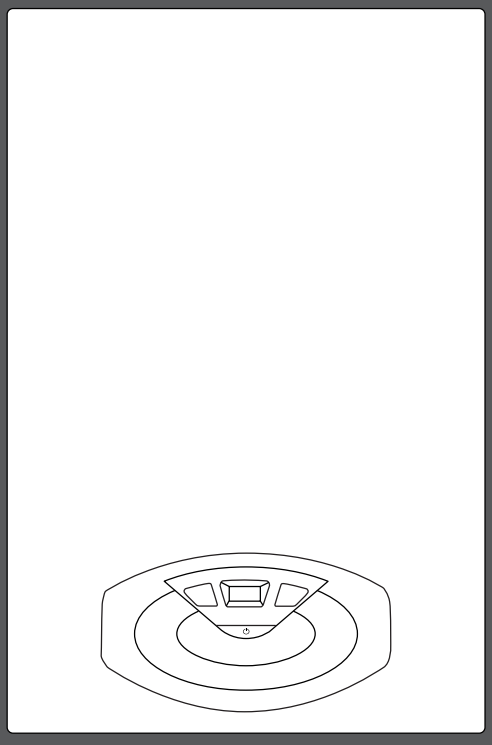
ARISTON

CLAS B

安装与维护手册

Installation and Service Instructions



壁挂式燃气采暖热水炉
内置40升储水罐

L1PB30-CLAS B 28

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目录

误使用风险警示

a) 安装不当会引起对人、畜和物的危害；
b)产品安装应严格按说明书要求和相关规定执行；
c) 只有制造商授权的代理商或技术人员才可以维修、更换零部件或整机；
d)应使用原装配件，以免降低产品的安全性；
e)应使用原配烟道，不能随意改用其它烟道，严禁用单管烟道代替同轴烟道；
f) 产品维修时涉及燃气调压阀和控制器的维修应找产品制造商；
g)不应购买经销商改装的产品，而应买生产企业的原装产品，以确保安全性；
h)安装产品时应在产品前的管道上安装燃气截止阀；
i)产品不应靠近电磁炉、微波炉等强电磁辐射电器安装；
j)严禁拆动产品上的任何密封件；
k)产品清洁时不应使用有腐蚀性的清洁剂；
l)产品严禁安装在卧室、客厅，浴室；
m)儿童和不会使用的人不应操作产品，儿童严禁玩弄产品；
n)用户自己不应动采暖安全阀和采暖水排泄阀，应由专业人员来处理；
o)产品不宜暗装；
p)维修和检查人员在产品维修后应在产品上进行标示维修和检查的结果；
q)房间的配电系统应有接地线；产品连接的开关不应设置在有浴盆或淋浴设备的房间；插头、插座应通过相关认证；
r)产品防冻功能在通电通气待机的状态起才能作用，为了避免产品或管路冻坏，在冬季长期停机时，应将产品采暖和生活热水系统内的水全部排空；或者只排生活热水，而在采暖水中加入防冻剂。

本产品适用中国国家标准：
GB25034-2101 燃气采暖热水炉

**在中国市场销售的热水炉的数据和操作以中文技术说明书为准，ARISTON保留对技术和商务报告做出改动而不作预先通知的权力。

⚠ 安装注意

热水炉的安装和第一次点火必须根据国家现行相关安装条例并且符合由当地政府和公共卫生组织规定的要求，由具备资质的专业人员进行操作。
安装好热水炉后，安装者必须确保最终用户收到相关的操作手册，并且提供所有关于如何操作热水炉和安全装置的必要信息。

本热水炉为提供生活热水和供暖服务

应当把本热水炉连接到适合于其性能和功率的生活用热水系统及供暖系统，严禁使用于与规定不同的场所。制造商不对出自不恰当、错误和不合理使用引起的损坏负责。
应当遵照现行的行业及相关标准、制造商所提供的要求而实施安装、保养以及其它任何操作。
制造商不对由于错误安装引起的人员、动物以及财产的损害负责。
热水炉用纸板箱包装运输。当打开包装时，请确认热水炉完好无损并且附件齐全。如果有问题，请联系当地供销商。
应使所有包装材料(封箱钉，塑料袋，保利龙泡沫等)，远离儿童以免造成不必要的伤害。
当热水炉出现故障或运行不良，在按复位键不能恢复热水炉功能的情况下，关闭热水炉和燃气阀门，不要尝试自行修理，应联系合格的专业技术人员。
在对热水炉进行任何维护或修理之前，请断开外部开关以切断电源。
维修需使用原装配件，并由专业人员进行操作。制造商不对擅自维修更换零件而引起的损坏、危害负责。
任何对排烟或进气管道的维修和操作，必须通过断开外部开关而切断电源，同时关闭气阀。当完成操作时，专业技术人员检查应管道和热水炉的性能。
清洁热水炉时需关闭热水炉并断开外部电源开关。清洁需使用浸湿了肥皂水的布，勿使用有腐蚀性的清洁剂、杀虫剂或有毒产品。
如果完全符合上述说明使用该热水炉，本产品将以一种安全、环保和节能的方式运行。
使用配套元件或可选配件前，请确认它们是可配套使用的。

CE 标志
CE标志确保产品符合下述欧盟质量安全标准 ：
- 2009/142/CEE–关于燃气设备
- 2004/108/EC –关于电磁兼容
- 92/42/CEE –关于能量效率
- 2006/95/EC –关于电气安全

安全守则

关键符号：

⚠ 不遵守本警告会有人生伤害的危险，在某些情况下危险非常严重。

△ 不遵守本警告会存在风险，在某些情况会危及对人、动物或财产。

⚠ **将热水炉安装在实心墙壁上以避免振动。**
运行时的噪音

在墙壁上钻孔时，请注意不要损坏线路和管道。
接触火线会引起触电。损坏燃气管道会引起爆炸、火灾或中毒。损坏水管会引起浸水。

⚠ **选择合适截面积的电缆进行电路连接。**
△ 电流通过过细的电缆会过热导致引起火灾。

△ **保护好所有连接管道和电缆以防止被破坏。**
接触火线会引起触电。损坏的燃气管道的泄漏会引起爆炸、着火或者中毒。损坏的水管的漏水会导致浸水.

⚠ **确保热水炉的安装位置或连接的任何系统都严格遵守相关安装规范。**
△ 接触到不正确安装的带电电线会引起触电。不规范的操作会损坏设备。

⚠ **使用合适的手动工具和设备（特别要确认工具没有损坏和把手是否完全固定）;正确使用工具和设备确保不会从高处掉落。使**
△ **用完毕，放回原处。**
落下的碎片或断片、吸入灰尘、电击、划伤、刺伤和擦伤引起人身伤害。落下的断片、撞击和划伤引起设备或周围事物的损坏。

⚠ **选用合适的电气设备（特别确保电源线和插头完好无损，并且确**
△ **保正确固定好旋转或往复运动的部件）。正确使用设备；勿阻塞电源线的通道，确保设备不会从高处掉落。使用后，安全地断开并且放回原处。**
落下的碎片或断片、吸入灰尘、电击、划伤、刺伤和擦伤引起人身伤害。落下的断片、撞击和划伤引起设备或周围事物的损坏。

⚠ **确保将便携式梯子安全地放置固定，当有人攀爬梯子时，它们**
△ **应是稳定牢固的并且其阶梯是完好不易滑且不摇晃的。需保证有人在一旁监督。**
从高处或缺口处（梯子意外闭合）坠落会导致人身伤害。

确保将便携式梯子安放在固定位置，且是稳定牢固的，其阶梯完好不易滑，梯子的一侧装有扶手，梯子平台上有栏杆。

⚠ 从高处坠落造成人员伤害。

在某一高度进行的所有操作时（通常高度差超过两米的位置），确保使用栏杆包围工作区域或者人员使用安全带防止坠落。可
⚠ **能发生意外坠落的区域要清空所有危险障碍物，并且有半硬的或可变形的垫子来缓冲坠落的碰撞。**
从高处坠落造成人员伤害。

确保工作区域有合适的卫生和清洁条件，包括照明、通风和稳固结构。

⚠ 撞击、绊倒等造成人员伤害。

使用合适的材料来保护设备以及工作场所邻近的区域。

⚠ 由于落下的碎片、撞击和划伤引起设备或周围事物的损坏。

适当保护并且小心操作设备。
由于电击、撞击、划伤和擦伤引起设备或周围事物损坏。

△ **在所有工作过程中，应穿着个人防护服和防护设备。**
由于触电、落下碎片或断片、吸入灰尘、电击、划伤、刺伤、擦
△ 伤、噪音和震动引起人员伤害。

妥善摆放所有碎片和设备以确保人员行动方便安全，避免形成堆积防止引起倒塌。

⚠ 由于电击、撞击、划伤和擦伤引起设备或周围事物损坏。

进行设备内的所有操作必须十分小心以免意外接触尖锐部分。
由于划伤、刺伤和擦伤引起人员伤害。

△ **在对热水炉进行内部操作后，对受到影响的所有安全和控制功能进行复位，在重新启动热水炉前确保它们能正确运行。**
气体泄漏或不正确排气引起爆炸、火灾或中毒。操作失误引起热水炉损坏或异常关闭。

⚠ **在操作前，放空所有可能含有热水的部件，如果需要，进行放气。**
烫伤引起人员伤害。

△ **根据产品说明书维护章节的介绍进行部件除垢，保证室内通风，戴好防护罩，避免混用不同产品，并保护热水炉及周围事物。**

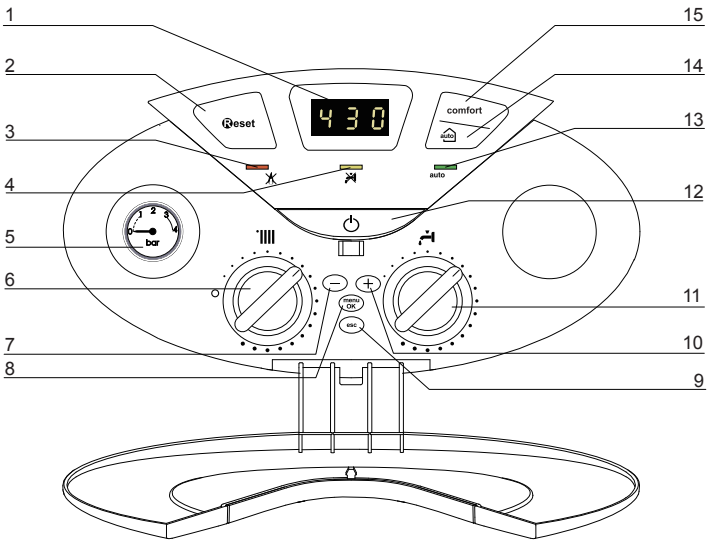
⚠ 由于皮肤或眼睛接触酸性物质，吸入或误食危险化学品引起人身伤害。由于酸性物质腐蚀引起热水炉或周围的物品损坏。

如果闻到燃气味或烟味，不要接触热水炉，切断外部电源连接，打开窗户并联系技术人员。

⚠ 由于烫伤、吸入烟尘、中毒引起人员伤害。

产品描述

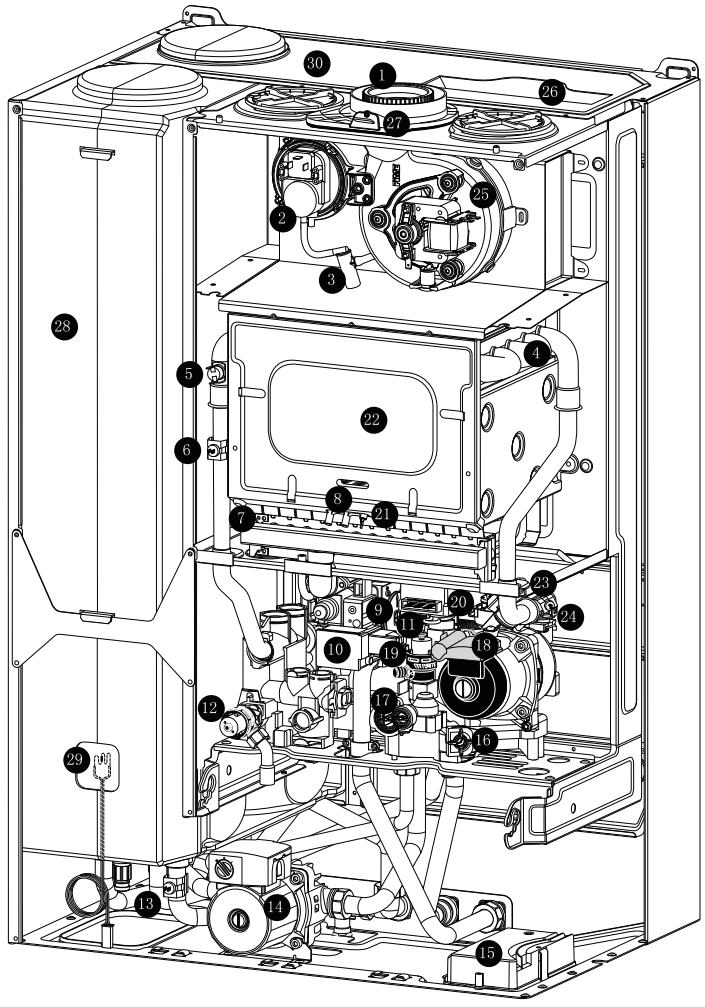
控制面板



图例：

1.显示屏
2.复位键
3.红色指示灯（亮=产品被锁定）
4.黄色指示灯（亮=单供暖）
5.供暖系统水压表
6.供暖温度调节旋钮（夏/冬模式选择旋钮）
7.调节“–”键
8.进入菜单/设定保存键
9.退出键
10.设定“+”键
11.生活热水温度调节旋钮
12.开/关键
13.绿色指示灯（亮起=自动功能启动）
14.自动功能启动键
15.单供暖键（储水罐不加热）

