AEROSOLS IN THE VICINITY OF THIS APPLIANCE WHILE IT IS IN OPERATION

Note: DO NOT USE OR STORE FLAMMABLE MATERIALS IN OR NEAR THIS APPLIANCE.

Note: DO NOT PLACE ARTICLES ON OR AGAINST THIS APPLIANCE.

Note: DO NOT MODIFY THIS APPLIANCE.

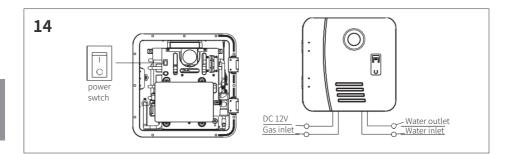
# **A** DANGER!

- Before installing the water heater, a water mixing valve must be installed. At the rated setting, the equipment to provide water is not more than 51°C. When water flow is small or inlet water temperature is high, water heater will heat the water to the likely above 51°C. At this moment, please open the mixing valve to provide you with a comfortable shower temperature.
- Prior to first operation, please remove any packing protection, like plastic film, plastic bag, plastic sealing tapeor any packing material can block the outlet of water heater.

The installer must provide an installation certificate that the water heater is installed correctly before the initial use, carefully check that the connections are properly connected and leak free. After confirming it, please follow the below steps:

## 5.1 The steps for starting the unit

- · Confirm that the power switch in the water heater is turned on; See FIG.14.
- After confirming the power is on, press the wire controller key " 💍 ";
- Turn on the water inlet valve and gas valve at the gas cylinder;
- Turn on the water outlet valve (hot water tap), the water heater is ignited, and hot
  water flows out.



#### **A** DANGER!

- · Children and juveniles are not advised to operate the water heater by themselves unless they are accompanied by a guardian.
- The door shall be kept closed during operation.

The gas valve will be cut off after power off or power interruption. The user shall close the gas at the gas cylinder when power off or power interruption happens during operation. Please check the electrical connections of 12V DC before next operation.

- TO BE INSTALLED ON FIRE RESISTANT MATERIAL
- DO NOT OPERATE THIS APPLIANCE BEFORE LEAK CHECKING HOSES AND GAS. CYLINDER CONNECTION.
- SUITABLE ONLY FOR INDOOR INSTALLATION.

#### **▲** DANGER!

- For continued safety of this appliance it must be installed, operated and maintained in accordance with the manufacturer's instructions.
- Before installing the water heater, a water mixing valve must be installed. At the rated setting, the equipment to provide water is not more than 50°C. When water flow is small or high inlet water temperature, water heater will heat the water to the likely above 50°C temperature. At this moment, please open the mixing valve to provide you with acomfortable shower temperature.
- · Children are not allowed to operate this water heater without the guidance of

their parents or guardian.

 Any parts removed from this machine should be kept in a place where children are not accessible.

# **A** DANGER!

- **DO NOT** OPERATE THIS APPLIANCE BEFORE READING THE INSTRUCTION BOOKLET.
- DO NOT PLACE ARTICLES ON OR AGAINST THIS APPLIANCE.
- **DO NOT** STORE CHEMICALS OR FLAMMABLE MATERIALS, OR SPRAY AEROSOLS NEAR THIS APPLIANCE.
- **DO NOT** OPERATE WITH PANELS, COVERS OR GUARDS REMOVED FROM THIS APPLIANCE.

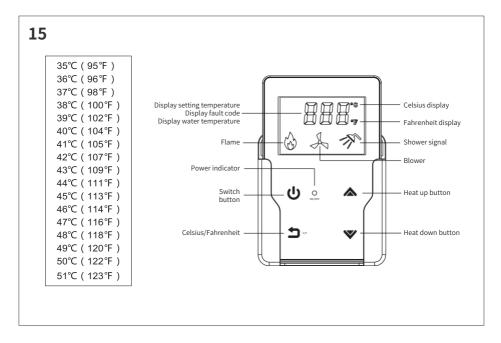
#### 5.2 Wire controller instructions

- The wire controller emits a buzzer sound "B,B,B" when the power is turned on.