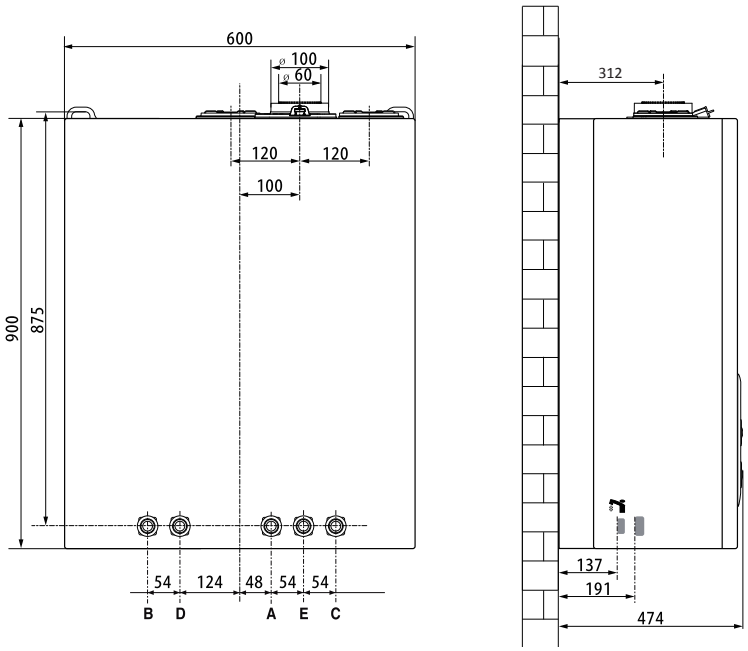
全视图a



图例：

1. 烟道连接
2. 风压开关
3. 冷凝水收集器
4. 主热交换器
5. 过热保护温控器
6. 供暖出水温度传感器
7. 燃烧器
8. 点火电极
9. 燃气阀
10. 点火器
11. 次级热交换器
12. 3巴安全阀–供暖回路
13. 生活热水温度传感器
14. 循环泵–生活热水回路
15. 外围设备电路连接盒
16. 供暖回路过滤器
17. 生活热水水流量传感器
18. 带排气阀的循环泵–供暖回路
19. 7巴安全阀–生活热水回路
20. 三通切换阀
21. 火焰感应电极
22. 燃烧室
23. 供暖回水温度传感器
24. 风压开关
25. 变频风机
26. 膨胀水箱–供暖回路
27. 燃烧分析测试点
28. 储水罐（20+20L)
29. 储水罐温度传感器
30. 膨胀水箱–生活热水回路

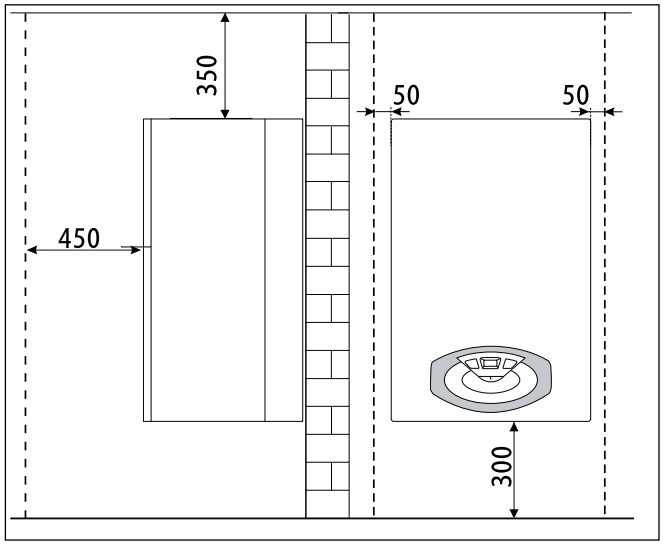
外形尺寸



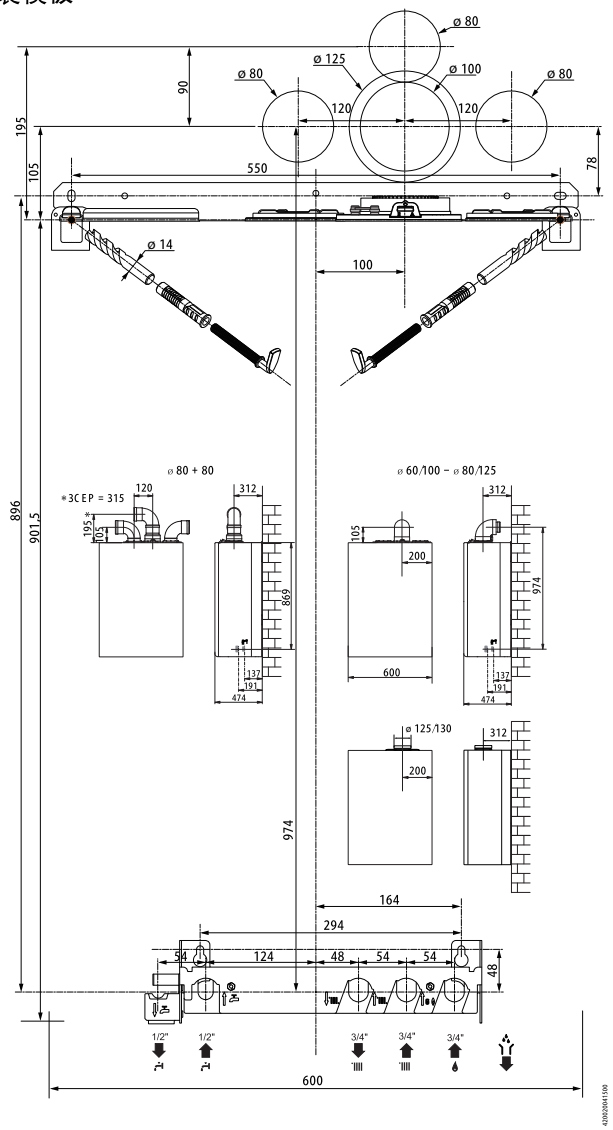
A.供暖出水口
B.生活热水出水口
C.燃气进气口
D.生活热水进水口
E.供暖回水口

最小安装距离

为便于热水炉的维护，必须遵守以下安装间距。



安装模板



产品描述

技术参数

产品型号	产品型号		CLAS B 28 FF
	CE认证（编号）		1312BR4793
	热水炉安装方式		1P-3P-4P-5P-6P-8P
电气性能	最大/最小额定热输入（Hi）	kW	30,0/13
	最大/最小额定热输入（Hs）	kW	33,3/14,4
	生活热水模式最大/最小额定热输入（Hi）	kW	31,3/13,0
	生活热水模式最大/最小额定热输入（Hs）	kW	34,8/14,4
	供暖最大/最小热输出	kW	27,0/12,1
	生活热水最大/最小热输出	kW	29,5/12,1
	燃烧效率（烟道处）Hi/Hs	%	93,9
	额定热输入的总效率（60/80°C）Hi/Hs	%	90,0/84,3
	额定热输入30% 的效率（47°C）Hi/Hs	%	93,2/83,9
	最小热输入的效率Hi/Hs	%	93,0/83,7
	能效星级（欧盟92/42/EEC号指令）	星级	***
	Sedbuk等级	等级	D
	外壳最大热损失（ΔT = 50°C）	%	0,4
	燃烧器工作时热损失	%	6,1
排烟特征	排空剩余水头	Pa	104
	氮氧化物Nox等级	等级	3
	烟气温度（G 20）	℃	114
	二氧化碳CO2含量2（G 20）	%	6,4
	二氧化碳CO2含量（0% O2）	ppm	92
	氧气O2含量（G 20）	%	8,9
	烟气最大含量（G 20）	kg/h	67,5
	过量空气	%	74
供暖特性	水回路压力损失（最大）ΔT=20°C	(mbar)	200
	系统剩余水头	bar	0,25
	膨胀水箱预充压力–供暖回路	bar	1
	供暖回路最大水压	bar	3
	膨胀水箱容量–供暖回路	l	12
	膨胀水箱容量–生活热水回路	l	2
	最大/最小供暖温度（高温段）	℃	35/85
生活热水特性	最大/最小生活热水温度	℃	65/40
	储水罐容量	l	40
	生活热水流量（10分钟，△T=30℃）	l/min	13,3
	生活热水流量（△T=25℃）	l/min	25,2
	生活热水流量（△T=35℃）	l/min	18,0
	生活热水舒适星级	星级	***
	最低启动流量	l/min	1,7
	生活热水的最大/最小水压	bar	7
室内电气参数	电源电压/频率	V/Hz	220/50
	耗电量	W	168
	最低运行温度	℃	5
	电气系统防护等级	IP	X5D
	重量	kg	55

*国内目前热水炉烟管安装方式为1P型，如果需要其它安装类型，请和厂家联系确认烟管长度和安装方式。

安装前警告

热水炉会将水加热至沸点以下的温度。
将热水炉连接在性能与功率与其匹配的供暖系统
及生活用水总管上。

- 仔细地清洗系统管道，去除任何会对正常运转产生影响的螺纹或焊接残渣等其它污物。
- 检查热水炉工作预设燃• 与当地使用的是否一致（详情请参阅包装标签以及热水炉铭牌上的内容）
- 检查排气管，确定无阻塞情况，且无任何其它设备排除的物体，按照现行法律之要求，除非该烟道预设设计为多用型，否则不能同时用于其它设备的排风。
- 若当前排气管中有接头，检查此类排气装置是否清洁干净，是否有残渣，若有，请清除，因为任何熔渣脱落都会堵塞烟道，造成安全隐患。

–确认排烟管不合适处已被导通。
– 若区域中的水质特别硬，可能会在热水炉内形成水垢，降低整体性能。

P型热水炉的燃烧室及空气供给线路的空气完全隔离，因此该型号的热水炉对通风条件以及安装房间的大小没有特殊要求。
为了保证热水炉的正常操作，安装位置必须符合操作的极限温度，且应避免热水炉直接接触到大气介质。必须将热水炉安装在牢固、耐燃的永久墙体上，以防从后侧接触热水炉。
安装热水炉时，应遵循最小安装距离的要求（以便在安装完成后还能对热水炉的多种零部件进行维护更换）。

⚠ 警告

不得在热水炉附近放置任何易燃物品。

确保安装位置以及必须与热水路连接的任何系统都完全符合现行适用法规的要求。

若热水炉安装的房间内有粉尘及/或腐蚀性蒸气，则热水炉运行时不得使用室内的空气。

⚠

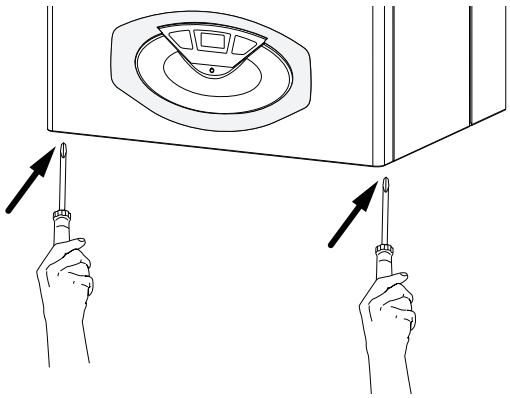
必须根据国家现行相关安装条例以及当地政府和公共卫生组织的要求，由合格的专业人员安装热水炉，并执行第一次点火。

外壳拆卸及内部检查说明

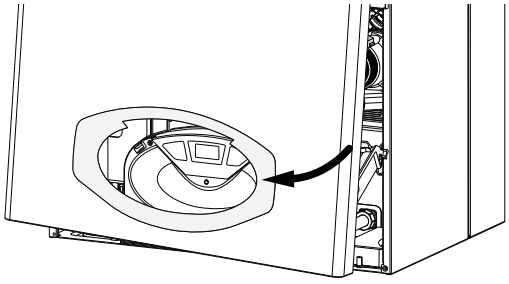
对热水炉执行任何工作之前，都必须先使用外部双极开关将热水炉从供电设备上断开，并关闭燃气阀门。
对热水炉的内容元器件进行操作时，务必遵循以下内容：

- 旋开外壳前端的两螺钉（a），将外壳向前推，并将其从上面的钉子上取下（b）
- 取下控制面板（图7.29），并将其夹进热水炉的外壳中
- 取下面板上的两个夹子，关闭燃烧室。向前拉，并将其从上面的钉子上取下（d）