  The display shows the gas source code, and this code will only be displayed for 3 seconds. The wire controller's indicator light is on and the back light of power switch button is on.
- After pressing the power button, the fan, shower, flame and outlet temperatures are displayed in real time according to the operating status.
- Set the temperature to be what you want, the setting temperature will flash for 5 times, then it will automatically switch to display the water temperature.
- Press " **1** " to switch Celsius/Fahrenheit degrees.
- In the event of a fault alarm, the display will change to display fault code.
- The buzzer sound "B" occurs when the system is powered on or is operating effectively. When fault alarm occurs in the system, the buzzer sound "B, B, B" is issued continuously for 10 times, and every one second for each sound.
- After finishing using the water heater, please press " 🖒 " to turn off the heater ( water and gas should be turned off at the same time).

# 5.3 Steps of setting water temperature

- The setting range of the outlet water temperature of this machine is 35°C ~51°C; Designed for operation at outlet water temperature(s) not in excess of 51°C (123°F).
- Each time you press the " 
   \( \bigcap \) key, the temperature will rise by 1 °C , and the temperature rises by 1 °C every 0.25 seconds while you keep pressing this key continuously.
- Each time you press the "▼" key, the temperature will drop by 1 °C and the temperature drops by 1 °C every 0.25 seconds while you keep pressing this key continuously.



# **A** DANGER!

• Do not store or use gasoline or other flammable vapours and liquids in the vicinity of this or any other appliance.

# 6.0 Fault judgment and processing

Fault treatment: When the water heater fails, the display will show the fault code, and the buzzer will continuously issue alarms "B, B, B". Please follow the table below for the corresponding treatment.

Error code	Failure description and treatment
E0	The outlet temperature probe is open or shorted.
E1	Ignition failure, no ignition. Please check whether the gas is
	supplied normally and check it before use.
E2	Unexpected flameout failure, accidental flameout during work.
E3	The thermostat malfunctions, and the temperature control is
	detected during the start-up or water heater operation.
E4	The inlet temperature probe is faulty and the inlet temperature
L4	probe is open or shorted.
E5	Fan failure, no fan signal detected during start-up or water heater
LJ	operation.
	Over-temperature fault.
E6	The display will show faulty code when the water temperature
	remains continuously for 3 seconds at more than 60°C (140° F).
	Please check if the water supply pressure is too low.
	Before normal combustion, the main valve opens or is shorted;
E7	the proportional valve opens.
LI	In normal combustion, the main valve opens or is shorted; the
	proportional valve opens.
	Wind pressure switch failure, when the power is turned on for 5
E8	seconds, the wind pressure switch is closed or the wind pressure
	is continuously disconnected for 2 seconds.
EN	Water heater set timer time to ("nE" is set to open).



Fault alarm release and reset method:

If the above code appears, please check that all moisture is normal, press the on/off switch or power off to restart.

(when you start and or turn on the water, press the "on/off" switch within 15 minutes and then press the "on/off" switch 5 times (the fan starts for 5 times), the water heater will lock and cannot start. After the icon disappears or it waits for 15 minutes, it can be automatically unlocked (reset). The water heater returns to normal use. If the above operations cannot be returned to normal use, please inform the after-sales service personnel.

#### It is not a failure when the following conditions occur:

Example	Reason and handling method
White smoke at exhaust	When the outdoor temperature is too low, the exhausted smoke encounters outdoor cold air and condenses into a white mist.
Water is not heating	If the water flow is too low, the water will become cold. A minimum water flow of 1 gallon per minute is required to ensure the stable operation of the water heater.
Water not hot enough	The inlet water temperature is too low and the water flow exceeds the heating capacity of the water heater.  Please adjust the amount of water appropriately.
After 20 minutes or 40 minutes, the water heater suddenly goes out	In order to prevent oxygen deprivation, some models have 20 or 40-minute timing protection. Please turn off the tap and use it after a while.
Close the hot water valve, but the fan cannot stop immediately	This is the function of delaying the shutdown of the fan, in order to completely discharge the exhaust gas of the water heater to ensure the safety of the user.