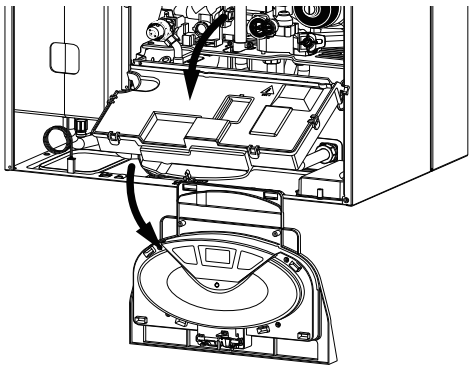
a



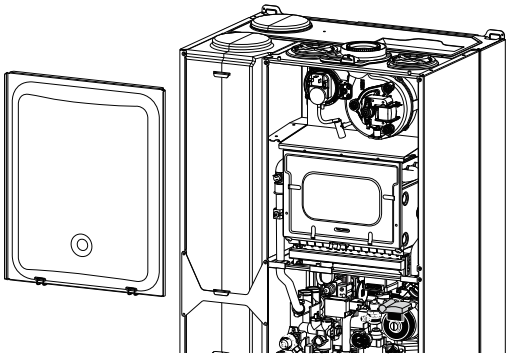
b



c



d



燃气连接

该热水炉使用下表中的燃气。

国家	型 号	燃气类别
中国	CLAS B 28FF	天然气12T

查看热水炉铭牌上的相关信息，检查热水炉是否在适当的国家中使用，且热水炉的预设燃气类别是否与热水炉使用时所在国家的燃气类别一致。

必须严格按照相关法律的要求，以及热水炉的最大功率设计、配给燃气供给管道；并确保切断阀的尺寸与连接正确。安装之前，建议对燃气管道进行彻底的清洗，以防残留物质影响热水炉的正常运转。

检查所使用的燃气是否与热水炉预设的燃气类型一致（预设之燃气类型参见设备铭牌）。

检查向热水炉供给之气体（甲烷或液化石油气）的压力是否适合热水炉，若压力不够，可能达不到热水炉的功率，给用户造成不便。

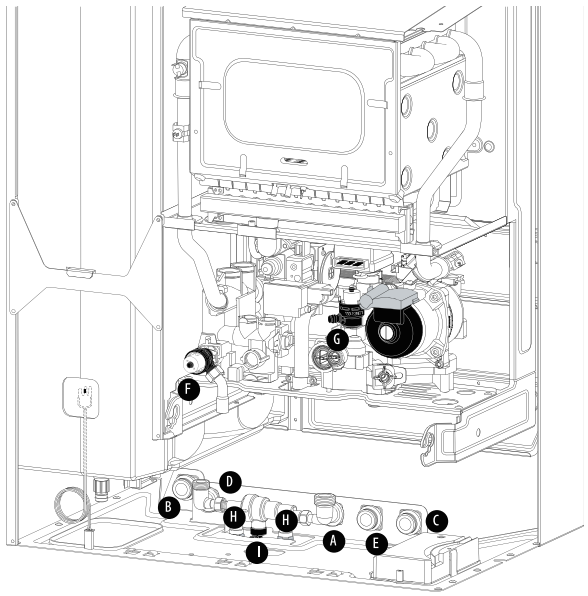
安装后，安装人员应对热水炉的给排气烟管进行位置标识，并应向用户介绍热水炉及其安全装置的使用方法。

水路连接

下图说明了热水炉水路及燃气附件的连接。

确保自来水总管的压力不会超过6巴；若超过，必须安装一个减压阀。

热水炉管路连接图

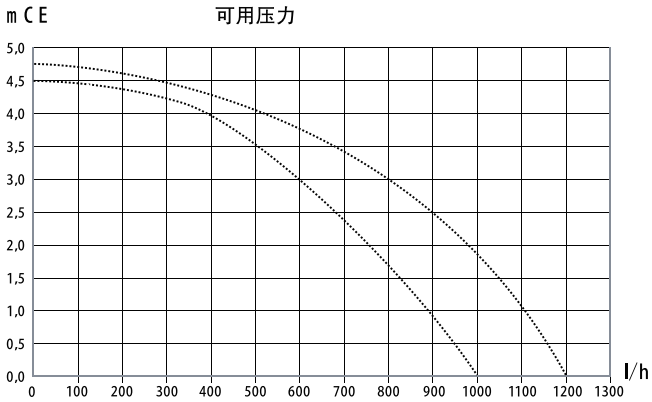


图例：

A.供暖出水口
B.生活热水出水口
C.燃气进气口
D.生活热水进水口
E.供暖回水口
F.安全阀排水口–供暖回路
G.安全阀排水口–生活热水回路
H.注水阀
I.排水阀

根据循环泵工作曲线图所示，由于供暖系统中的管道及加热部件的尺寸不同，应在要求之流速中加入剩余水头这一函数。

热水炉的剩余水头（ΔT 20°C）



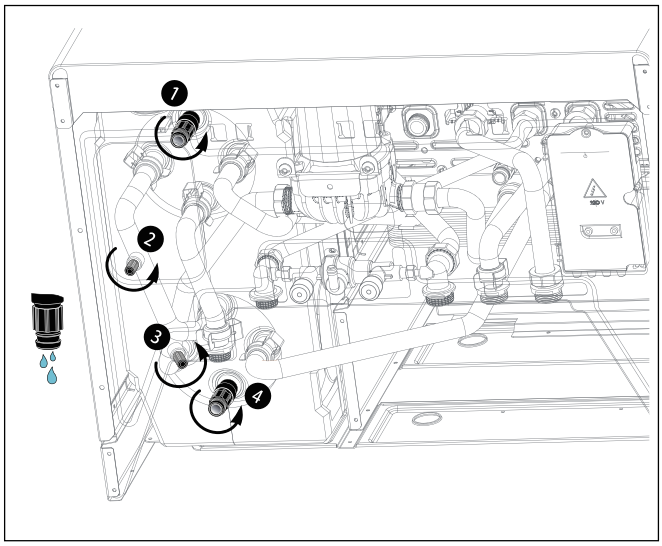
过压保护装置

为排水管安装水力组件中的“F”、“G”安全阀。过压保护装置的出口（见图）必须与一个可以目视检查的倒虹吸管连接，以防伤及人类、动物，或造成财产损失（制造商对此类损害不承担任何责任）。

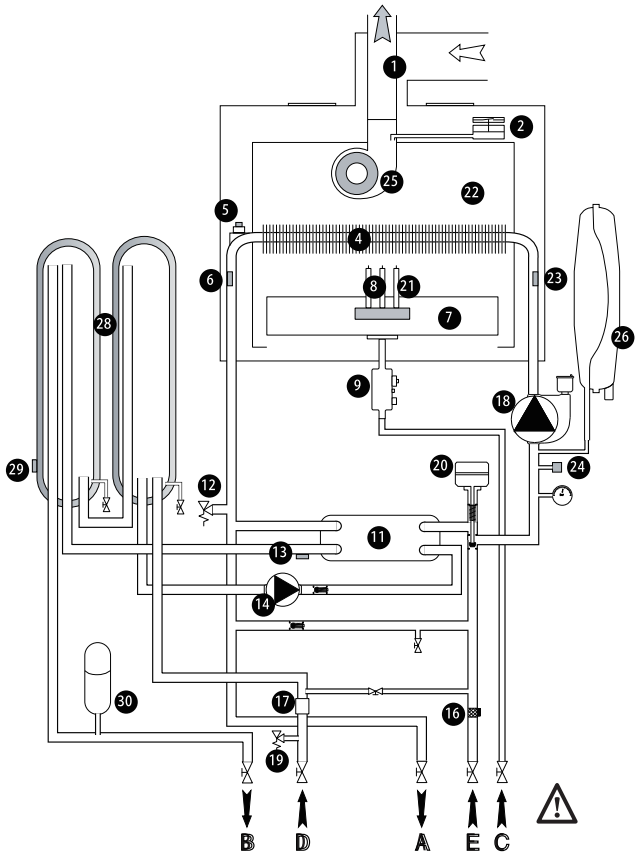
供暖系统的清洗

若热水炉与一个旧的系统连用，则水中可能累计了大量的化学物质及添加物，可能会影响新热水炉的运行与使用寿命。更换热水炉之前，必须对系统进行彻底的清洗，消除任何可能影响热水炉正常使用的残留物或污垢。确保膨胀水箱的容量与系统中水的含量相匹配。

储水罐排水



水路系统图



1. 烟道
2. 风压开关
4. 主热交换器
5. 过热保护温控器
6. 供暖出水温度传感器
7. 燃烧器
8. 点火电极
9. 燃气阀
11. 次级交换器
12. 巴安全阀——中央供暖线路
13. 生活热水温度传感器
14. 循环泵-生活热水回路
16. 供暖回路过滤器
17. 生活热水水流量传感器
18. 带排气阀循环泵-供暖回路
19. 7巴安全阀-生活热水回路
20. 三通切换阀
21. 火焰感应电极
22. 燃烧室
23. 供暖回水温度传感器
24. 水压开关
25. 变频风机
26. 膨胀水箱-供暖回路
28. 储水罐
29. 储水罐温度传感器
30. 膨胀水箱-生活热水回路

烟道连接

热水炉在P安装模式下（使用室外空气）运行。

安装排气系统时要注意密封的处理，以防烟道废气泄露到空气管道系统中。

安装时，要管保持水平向下3%，以防冷凝物聚集。

安装同轴进气/排气系统时，必须使用原厂配件。

烟气排放管道不得接触可燃物体，或防止在可燃物体附近，且不得穿过由可燃材料制成的建筑结构或墙面。

更换旧的热水炉时，也必须更换通风系统与烟气排放系统。

烟气排放管道接口必须使用公/母连接头及密封垫。连接头的方向应始终与冷凝水的流向相反。

热水炉的类型——烟道排气连接

- 热水炉与进气/排气管道同轴连接
- 热水炉与排气管**单独**连接，通过室外进气

必须使用耐冷凝产品连接热水炉与烟气排气管。连接的长度与方向的改变，详见“排气安装方式”表。

由于安装方式不用，厂商会特别提供进气/排气管道连接件。该热水炉与进气与烟气排放管道系统同轴连接。

若管道中出现压力损失，请查阅烟道配件目录。在上述确定尺寸的过程中，必须要考虑到烟道中的其它阻力。

计算方式，等效长度及安装案例详见烟道配件目录。

警告

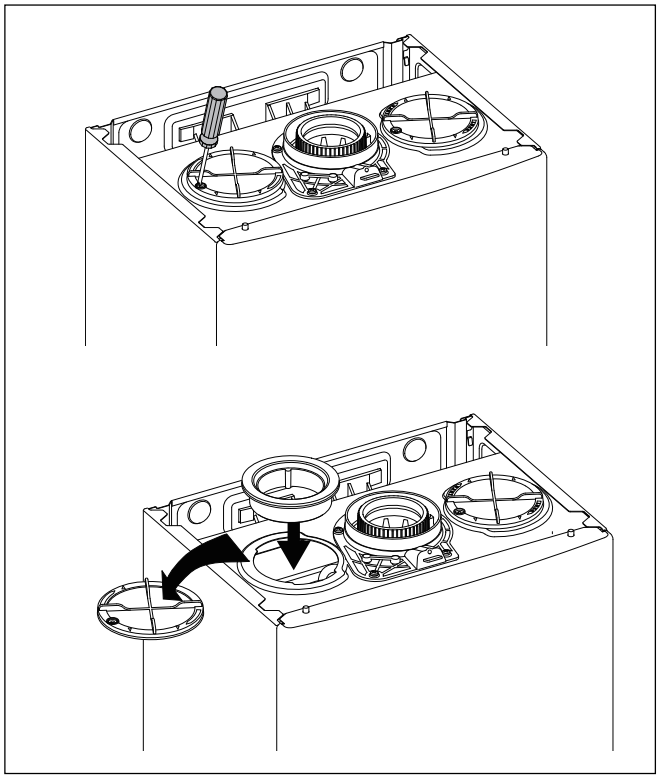
确保烟气排放和通风管道中无堵塞情况。

确保烟气排放管道中无泄漏情况。

热水炉连接一个60/100同轴进气口和烟气排放管道系统。

使用分段进气与排气装置时，必须使用两个进气口中的一个。

松开螺钉，取下安装隔件，嵌入进气口安装附件，然后用提供的螺钉固定。



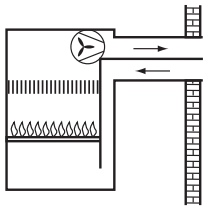
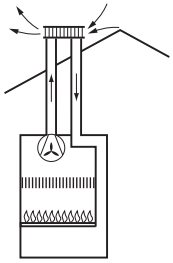
烟气管道长度表

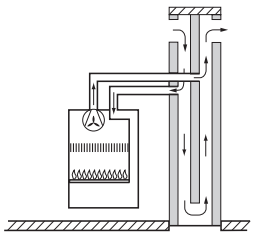
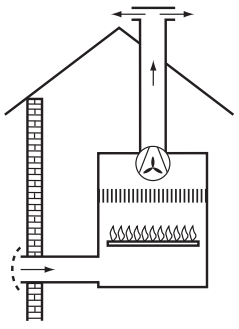
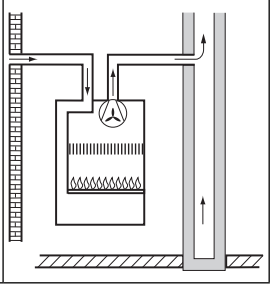
类型		烟气管道最长延伸距离（m）				管道直径（mm）
		CLAS B 28 FF				
		挡风圈 ø44		无挡风圈		
		MIN	MAX	MIN	MAX	
同轴系统	C12 C32 C42	0,5	0,75	0,75	4	ø60/100
	C12 C32 C42	0,75	3	3	11	ø80/125
双管系统	C12 C32 C42	S1= S2				ø80/80
		0,5/0,5	11/11	11/11	25/25	
	C52 C82	1 + S2				ø80/80
		1/0,5	1/27	1/27	1/51	

S1 = 进气　　S2 = 烟气排放

* C12/C32/C42/C52/C82分别对应中国的1P/3P/4P/5P/8P安装方式

进气/烟气排放管道类型

燃烧空气来自室外		
C12	通过处于同一压力区的外墙排放烟气或进气	
C32	通过处于同一压力区的屋顶通风口排放烟气或进气	

C42	通建筑物中的烟道排放个别或共享排气管中的废气或进气	
C52	通过不在同一压力区的外墙将烟气排放出去，并进气	
C82	通过建筑物中个别的或共享的烟道排放烟气 通过外墙进气	

⚠ 警告

在对热水炉进行任何操作之前，首先关闭外部开关，切断电源。

电气连接

为了安全起见，请由专业技术人员对电器系统进行彻底的检查。

因接地不当，或供电故障引起的任何损失，生产商概不负责。

确定系统能承受热水炉的最大功率（详见设备铭牌）。

检查电线的横截面适合该设备，且横截面积不小于0.75平方毫米。

为了运行正常，热水炉必须连接到一个有效的接地系统上。

电源线必须与220V-50Hz的供电网络连接，并遵循供电网络对L-N电极与接地连接的规定。

若必须更换电源线，则使用相同规格的产品更换。

⚠ 电源线

重要!