Example	Reason and handling method
The hot water valve cannot open hot water immediately	From the water heater to the hot water tap there is a distance, because there is cold water left in the water pipe, it will take some time to use the original cold water before the hot water. The longer the pipeline is, the more time it takes.
After the machine is powered on, the wire controller does not respond	Open the door of the water heater door and make sure the switch inside the door is on and the fuse is intact. If the fuse blows, replace the fuse of the same size. (Fuse: 10A 125V)

# 7.0 Maintenance

**Note:** SERVICE SHALL BE CARRIED OUT ONLY BY AUTHORIZED PERSONNEL AND THE APPLIANCE SHALL NOT BE MODIFIED

For your comfort and safety, we recommend to check and maintain the product monthly. Disconnect the power supply and allow the unit to cool down before performing maintenance. Do not disassemble gas passages and safety device during maintenance. The unit has some electronic components inside. Please do not open it, and avoid using any type of liquid to clean the electronic components.

# 7.1 Daily inspection

- · Check the air intake grill and exhaust vent for dust, to avoid blockages.
- · Check the unit for unusual appearance.
- · Check the unit for noise during operation.
- · Check water and gas leakage.
- · When carbon deposits are found, the heater should be promptly taken to the after-

sales service provider for maintenance. The serviceman will remove the burner with the jets facing down, using a bristled brush to remove the carbon.

### 7.2 Maintenance instructions

- · Clean the unit regularly. Do not use chemical lotion and volatile solvents.
- To ensure better performance, please clean the air intake grill, dust filter and exhaust port regularly. This ensures there is no obstruction of the flow of combustion and ventilation air.
- To remove the air intake filter: open the panel, remove four thumbscrews. Clean with water.
- Turn off the water inlet, remove water inlet pipe, clean the filter and reinstall.
- Drain water from the RV regularly and flush the heat exchanger with an approved detergent.
- Wipe the display with a damp cloth. Do not use gasoline or grease detergents to avoid shape changes.
- When travelling on dusty roads please check and clean the interior of the water heater and blow excess dust away carefully using a compressed air gun. Excessive build up of dust can affect the operation of this unit, it is your responsibility to keep the units interior clean.
  - Keeping appliance area clear and free from combustible materials, gasoline, and other flammable vapours and liquids.
  - $\boldsymbol{\cdot}$  There is a hot water scald potential if the thermostat is set too high.
  - Should overheating occur or the gas supply fails to shut off, turn off the manual gas control valve to the appliance.

**Caution:** Label all wires prior to disconnection when servicing. Wiring errors can cause improper and dangerous operation. Verify proper operation after servicing.

# 7.3 The way to set minimum heat load

Method#1:

- · Plug in electricity, it will show "O".
- Press ♥ for 3 seconds,, it will show "PP".
- Press  $\circlearrowleft$  to show FA; Press  $\circlearrowleft$  to show specifications: set the value to be 00. Press  $\circlearrowleft$  to exit.
- Press to show PH; Press to show PL. Then please turn on the gas and water.

  Then water heater will run in minimun heat load.
- After testing above, press **\( \)** to switch specifications like PL, DH, FH, FL.....till it shows "qu", then press **()** to save and exit setting.

#### Method #2:

• Set the temperature on wired controller to be 95 °F, then if the water inlet temperature is high enough to make outlet water temperature higher than 95 °F, it proves that the water heater is running in its minimum heat load.

#### 7.4 Parts

Parts	Photo
Lock	
Gas control valve	
Draught fan assembly	
Burner	口.口

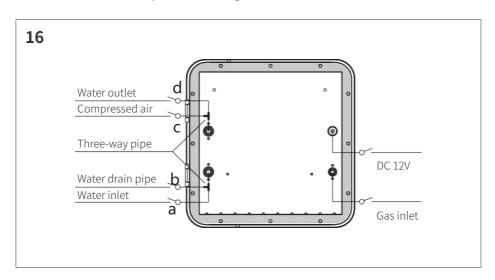
Parts	Photo
Ignition pin assembly	
Gas inlet assembly	
Water inlet assembly	
The connection pipe of burner and valve	
Wired controller	0 _ ^
FUSE (125V 10A)	
Wind pressure switch	

Parts	Photo
Water flow sensor	
Inflow temperature probe	
Water temperature probe	4 American A
Overtempera-ture protection thermostat	
Antifreeze thermostat	
Burner controller	
Water inlet filter	

# 8.0 Drain and store instructions

Water must be drained to prevent freezing during winter.