热水炉所配为单相三线插头，请使用单相插座，其接地线必须可靠接地。

如果电源线损坏，为了避免危险，应该由ARISTON指定的专业技术人员来更新。

严禁使用多功能插头、延长线或转接器。

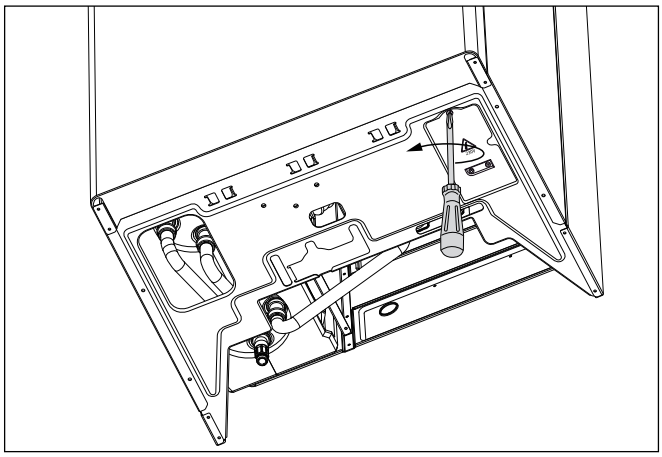
严禁将水路、供暖及燃气系统的管道用于该设备的接地连接。

热水炉没有避雷保护。若电源总线的保险丝需要更换，则使用2A的快速熔断器。

外围设备连接

按照以下步骤连接外围设备：

- 切断热水炉的电源
- 打开热水炉下方的• • • 连接•



可使用接线端子连接以下设备：

Bus=远程控制-全能管家

TA1=一区开关型房间温控器

TA2=二区开关型房间温控器

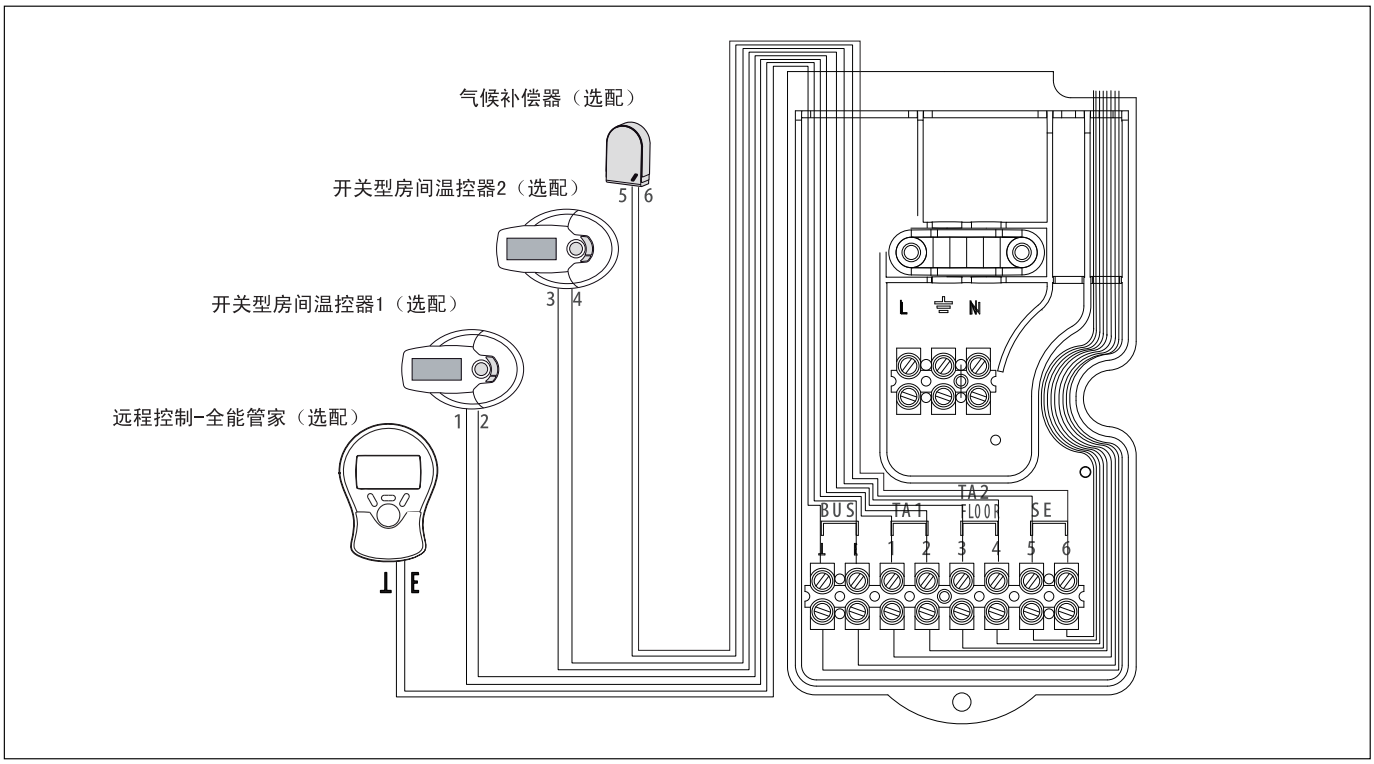
SE=室外气候补偿器

开关型房间温控器的连接

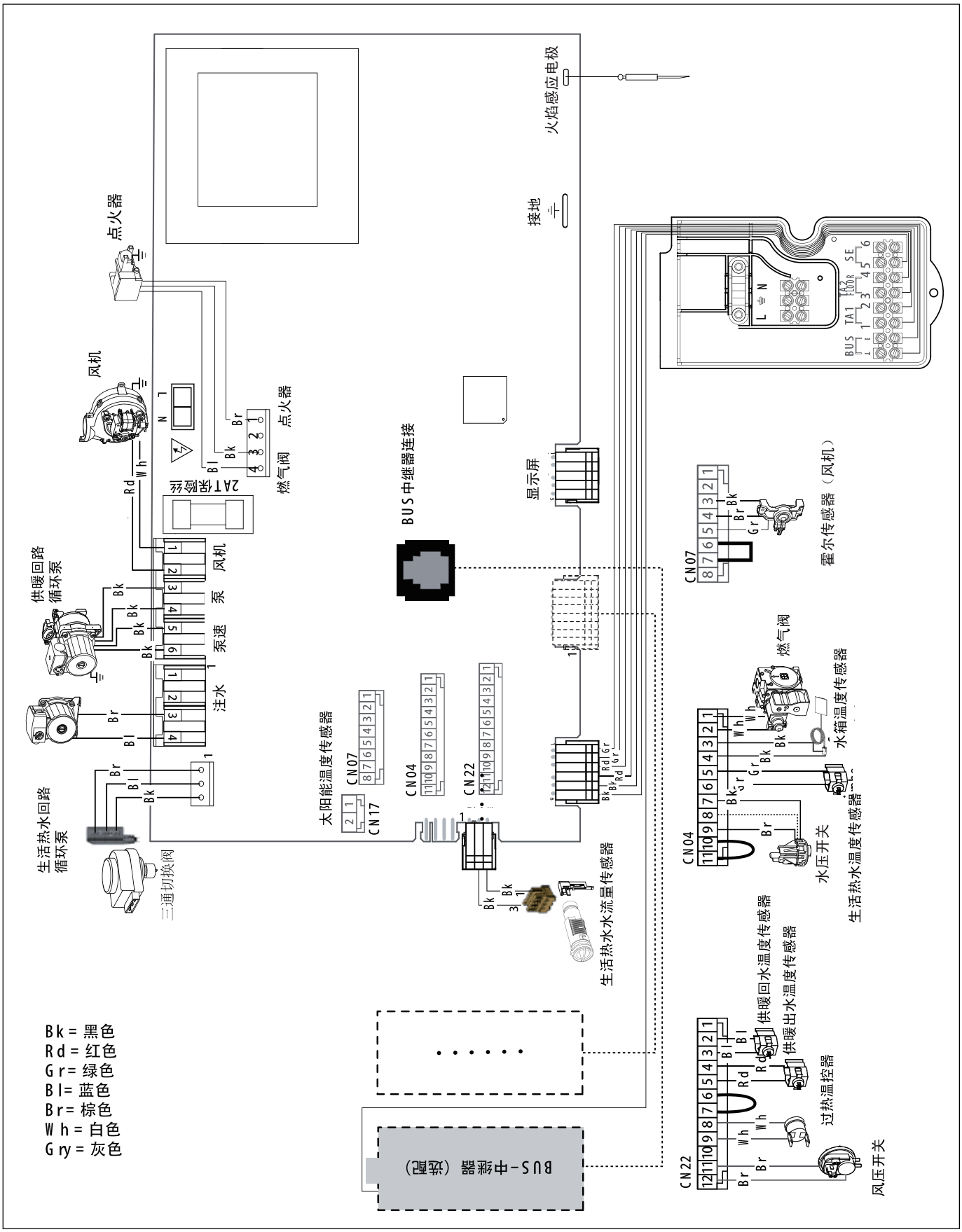
-引入房间温控器信号线

-如图所示，拆下跳线，连接信号线到TA1

- 确保连接完好，没有牵引力。

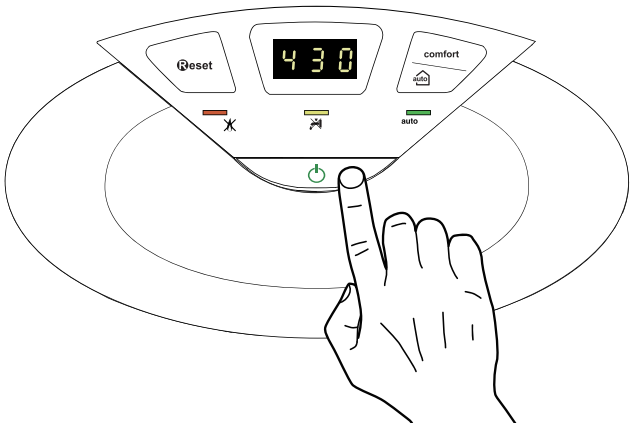


电气图
为了安全起见，由专业技术人员对电器系统进行彻底的检查。
因接地不当，或供电故障引起的任何损失，生产商概不负责。



试运行

点火程序
按下控制面板上的开/关按钮启动或关闭热水炉。
显示屏显示：



上图中的三位数为热水炉的操作模式。
OXX: 待机
CXX: 供暖需求
cXX: 供暖后循环
dXX: 生活热水需求
bXX: 储水罐加热
hXX: 生活热水后循环
fXX: 防冻保护，仅循环泵工作
防冻保护，热水炉点火运行

第二、三张图显示：
- 无加热要求时的水流温度
- 中央供暖模式下的水流温度
- 生活热水系统中的热水温度
- 防冻模式下的水流温度

特定功能的执行：
P 1 = 开始通风循环

第一次点火
1. 确保
- 燃气阀关闭；
- 电气连接正确。保证绿色/黄色接地线在任何情况下都能与有效的接地系统连接；
- 使用螺丝起子打开自动排气阀的盖子；
- 供暖系统压力表上的压力至少为1巴；
- 打开热水炉（按下开/关按钮），选择待机模式，无热水或供暖需求。
- 长按“退出”键5秒，启动排气循环。热水炉将开始排气循环，并持续7分钟。若要停止，按下“退出”键。
- 最后，检查系统是否已完成排气工作，若未完成，重复上面的步骤。
- 释放散热器中的空气；
- 选择正确的燃烧产物排气管，并确定排气管中无任何阻塞物。
- 打开室内所有必需的通风口（B 类安装）。

2. 打开燃气阀，检查连接的密封性，包括热水炉接头密封，确保仪表上无任何燃气的泄露信息。去除任何泄露情况。
3. 启动热水炉，选择供暖或生活热水模式。

排气循环

若在加水的过程中，或发现系统中有多余的空气时，按住“退出”键5秒钟，启动排气循环功能。热水炉将开始排气循环，并持续约7分钟。排气工作完成后，菜单界面将恢复原样。若需要，可重复循环工作，或按下“退出”键停止循环。按住“退出”键直至恢复正常的显示界面。

初始操作
为保证设备的安全性与正常运转，必须由掌握了法律要求之技能的合格的技术人员对热水炉执行启动前的准备工作。

供电
- 检查电源的电压与频率与热水炉铭牌上的数据是否一致；
- 确定接地连接有效。

水路系统的加水
按照以下方式进行：
- 打开冷水进水龙头；
- 打开循环水泵上的自动排气阀的盖子；
- 逐渐打开热水炉下方的阀门；
- 按照从低到高的次序打开排气阀，当系统中注满干净的水，无任何空气时方可关闭阀门；

- 当压力表上显示的数字为1巴或以上时，关闭热水炉下方的阀门。

燃气供给
按照以下方式进行：
- 确保燃气供给主管使用的是与热水炉铭牌上标示的相同类型的燃气；
- 打开所有门窗；
- 确保室内无火花或明火；
– 确认系统无燃气泄漏。

关闭燃气截止阀及燃气阀，10分钟内燃气表上应无任何燃气使用迹象。

燃气设置的检查

取下前外壳，进行以下操作。

供气压力检查

1. 松开螺丝"1"(图a)，然后把压力表连接管套在管螺柱中；
2. 开启热水炉到最大功率，启动"烟道清扫"功能(按住 Reset 复位键10秒钟；会显示't--")。供气压力应符合热水炉设计的燃气类型的压力值。
3. 检查结束后，拧紧螺丝"1"，且保证安全到位；
4. 10分钟后"烟道清扫功能"自动解除，或者可以按 Reset 复位键使其停止。

检查生活热水最大功率

1. 为了检查生活热水最大功率，松开螺丝"2"(图b)，然后把压力表连接管套在管螺柱中；
2. 断开气室补偿管；
3. 开启热水炉到最大功率，启动"烟道清扫"功能(按住 Reset 复位键10秒钟；会显示"t--")。按住"+"键启动生活热水最大功率，显示"t¯¯"。

供气压力应符合在"燃气设置"表中关于对于热水炉设计的燃气类型所显示的数字。如果不相符合，移开保护罩，旋紧或旋松调节的螺丝"3"(图c)。

4. 检查结束后，拧紧螺丝"2"，且保证安全到位；
5. 重新放好保护比例阀调节器的盖子；
6. 重新连接补偿管；
7. 10分钟后"烟道清扫功能"自动解除，或者可以按 Reset 复位键使其停止。

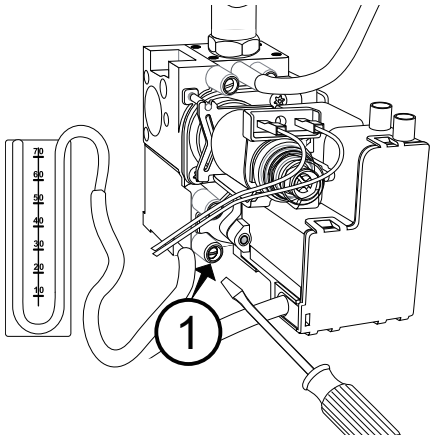
检查最小功率

1. 为了检最小功率，松开螺丝"2"(图b)，然后把压力表连接管套在管螺柱中；
2. 断开气室补偿管；
3. 开启热水炉到最大功率，启动"烟道清扫"功能(按住 Reset 复位键10秒钟；会显示"t--")。按住"＋"键启动在最小功率下运行，显示"t__"。

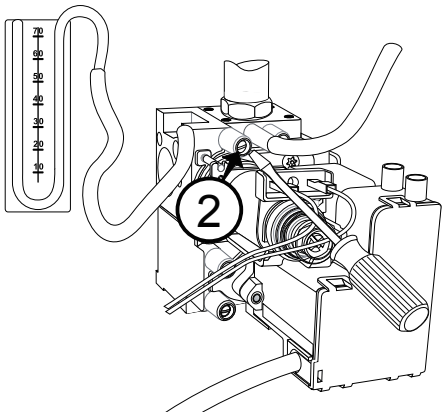
拔掉比例阀调节器的电线接头(图d)；供气压力应符合在"燃气设置"表中关于对于热水炉设计的燃气类型所显示的数字。如果不相符合，移开保护罩，旋紧或旋松调节螺丝"4"(图d)。

4. 检查结束后，拧紧螺丝"2"，且保证安全到位；
5. 重新插上比例阀调节器的电线接头；
6. 重新连接补偿管；
7. 10分钟后"烟道清扫功能"自动解除，或者可以按 Reset 复位键使其停止。

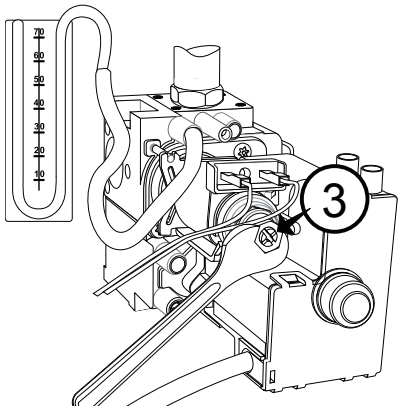
(a)



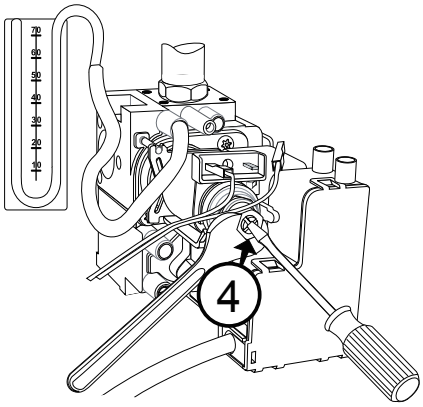
(b)



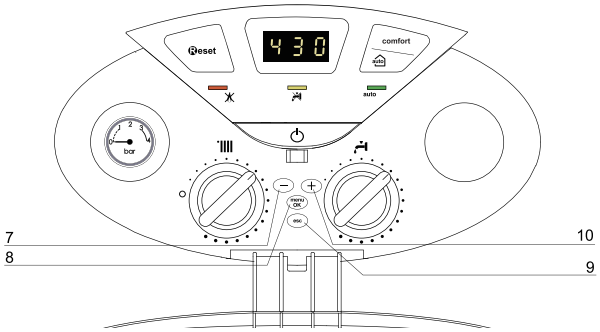
(c)



(d)



设置与调节菜单的访问
菜单2 —— 热水炉的参数
子菜单3 —— 参数1
最大供暖功率的调节
子菜单2 —— 参数0
• • • • • •
子菜单3 —— 参数5、6
供暖点火延迟
子菜单 —— 参数0
最大加热功率
• 只有在换燃气时或更换电路板时



7. “-”调节键
8. 菜单/确定键
9. 退出按钮
10. “+”调节键

菜单及各个参数的信息详见显示器。

访问菜单2时，打开盖子，并进行如下操作：
1. 按下菜单/确定按钮；显示器上将闪出第一个数字000 。
2. 按下 +按钮选择菜单“200 ”
3. 按下菜单/确定按钮，显示器上将闪出第二个数字，并要求输入存取码“200 ”。
小心！设置存取码后方可访问技术人员专用菜单。
4. 按下菜单/确定按钮，显示器上将出现“ 222”。
5. 按下+ 按钮，选择代码“ 234”。
6. 按下菜单/确定按钮选择子菜单；显示屏上将出现第二个数字“ 220”。
7. 按下 +按钮，选择子菜单，如，“230 ”。
8. 按下菜单/确定按钮访问子菜单的参数，显示器上将出现第三个数字“236 ”。
9. 按下+ 或 -按钮选择参数；之后再按菜单/确定按钮。
10. 按下+ 或 -按钮访问参数；显示器上将出现数值，如，“76 ”。
注：参数值将在显示器上停留20秒钟，之后显示器上将交替出现参数值与参数，如“70>231 ”。
11. 按下+ 或- 按钮选择新值，如“75 ”。
12. 按下菜单/确定按钮保存更改信息，或按下退出键直接退出，不保存。

退出时，按下退出按钮直至显示器恢复正常的操作界面。
若某些菜单并不要求输入存取码，则可从菜单直接进入子菜单界面。

最大供暖功率的调节
可在热水炉允许的最大及最小功率之间调节最大供暖功率。
显示器能显示从“0”至“99”之间的数字。
检查最小供暖功率时，进入菜单2/子菜单3/参数1的界面，检查数值，必要时可根据
“燃气压力表”中的内容更改数值。

慢点火功率的检查
可在最大与最小功率之间调节慢点火功能。
若在点火阶段（当热水炉在进行生活热水的加热）时，燃气阀的出口压力与“燃气
表”中的数值不符，则更改参数。
进入菜单2/子菜单2/参数0，以检查慢点火的状态。
需要时，对参数进行调节，直至达到适当大压力。

供暖点火延迟的调节
本参数——菜单2/子菜单3/参数5——可以手动或自动设置延迟时间，该延迟时间系
指热水炉在达到要求的温度后，并在下一次点火之间的时间段。
若选择手动模式，则可利用连续的参数（菜单2/子菜单3/参数6）将延迟时间设置在
0至7分钟的时间段内。
自动选择系指热水炉将根据设定温度确定延迟时间。

最大绝对供暖功率的检查
（仅限更换燃气或印制电路板时）
进入燃气阀，并按照以下内容检查/更改最大绝对供暖功率：
1. 释放螺钉“2”（见图b），并将压力表连接管嵌入管壁孔中。
2. 断开空气补偿管。
3. 打开热水炉，并将功率调至最大，启动“烟道清扫”功能（按下 复位键 ，并保持5秒钟；显示屏上将显示“t--”）。
供气压力应与“燃气设置”表中热水炉预设燃气类型的值一致。
若不一致，进入菜单
2/子菜单3参数0，更改数值，直至达到“燃气设置”表中的压力值。
4. 检查完毕后，拧紧螺钉“2”，确保其牢固。
5. 10分钟后，或按下复位键后，将自动解除“烟道清扫功能”。

下表显示了供暖模式下，燃烧器燃气压力与热水炉功率之间的关系。

供暖燃气压力									
CLAS B 28FF	Gas	热输出(kW)	12,1	14	16	18	20	24	26	28
	G20	mbar	2,3	3,1	4,0	5,1	6,3	8,9	10,4	12,1
		Parameter 2 3 1	0	37	42	46	50	57	61	64
	G30	mbar	5,1	6,8	8,9	11,3	13,9	19,1	22,4	26
		Parameter 2 3 1	0	52	58	63	69	76	81	84
	G31	mbar	6,2	8,3	10,8	13,7	16,9	24,4	28,6	33,2
		Parameter 2 3 1	0	55	62	68	73	83	89	95

变更汇总表

		CLAS B 28FF		
		G20	G30	G31
较低的沃泊指数（15℃，1013 m bar）		45,67	80,58	70,69
燃气入口压力（m bar）		20	28/30	37
燃气燃烧器压力（m bar）				
生活热水最大水压（m bar）		12,9	27,7	35,8
最大供暖（绝对）压力（m bar） （菜单2/子菜单3/参数0）		12,2 (64)	26 (85)	33,2 (95)
最小压力（m bar）		2,3	5,1	6,2
缓点火压力（m bar） （菜单2/子菜单2/参数0）		5,5 (36)	9,5 (47)	9,5 (47)
最大供暖压力的调节（m bar） （菜单2/子菜单3/参数1）		49	66	71
点火延迟（菜单2/子菜单3/参数5）		自动		
主燃烧器喷嘴		13		
Ø 燃烧器喷嘴（m m）		1,32	0,80	0,80
最大/最小能耗 （15℃，1013 m bar） （G.N.=m 3/h）（GPL=Kg/h）	最大生活热水	3,31	2,47	2,43
	最大供暖	3,17	2,37	2,33
	最小	1,38	1,03	1,01

*G20(12T)的适用进气压力范围为15 ~ 30mbar。

燃气的更换：

可对热水炉进行调节，以液化气（G 30-G 31）替代甲烷气体（G 20），反之亦然。必须由合格的技术人员使用特殊装备进行调节。

必须执行以下步骤：

1. 关闭设备的电源。
2. 关闭燃气阀。
3. 断开热水炉的电气连接。
4. 进入燃烧室，按照“外壳拆卸及内部检查说明”一段中的内容进行操作。
5. 更换喷嘴，并按照装备随附之说明书上的内容上牌。
5. 更换喷嘴，并按照装备随附之说明书上的内容上牌。
6. 检查所有连接的气密性。
7. 启动热水炉。
8. 调节燃气（详情请参见“燃气调节的检查”一段）：

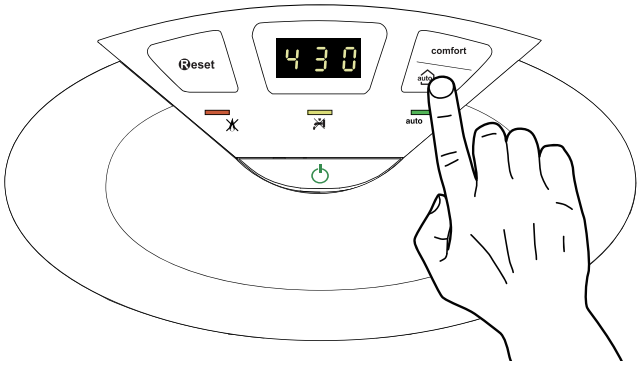
- 检查生活热水的最大功率
- 检查最小功率
- 检查最大绝对供暖功率
- 调节最大可调供暖功率
- 检查缓点火
- 调节供暖点火延迟