- See FIG.16, the water inlet connector is connected to the water outlet pipe with switch valve by a tee fitting. The water outlet connector is connected to the compressed air with switch valve using a tee fitting. Turn off water inlet A, open water outlet B before draining. Turn water outlet D, open the compressed air valve C. Compressed air blows water out of the drain. (Note: Turn off the power and gas valve before draining. Apply compressed air (less than 300kPa). Close the compressed air valve when the pipe is dry. Blowing water for a long time will cause damage to the internal parts of the water heater.
- Turn off the power supply, air supply, and pump on the water system. Turn on the water outlet tap.
- Flush the entire water system according to RV manufacturer's instructions.



**Note:** When the RV water system is refilled with water, only start the water heater after air is purged from the system.

**Note:** Water must drain out of the RV through the pipe.

# **A** DANGER!

 No valve is to be placed between the relief valve and water heater. The discharge from temperature and pressure relief valves will be via the supplied discharge hose.

Do not obstruct the discharge hose.

# 9.0 Antifreeze system

Water heaters must be protected before travelling to a possible freezing environment. Freezing damage is not covered by the warranty. The anti-freezing function operation method is:

- Drain away water inside the water heater. Applicable when the unit is not in use for long period. (For specific operations, see "Drain and Store Instructions")
- · Add antifreeze recommended by the RV manufacturer.
- Start the antifreeze function to prevent freezing. Turn on the power switch and
  the gas valve, turn off the water inlet. The water heater will be on antifreeze mode
  automatically (please ensure there is enough gas in the RV).

When the water temperature in the water heater is lower than  $6\pm1^\circ$  C (43° F±2° F), the wire controller displays "**Fd**", the machine starts the ignition and runs with a certain load. After the whole machine runs for 5 seconds, the water heater will automatically shut off or when the temperature of the water pipe reaches  $32\pm1^\circ$  C (90° F±2° F) in 2 seconds, it will shut down automatically. Heater will run the test again after shut down for 3 minutes.

In the process of starting the antifreeze function, if a fault occurs, the corresponding fault is reported and the corresponding code is displayed. After 15 minutes, the system automatically clears the fault code. If the freeze protection start condition is still met, the anti-freeze will start again.

# 10.0 Warranty notice

Dear users: thank you for using our products.

The relevant provisions of the law provide you with quality services.

- To ensure your interests, please fill in the warranty card carefully. This warranty is only applicable to Fogatti RV gas water heater.
- Customers who purchase products of ARANA Technology (Shenzhen) Co., Ltd., the warranty period of each product of our company is (with the purchase certificate) (from the date of shipment): one year (12 months).
- Please do not use it for business purposes, which will shorten the service life of the product. If using it for business purpose, there is a charge even within the warranty period.
- The following situations are not within the scope of free warranty service. Our company can provide you with paid product services.
  - a. Beyond the validity period of the free warranty time, the product can still be used after repair;
  - b. Damage to products caused by improper transportation or storage of the user or failure to operate in accordance with the instructions;
  - c. Disassemble or repair the product without our company's permission, and repair the product after repair at the non-authorised service agents;
  - d. Products without valid purchase certificate;
  - e. Products that have been effectively altered;
  - f. The voltage is unstable or beyond the normal voltage range (DC 24V), or the power line installation is not in conformity with the national electrical installation standard requirements;
  - g. The specification specifies that the product should not be used or damaged due to the wrong operation method.

# 11.0 Packing list

Order	Design	Quantity	Remarks
1	Gas water heater	1 piece	
2	Instruction Manual (including warranty card)	1 piece	
3	Controller	1 piece	
4	Screw	11 pieces	

# 12.0 Warranty card



### Warranty card

User name	Bar code number
Product name	
Product model	
Purchasing date	

Warning! For your safety, please ensure that your installation conditions meet the following requirements: (applies only to water heater products)

- The power supply of the water heater must be reliably grounded and equipped with a leakage protection device to prevent accidental circuit leakage.
- Power outlet, connector may be subject to water penetration. Use a splash-proof power outlet and take care of the joints.
- Water heaters should be used on the RV. Do not use indoors. Exhaust gas must be discharged outside the vehicle to prevent carbon monoxidepoisoning.
- Gas supply and water supply must be reliably installed without leakage to prevent damage due to leakage.
- · The installation of the water heater should comply with local laws and regulations.

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