9.分析燃烧活动。

注意：
燃气的转换和调节只能由ARISTON指定的专业人员进行操作，
调整后应将调节器锁定，并加标贴标识。

自动功能

该功能可使热水炉根据外部条件自动调节运行。（供暖元件的温度），
以达到要求的室内温度，并维持该温度。
热水炉可根据连接之外围设备以及受控区域的数量自动调节器水流温度。
因此，应对各种相关的参数进行设置（详见调节菜单）。
按下自动功能键激活此功能。
详情请参见阿里斯顿温度调节手册。



例1：

带开关型房间温控器的单区域系统（高温）：
在此情况下，必须设置以下参数：
4 21 —— 利用传感器激活温度调节功能
—— 选择04 = 基本温度调节
2 44 —— 升温等待时间（可选）
出水温度每增加4℃，就要对等待时间进行设置。数值取决于系统及安装类型。
若升温等待时间 = 00，即该功能尚未激活。

例2：

带可开/关式房间恒温器以及室外温度传感器的单区域系统（高温）：
在此情况下，必须设置以下参数：
4 21 —— 利用传感器激活温度调节功能
—— 选择01 = 室外气候补偿器
4 22 —— 温度调节曲线的选择
根据建筑物中的系统、安装、热绝缘等类型选择对应的曲线。
4 23 —— 必要时，也可水平移动曲线，增加或降低温度设定点（用户可利用调节键进行调节，当启动自动功能时，按下调节键会水平移动曲线）。

例3：

带全能管家及室外气候补偿器 单区域系统（高温）：

4 21 —— 利用传感器激活温度调节功能
—— 选择0 = 全能管家+室外气候补偿器
4 22 —— 温度调节曲线的选择
—— 根据建筑物中的系统、安装、热绝缘等类型选择对应的曲线。
4 23 —— 必要时，也可水平移动曲线，增加或降低温度设定点（用户可利用调节键进行调节，当启动自动功能时，按下调节键会水平移动曲线）。
4 24 —— 全能管家 的影响
—— 可用于调节室内温度对水流定点温度估算的影响（20 = 最大；0 = 最小）。

热水炉保护装置

通过内置的印刷线路板(PCB)进行自检使热水炉具有故障保护的功能。如有必要印刷线路板将使热水炉停止运行，热水炉以这种方式关闭后将在控制面板上显示一个故障代码，表示该运行关闭的类型和原因。

一般会出现两种关闭类型:

安全关闭

该关闭的类型是"易失错误",易失错误表示当导致该故障关闭的问题去除后,热水炉可以自动重新启动。错误及错误代码(如 Err 107)显示于屏上。

事实上当导致安全关闭的原因消除后，热水炉能再次启动且继续正常运行。

水压不足导致的安全关闭

如果供暖系统水路中的水压不足，热水炉将执行安全关闭。

显示屏上显示 ″Err″ 及代码 108

检查压力表上的水压，确保系统冷却时水压位0.6及1.5巴(bar) 之间，如果压力在最小值之下，就必需通过位于热水炉下部的注水阀注水并恢复压力。

操作关闭

这种关闭的类型是"非易失错误"，表示它不会被自动解除，显示屏上显示"Err"以及错误代码(比如：ERR/501)。可通过按 Reset 复位键来复位。

故障代码的第一位数字代表热水炉某个内部组件发生问题。

1- 供暖回路

2- 生活热水回路

3- 印刷线路板内部

4- 印刷线路板外部

5- 点火和探测

6- 空气进口/烟气出口

7-多区域

故障警告

这一警告在显示屏上以下述形式表示： 5 P3 =离焰

代表出现错误的操作系统类别的第一位数字，后面是P(警告)，然后是特定警告的代码。

重要

如果这种关闭频繁出现，请联系授权的服务中心提供援助。出于安全原因，热水炉允许在15分钟内最多实行5次复位操作(单独按复位键 Reset 5次)；15分钟内的第6次重启会使得热水炉关闭，只能在断电后才能重新操作。如果关闭是偶然现象或者个别出现，这就不是大的问题。

故障代码一栏表

显示	描述	
中央供暖线路		
1 01	过热	
1 03	水流检查失败	
1 04		
1 05		
1 06		
1 07		
1 08	水压不足（需要注水）	
1 09	供暖系统压力过高＞3 Bar	
1 10	出水探头损坏(开路/短路)	
1 12	回水探头损坏(开路/短路)	
1 14	室外传感器损坏(开路/短路)	
1 18	供暖探头问题	
1 P1	水流检查失败	
1 P2		
1 P3		
生活热水回路		
2 01	生活热水温度传感器断路/短路	
2 02	储水罐低位探头损坏	
2 04	太阳能集热器探头损坏	太阳能组件（选配）
2 05	生活热水传感器开路	
2 07	太阳能集热器最高温度	
2 08	太阳能集热器霜冻保护	
内置印制电路板		
3 01	EEPROM 故障	
3 02	通讯故障	
3 03	PCB故障	
3 04	复位次数太多（15分钟内>5次）	
3 05	PCB故障	
3 06	PCB故障	
3 07	PCB故障	
外印制电路板		
4 07	室内传感器开路（短路）	
点火与检测		
5 01	未检测到火焰	
5 02	燃气阀关闭检测到火焰	
5 04	离焰	
5 P3	熄火	
空气进气/烟气出口		
6 04	风机转速不足	
6 07	风机关风压开关开启	
6 08	风机开风压开关关闭	
6 P1	风压开关关闭延时	
6 P2	风压开关关闭 – 开启	
多区域供暖（供暖区域模块——选配）		
7 01	2区出水温度传感器故障	
7 02	2区回水温度传感器故障	
7 03	3区出水温度传感器故障	
7 04	2区回水温度传感器故障	
7 05	水路探头损坏	
7 06	2区过热	
7 07	3区过热	

燃烧分析

烟道连接器上有两个孔，可通过读数确定燃烧副产品及助燃空气的燃烧温度，以及氧气与二氧化碳的浓度等。
拧下前端的螺钉，取下金属板及密封垫圈，以使用此类进气孔。

按住 重置按钮10秒钟，即可进入烟气测试模式。

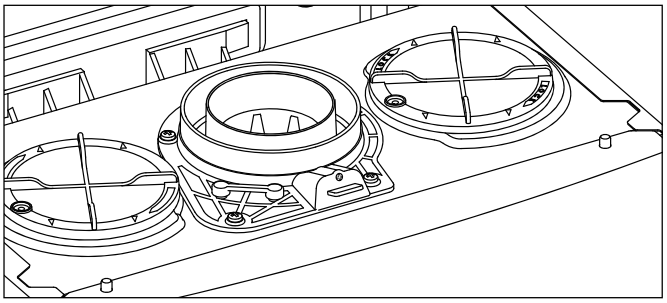
10分钟后，热水炉将回复正常运行。直接关闭热水炉再重新开启可立即恢复到正常的操作状态。
完成后，重新装上金属板，并确保密封完好。

燃烧产物

排放监控

可在热水炉中监测烟气排放/空气进气的情况，检查系统总压力有无损失• •可使用与燃烧室测试点相连的差示压力计检测气压开关操作时的ΔP。

当热功率调至最大时，所检测到的数值不得低于0.47 m bar（24kW ）- 0.70 m bar，以保证热水炉的运转正常，无中断。



防冻装置

开启电源后，防冻功能依靠热水炉供暖温度传感器的测温来自动执行，不受其它元件的控制。
如果供暖主循环出水温度降低到8℃以下，水泵将运行2分钟。

循环（固定）2分钟后，热水炉将对以下内容进行检查：

a）若供暖主循环出水温度 大于8℃，水泵将停止运行；

b）若供暖主循环出水温度在4℃至8℃之间，则水泵将继续运行2分钟；

c）若供暖主循环出水温度 小于4℃，则燃烧器将以最小的功率点火运行（供暖位置）直至温度达到33℃，之后，燃烧器熄火，水泵将继续运行2分钟。

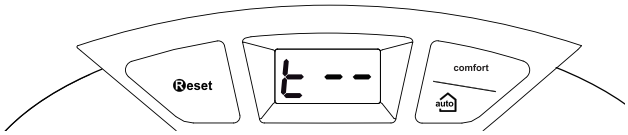
若出水温度一直保持在4℃至8℃之间，则水泵将继续运行2分钟直至供暖的出水温度达到8℃，之后，燃烧器将点火。若因温度过高而关机，则燃烧器将保持关闭状态。

仅当具备以下条件时，方可激活防冻装置（热水炉正确运行）：
– 系统水压值正确（不能低于0.6bar）；
– 热水炉接通电源；
– 有燃气供应（燃气阀门开启并且有燃气供应）。

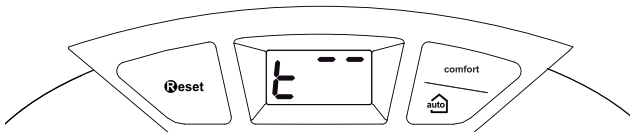
烟道清扫功能

印制电路板会强行将热水炉的功率调至最大或最小。

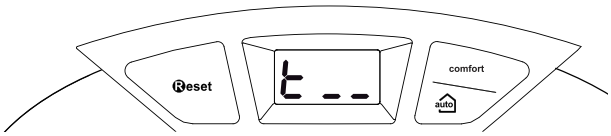
按住 Reset重置按钮10秒钟，可启动烟道清扫功能，燃烧器的供暖功率将被强行调至最大，显示器上将显示：



按住⊕按钮选择以最大功率供应热水，且显示器上将出现：



按住⊖ 按钮选择以最小功率供应热水，且显示器上将出现：



10分钟后，或按下重置按钮将自动解除该功能。

注：还可通过菜单7强行将热水炉的功率调至最大或最小（详见设置-调节-故障识别菜单段落）。

设置-调节-故障识别菜单

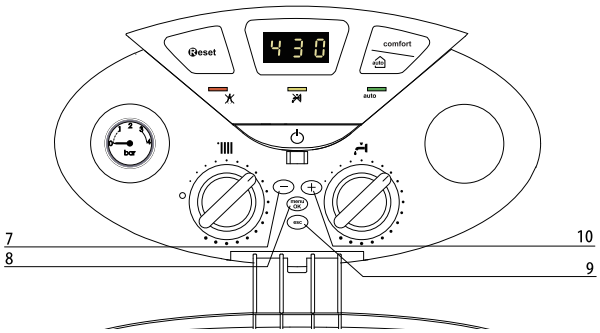
热水炉可以用来全面控制供暖和生活热水生产系统的运行。操作菜单可以定制热水炉系统和连接的扩展模块，最优化其运行达到最大的舒适度和节能效果。菜单也提供关于热水炉有效运行的重要信息。

菜单如下：

2	**锅炉参数**	
2	1	服务代码(合格的技术员保留访问权)
2	2	概要(常规设置)
2	3	中央供暖参数-1
2	4	供暖参数-2
2	5	生活热水
2	9	重新设定菜单2恢复出厂设置
3	**太阳能&储水罐**	
3	0	概要(常规设置)
3	1	服务代码(合格的技术员保留访问权)
3	2	特殊设置
4	**区域1参数**	
4	0	区域1设定点
4	1	服务代码(合格的技术员保留访问权)
4	2	区域1设置
4	3	诊断
4	4	区域设备管理
5	**区域2参数**	
5	0	区域2设定点
5	1	服务代码(合格的技术员保留访问权)
5	2	区域2设置
5	3	诊断
5	4	区域设备管理
5	5	多区域
7	**测试&应用**	
8	**服务参数**	
8	1	服务代码（合格的技术员保留访问权）
8	2	锅炉
8	3	锅炉温度
8	4	太阳能&储水罐
8	5	服务
8	6	统计
8	7	没有启用
8	8	错误历史记录

各个菜单的参数详见以下几页。

使用(menu OK)键和编码器(见下图)可以访问和修改各个参数。菜单和各个参数的说明将在显示屏上显示。



7. 编码器"-"键(减少)
8. (menu OK)-确认键
9. (esc)-退出键
10. 编码器"+"键(增加)

关于菜单和各个参数的信息都在显示屏上指明。

要进入菜单2，打开盖板，进行如下操作:

1. 按 (menu OK) 键，第一个数字"0"会在显示屏上闪烁;
2. 按"+"键，选择菜单"200";
3. 按 (menu OK) 键，第一个数字会在显示屏上闪烁"210";

a)**小心！**只有输入设定的进入代码后才能进入，因为此菜单只限技术人员使用。

4. 按 (menu OK) 键，222会显示在屏幕上;
5. 按"+"键，选择代码"234";
6. 按 (menu OK) 键，选择子菜单；第二个数字"220"会闪烁;
7. 按"+"键，选择子菜单，比如"230";
8. 按 (menu OK) 键，进入子菜单参数；第三个数字"230"会闪烁;
9. 按"+"键选择参数；显示屏上的文字会指示之前选择的参数的内容，比如"231-最大供暖调节值";
10. 按 (menu OK) 键进入参数；显示屏会表明数值，比如" 76 ";

b)**注意**：参数数值会显示10秒，然后会开始根据参数改变而闪烁，比如" 76 231 ";

11. 按"+"按键或者"-"按键选择新的数值，比如" 75 ";
12. 按 (menu OK) 键保存变化或按 (esc) 按键不保存就退出设置。

退出时，按住 (esc) 键直到屏幕恢复正常。

若某些菜单并不要求输服务代码，则可从菜单直接进入子菜单界面。

设置-调节-故障识别菜单

菜单	子菜单	参数	描述	数值	默认设置

菜单	子菜单	参数	描述	数值	默认设置
			备注		

2	热水炉参数				
2	1		服务代码		222
			按下✦ 调节键选择代码234，然后按menu OK键		
2	2		热水炉的一般设置		
2	2	0	缓点火	0¯90	
			详见“燃气设置”一段		
2	2	1	区域防冻温度（房间室温）	2¯10℃	5
			仅当连接BUS时方可激活		
2	2	2	变频风机开/关	0 = 禁用变频功能 1 = 启用变频功能	1
2	2	3	未激活		
2	2	4	未激活		
2	2	5	供暖点火延迟	0=无效 1=10秒 2=90秒 3=210秒	0
			Clip – in 2区域（选配）		
2	2	6	未激活		
2	2	7	未激活		
2	2	8	热水炉类型——不可修改	0¯5	5
			仅限服务使用——仅用于电路板替换		
2	3		供暖参数—1		
2	3	0	最大供暖热负荷功率	0¯99	
			仅限服务使用—仅用于电路板替换，详见“燃气设置”段落		
2	3	1	最大供暖调节值	0¯99	60
			详见“燃气设置”段落		
2	3	2	未激活		
2	3	3	未激活		
2	3	4	未激活		
2	3	5	供暖点火延迟	0 = 手动 1 = 自动	1
2	3	6	延迟时间（235设置为0）	0¯7（分钟）	3
2	3	7	供暖水泵后循环	0¯15（分钟） C0（连续）	3
2	3	8	水泵速控制	0=低速 1=高速 2=• • • •	2
2	3	9	水泵调速设定温度	10¯30℃	20
			如水泵转速控制• ••		
			△T（出水温度-回水温度）用于循环泵调速 该参数可以设置出水温度与回水温度之差， 它决定循环水泵在低速和高速之间的切换。 例如：参数14=20 如果△T＞20℃- 循环水泵将以高速运行。 如果△T度＜20-2℃，循环水泵将以低速运行。 速度切换的最少等待时间为5分钟。		
2	4		供暖—2		
2	4	0	未激活		
2	4	1	未激活		
2	4	2	未激活		
2	4	3	供暖系统后清扫	0 = 关 1 = 开	0
2	4	4	加速时间	0¯60（分钟）	16
			仅在房间温控器和温度调节器启用 时启用(参数421或521设 置为04)		
			此参数允许在水流温度以4℃为增量(最大12℃) 自动增加前设置延迟时间。如果此参数保持数 值00，该功能不启用。		
2	4	5	未激活		
2	4	6	未激活		
2	4	7	供暖压力检测装置	0=仅温度传感器 1=压力开关 2=压力传感器	1
			仅限服务使用——仅用于电路板替换		
2	4	8	未激活		
2	5		生活热水		
2	5	0	舒适功能	0=关闭 1=定时 2=常开	2
			时间限制 = 提出生活热水的请求后的30分钟内有效		
			"comfort"功能可以增加用户使用热水的舒适感。 本功能使热火炉在没有生活热水需求期间加热次热交 换器中的水升温并保温，从而使初始流出来的生活热 水已经加热到一个较高的舒适温度。然后按menu OK键进 行修改。 也可以通过按comfort键来启动或停止此功能。 该功能激活后，13号LED灯将点亮。		
2	5	1	舒适功能延迟时间	0¯120分钟	0
2	5	2	生活热水启动延迟	5¯200（0.5¯20秒）	5
			防“水锤现象”		

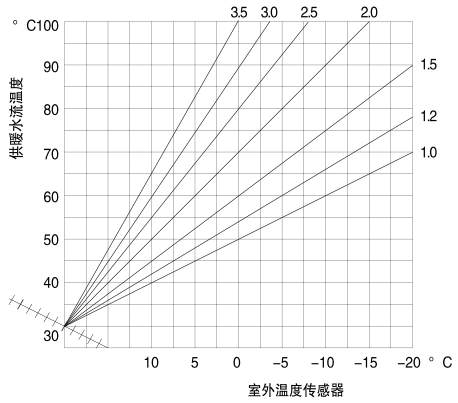
菜单	子菜单	参数	描述	数值	默认设置
			备注		

2	5	3	生活热水关闭系统	0=防水垢（超过67℃时停机） 1=超过设定温度4℃	0
2	5	4	生活热水后循环和清扫	0 = 关 1 = 开	0
			关=生活热水放尽后，若测得的热水炉温度需要，则进行3分钟的后循环和后通风。 开=生活热水放尽后，每次都进行3分钟的后循环和后通风。		
2	5	5	生活热水后供暖延迟启动	0~30分钟	0
2	5	6	未激活		
2	9		重设菜单2		
2	9	0	恢复出厂设定	重设 确认=是 退出=否	
			按菜单键重置所有默认参数		
3			太阳能 & 储水罐（内置或外置）		
3	0		通用设定		
3	0	0	储水罐温度设定点	40 ~ 60° C	
3	0	1	未激活	仅限单供暖的热水炉或连接太阳能的热水炉	
3	0	2	储水罐温度降低		
3	1		服务代码		222
			按下 ⊕ 调节键选择代码234，并按菜单/确认键。		
3	2		特殊设置		
3	2	0	杀菌功能（军团菌）	0 = OFF–1 = ON	0
			此功能避免了军团菌的产生。军团菌可能发生在20~40℃间的管道和间接式水胆内。激活此功能后，当间接式水胆温度持续低于59℃100小时以上，热水炉加热水胆中的水至65℃，并持续加热30分钟。		
3	2	1	未激活		
3	2	2	未激活		
3	2	3	水泵开启集热器温差	0 ~ 30° C	8
3	2	4	水泵关闭集热器温差	0 ~ 30° C	4
3	2	5	水泵开启最低集热器温差	10 ~ 90° C	30
3	2	6	Kollectorkick	0 = OFF–1 = ON	0
3	2	7	重新冷却功能	0 = OFF–1 = ON	0
3	2	8	未激活		
3	2	9	集热器防冻保护温度	–20 ~ + 5° C	0

仅限安装太阳能功能时

菜单	子菜单	参数	描述	数值	默认设置
			备注		

4			区域1参数		
4	0		设定点		
4	0	0	设定区域1白天温度T	16 ~ 30(° C)	19
			设定白天的房间温度 – 连接BUS设备时方有效		
4	0	1	设定区域1夜间温度T	16 ~ 30(° C)	16
			设定夜间的房间温度 – 连接BUS设备时方有效		
4	0	2	固定供暖温度	35 ~ 85 (° C)	70
			仅在温度调节类型设置在固定流量温度时启动（见421）		
4	1		服务代码		222
			按下 ⊕ 调节键选择代码234，并按菜单/确认键。		
4	2		区域1设置		
4	2	0	区域1温度范围 不得更改		
			仅在有供暖区域管理模块时启动		
4	2	1	选择温度调节的类型 按Auto键激活温度调节功能	0 = 固定流量温度 1 = 基本温度 2 = 仅限室内温度 3 = 仅限室外温度 4 = 室内温度 + 室外温度	1
4	2	2	区域1斜率	0.2 ~ 3.5	1.5



当使用室外传感器时,热水炉会根据室外温度和系统类型来计算出最适合的出水温度。

曲线型式要根据相应的系统设计温度和现有建筑物的自然散热情况来选择。对于高温系统，可以选择描述的曲线之一。

菜单	子菜单	参数	描述	数值	默认设置
			备注		

4	2	3	曲线平移 "区域1偏差"	–20～ +20	0
			为使供暖曲线适合于系统要求，可以将曲线平行移动以计算出被修改的水流温度，从而增加室温。 通过进入此参数，按"+"键可以平移曲线如图所示。 数值显示在显示屏上，从-20到+20。		
4	2	4	·房间传感器对计算设定点温度的影响 ·温度调节启用	0～ 20	20
			如果设定=0，房间温度不影响设定点的计算。 如果设定=20，房间温度对设定点的计算有最大影响。 仅在连接BUS总线设备时启动		
4	2	5	区域1 最大(供暖)温度	40～ 82(° C)	82
4	2	6	区域1 最小(供暖)温度	40～ 82(° C)	40
4	3		诊断		
4	3	0	区域1 房间温度· 仅在连接BUS总线设备时启动		
4	3	1	区域1 设定温度· 仅在连接BUS总线设备时启动		
4	3	2	区域1 供暖需求	0＝关 –1＝开	
4	3	3	区域1水泵状态	0＝关 –1＝开	
			仅在有供暖区域管理模块时启动		
4	4		单一设备管理		
4	4	0	水泵控制	0＝关 –1＝开	
			仅在有供暖区域管理模块时启动		

菜单	子菜单	参数	描述	数值	默认设置
			备注		

5			区域2参数		
5	0		区域2设定温度		
5	0	0	设定区域2白天温度	10～ 30 (° C)	19
			仅当连接BUS设备时有效。		
5	0	1	设定区域2夜间温度	10～ 30 (° C)	16
			仅当连接BUS设备时有效		
5	0	2	固定供暖温度	35～ 85 (° C)	70
			仅在温度调节类型设置在固定流量温度时启动（见521）		
5	1		服务代码		222
			按下 ⊕ 调节键选择代码234，并按菜单/确认键。		
5	2		区域2		
5	2	0	区域2温度范围 不得更改		
			仅在有供暖区域管理模块时启动		
5	2	1	选择温度调节的类型 按Auto键激活温度调节功能	0＝固定流量温度 1＝基本温度 2＝仅限室内温度 3＝仅限室外温度 4＝室内温度 + 室外温度	1
5	2	2	区域2斜率	0.2～3.5	1.5
			见参数422 当使用室外传感器时,热水炉会根据室外温度和系统类型来计算出最适合的出水温度。 曲线型式要根据相应的系统设计温度和现有建筑物的自然散热情况来选择。对于高温系统，可以选择描述的曲线之一。		
5	2	3	曲线平移“区域2偏差”	–20～ +20	0
			为使供暖曲线适合于系统要求，可以将曲线平行移动以计算出被修改的水流温度，从而增加室温。 通过进入此参数，按"+"键可以平移曲线如图所示。 数值显示在显示屏上，从-20到+20。		
5	2	4	·房间传感器对计算设定点温度的影响 ·温度调节启用	0～ 20	20
			如果设定=0，房间温度不影响设定点的计算。 如果设定=20，房间温度对设定点的计算有最大影响。 仅在连接BUS总线设备时启动		
5	2	5	区域2最大（供暖）温度	40～ 82(° C)	82
5	2	6	区域2最小（供暖）温度	40～ 82(° C)	40

菜单	子菜单	参数	描述	数值	默认设置
			备注		

5	3		诊断		
5	3	0	区域2 房间温度		
			仅在连接BUS总线设备时启动		
5	3	1	区域2 供暖出水温度		
			仅在有供暖区域管理模块时启用		
5	3	2	区域2 供暖回水温度		
			仅在有供暖区域管理模块时启用		
5	3	3	区域2 设定温度		
			仅在连接BUS总线设备时启动		
5	3	4	区域2 供暖需求	0 = 关 1 = 开	
5	3	5	区域2水泵状态	0 = 关 1 = 开	
			仅在有供暖区域管理模块时启用		
5	4		区域设备管理		
			仅在有供暖区域管理模块时启用		
5	4	0	区域2运行模式	0 = 关 1 = 开 3 = 手动	
5	4	1	区域2阀门控制	0 = 关 1 = 开 2 = 关闭	
5	4	2	区域2水泵控制	0 = 关 1 = 开	
5	5		多区域		
			仅在有供暖区域管理模块时启用		
5	5	0	水力补偿温度	0 – 120 (° C)	
5	5	1	供暖出水温度	0 – 40 (° C)	
7			测试和水气电		
7	0	0	测试模式	t--=供暖最大功率 t¯¯=生活热水最大功率 t_=最小功率	t--
			也可以按住 Reset 键10秒钟来启动，10分钟后自动解除功能或按 esc 键直接停止功能。		
7	0	1	排气功能	按 menu OK 键启用	
8			服务参数		
8	1		服务代码		222
			按下调节键“+”选择代码234，按菜单/确认键		
8	2		锅炉		
8	2	0	调节比例	0 – 165mA	
8	2	1	风机状态	0 = 关 –1 = 开	
8	2	2	未激活		
8	2	3	水泵速度	0 = 关 1 = 低速 2 = 高速	
8	2	4	自动换向阀	0 = 生活热水 1 = 供暖	
8	2	5	生活热水流量L/min		
8	2	6	风压开关状态	0 = 开 1 = 关闭	

菜单	子菜单	参数	描述	数值	默认设置
			备注		

8	3		热水炉温度		
8	3	0	供暖出水温度，℃		
8	3	1	供暖水流温度，℃		
8	3	2	供暖回水温度，℃		
8	3	3	生活热水温度，℃		
8	4		太阳能和储水罐		
8	4	0	储水罐设定温度(℃)		仅在连接太阳能套件或外部储水罐时显示
8	4	1	太阳能集热器温度		
8	4	2	生活热水进水温度		
8	4	3	NTC储水罐低温		
8	4	4	中型储水罐温度设定点		
8	4	5	太阳能水泵运行时间		
8	4	6	集热器过热温度时间	（小时/10）	
8	5		服务		
8	5	0	未激活		
8	5	1	未激活		
8	5	2	未激活		
8	5	3	未激活		
8	5	4	PCB 硬件版本		
8	5	5	PCB 软件版本		
8	5	6	PCB BUS 软件版本		
8	6		统计		
8	6	0	燃烧器供暖运行小时	（xx小时）	
8	6	1	燃烧器生活热水运行小时	（xx小时）	
8	6	2	火焰失败的次数		
8	6	3	点火周期的次数		
8	6	4	未激活		
8	6	5	供暖的持续时间		
8	7		未激活		
8	8		错误历史记录		
8	8	0	10个最近的故障	E0–E9	
			此参数允许显示最近10次热水炉故障，以及故障发生的时间（日月年）。 进入参数时，显示故障编号E00~E99。 每个故障的显示顺序如下： E00–故障号 108–故障代码 A15–故障E00出现的日期 B09–故障E00出现的月份 C06=故障E00出现的年份 （仅限连接远程Clima Manager时）		
8	8	1	故障记录重设	重设？确认=是 退出=否	

注意：部分功能需要和特殊部件配合方能使用。

维护

维护是保证热水炉安全有效运行和经久耐用的重要手段。应按照现行法规条例中给出的指示进行。定期进行燃烧分析来检查热水炉的运行效率以及确保其排放的任何污染物质都在现行法规规定的范围之内。

在开始维护工作之前，首先要:

- 关掉外部开关切断热水炉的电源;
- 关闭燃气阀和供暖和生活热水系统的阀门。

在维护工作完成后，将恢复到初始设置。

总体说明

我们建议对热水炉每年至少进行一次以下各项检查:

1. 检查水路系统连接的密封性，如有必要请更换有关的密封垫圈和配件;
2. 检查燃气系统的气密性，必要时请更换密封垫圈并拧紧;
3. 目视热水炉的总体情况;
4. 根据第"3"点的检查情况，必要时拆开燃烧器并清洗;
5. 根据第"3"点的检查情况，必要时拆开燃烧室并清洗;
6. 在第"4"点检查后，必要时拆开燃烧器和喷嘴并清洗;
7. 清洗主热交换器;
8. 确保以下供暖安全装置运行正常:
   - 限温保护安全装置;
9. 确保以下燃气系统安全装置运行正常:
   - 供气不足或点火失败保护;
10. 通过检查生活热水的温度和流量来验证热水产率;
11. 对热水炉运行进行常规检查;
12. 用砂布除掉火焰探测针上的氧化物。

注意:
清洁热水炉时，在硬水地区（钙、镁化合物大于450mg/L），请使用专用的水垢还原剂。

运行测试

在维护操作完成后，往供暖回路注水到大约1.0Bar的压力，然后释放供暖系统中的空气。

同时也给生活热水系统注水。

- 开始运行热水炉;
- 必要时，再次放掉供暖系统中的空气;
- 检查设置并确保所有的指令、调节器和感应部件都正常工作;
- 检查密封，检查烟气排放系统/进气系统都运行正常。

排水程序

必须用以下程序放掉供热系统中的水:

- 关闭热水炉，确保关掉外部电源开关和关闭燃气阀门;
- 松开自动排气阀;
- 打开系统排水阀，把放出的水收集在一个容器里;
- 从系统最低点排空水(在适用处);

当环境温度可能低于零度时，应将热水炉置于防冻保护工作状态。在冬季长期停机时，应将热水炉采暖和生活热水系统内的水全部排空；或者只排生活热水，而在采暖水中加入防冻剂。

排放生活热水系统的水需进行如下操作:

- 关闭总水管进水阀
- 打开所有热水和冷水龙头;
- 从系统最低点排水(在合适处)。

不要混和不同类型的防冻剂。

对于使用不恰当的防冻剂或添加剂引起的任何设备或系统的损害，制造商不承担任何责任。

警告

在操作前，排空所有可能含有热水的部件，必要时进行放气和对部件除垢，确保房间通风良好，穿着防护服，避免混和不同防冻剂产品，并且保护热水炉和周围物品。

密封所有用于读取燃气压力或进行任何燃气调节的开口。

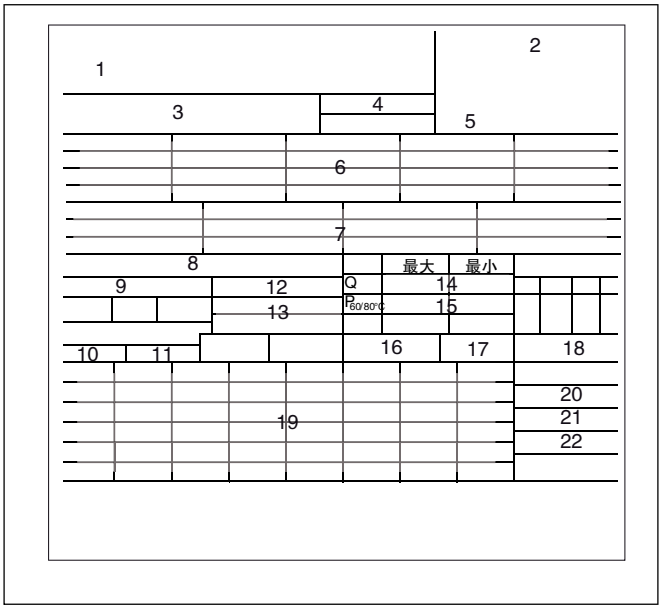
确保喷嘴和供应的燃气相一致。

如果发现设备泄露产生的燃烧味或冒烟，或者闻到燃气味道，切断电源，关闭燃气阀门，打开窗户，打电话向技术人员求助。

用户须知

告知用户热水炉的操作方式。
特别是要提供使用说明书，并告知说明书必须放在热水炉边。
此外，还须告知用户应执行以下工作：
– 定期检查热水炉水压（告知用户如何加水与排气）。
– 如何调节温度与调整装置，以保证热水炉运行正确的前提下以更加经济节约的方式工作。
– 必须按规定定期检修热水炉。
– 任何情况下，均不得擅自更改燃烧空气气源以及燃烧气设定。

铭牌上的标志



图例：
1. 品牌
2. 生产商
3. 热水炉型号——序列号
4. 商业推荐
5. 证书编号
6. 目的国——燃气类别
7. 燃气设置
8. 安装类型
9. 电气参数
10. 生活热水最高水压
11. 生活热水最低水压
12. 热水炉类型
13. 氮氧化物等级/功率
14. 额定热输入
15. 供暖输出功率
16. 生活热水专用流速
17. 热水炉输出功率
18. 生活热水额定热输入
19. 使用燃气
20. 热水炉运行时周围的温度
21. 中央供暖最高温度
22. 生活热水最高温度

INDEX

⚠ Advice for the installer

The installation and first ignition of the boiler must be performed by qualified personnel in compliance with current national regulations regarding installation, and in conformity with any requirements established by local authorities and public health organisations.
After the boiler has been installed, the installer must ensure that the end user receives the declaration of conformity and the operating manual, and should provide all necessary information as to how the boiler and the safety devices should be handled.

This appliance is designed to produce hot water for domestic use.
It should be connected to a heating system and a distribution network for domestic hot water, both of which must be compatible with its performance and power levels.
The use of the appliance for purposes other than those specified is strictly forbidden. The manufacturer cannot be held responsible for any damage caused by improper, incorrect and unreasonable use of the appliance or by the failure to comply with the instructions given in this manual.
Installation, maintenance and all other interventions must be carried out in full conformity with the governing legal regulations and the instructions provided by the manufacturer. Incorrect installation can harm persons, animals and possessions; the manufacturing company shall not be held responsible for any damage caused as a result. The boiler is delivered in a carton. Once you have removed all the packaging, make sure the appliance is intact and that no parts are missing. If this is not the case, please contact your supplier.
Keep all packaging material (clips, plastic bags, polystyrene foam, etc.) out of reach of children as it may present a potential hazard.
In the event of a fault and/or malfunction, turn the appliance off, turn off the gas cock and do not attempt to repair it yourself. Contact a qualified professional instead.
Before any maintenance or repair work is performed on the boiler, make sure you have disconnected it from the electricity supply by switching the external bipolar switch to the "OFF" position and removing the fuse.
All repairs, which should only be performed using original spare parts, should be carried out by a qualified professional. Failure to comply with the above instructions could compromise the safety of the appliance and invalidate all liability on the part of the manufacturer.
In the event of any maintenance or other structural work in the immediate vicinity of the ducts or flue gas exhaust devices and their accessories, switch the appliance off by switching the external bipolar switch to the "OFF" position and shutting off the gas control valve. When the work has been completed, ask a qualified technician to check the efficiency of the ducting and the devices.
Turn the boiler off and turn the external switch "OFF" to clean the exterior parts of the appliance.
Clean using a cloth dampened with soapy water. Do not use aggressive detergents, insecticides or toxic products. If the appliance is used in full compliance with current legislation, it will operate in a safe, environmentally-friendly and cost-efficient manner.
If using kits or optional extras, make sure they are authentic.

CE labelling

The CE mark guarantees that the appliance conforms to the following directives:

- **90/396/CEE** relating to gas appliances
- **2004/108/CEE** relating to electromagnetic compatibility
- **92/42/CEE** relating to energy efficiency
- **2006/95/CEE** relating to electrical safety

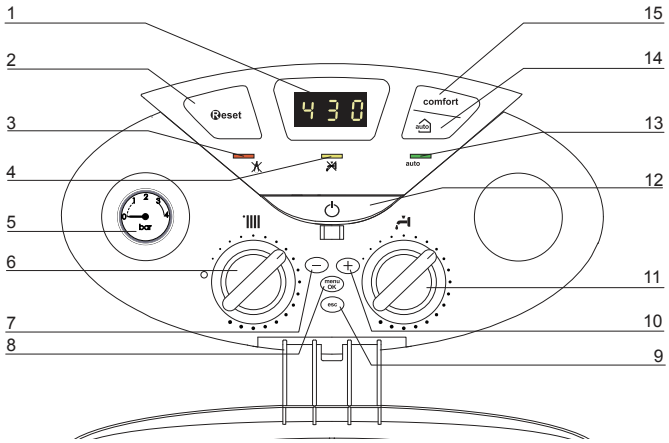
Safety regulations

Key to symbols:
⚠ Failure to comply with this warning implies the risk of personal injury, in some circumstances even fatal
△ Failure to comply with this warning implies the risk of damage, in some circumstances even serious, to property, plants or animals.

Install the appliance on a solid wall which is not subject to vibration.
⚠ Noisiness during operation.
When drilling holes in the wall for installation purposes, take care not to damage any electrical wiring or existing piping.
⚠ Electrocution caused by contact with live wires. Explosions, fires or asphyxiation caused by gas leaking from damaged piping. Damage to existing installations. Flooding caused by water leaking from damaged piping.
Perform all electrical connections using wires which have a suitable section.
△ Fire caused by overheating due to electrical current passing through undersized cables.
Protect all connection pipes and wires in order to prevent them from being damaged.
⚠ Electrocution caused by contact with live wires. Explosions, fires or asphyxiation caused by gas leaking from damaged piping. Flooding caused by water leaking from damaged piping.
Make sure the installation site and any systems to which the appliance must be connected comply with the applicable norms in force.
⚠ Electrocution caused by contact with live wires which have been installed incorrectly.
△ Damage to the appliance caused by improper operating conditions.
Use suitable manual tools and equipment (make sure in particular that the tool is not worn out and that its handle is fixed properly); use them correctly and make sure they do not fall from a height. Replace them once you have finished using them.
⚠ Personal injury from the falling splinters or fragments, inhalation of dust, shocks, cuts, pricks and abrasions. Damage to the appliance or surrounding objects caused by falling splinters, knocks and incisions.
Use electrical equipment suitable for its intended use (in particular, make sure that the power supply cable and plug are intact and that the parts featuring rotary or reciprocating motions are fastened correctly); use this equipment correctly; do not obstruct passageways with the power supply cable, make sure no equipment could fall from a height. Disconnect it and replace it safely after use.
⚠ Personal injury caused by falling splinters or fragments, inhalation of dust, knocks, cuts, puncture wounds, abrasions, noise and vibration. Damage to the appliance or surrounding objects caused by falling splinters, knocks and incisions.
Make sure any portable ladders are positioned securely, that they are suitably strong and that the steps are intact and not slippery and do not wobble when someone climbs them. Ensure someone provides supervision at all times.
⚠ Personal injury caused by falling from a height or cuts (stepladders shutting accidentally).
Make sure any rolling ladders are positioned securely, that they are suitably strong, that the steps are intact and not slippery and that the ladders are fitted with handrails on either side of the ladder and parapets on the landing.
⚠ Personal injury caused by falling from a height.
During all work carried out at a certain height (generally with a difference in height of more than two metres), make sure that parapets are used to surround the work area or that individual harnesses are used to prevent falls. The space where any accidental fall may occur should be free from dangerous obstacles, and any impact upon falling should be cushioned by semi-rigid or deformable surfaces.
⚠ Personal injury caused by falling from a height.
Make sure the workplace has suitable hygiene and sanitary conditions in terms of lighting, ventilation and solidity of the structures.
⚠ Personal injury caused by knocks, stumbling etc.
Protect the appliance and all areas in the vicinity of the work place using suitable material.
△ Damage to the appliance or surrounding objects caused by falling splinters, knocks and incisions.
Handle the appliance with suitable protection and with care.
△ Damage to the appliance or surrounding objects from shocks, knocks, incisions and squashing.
During all work procedures, wear individual protective clothing and equipment.
⚠ Personal injury caused by electrocution, falling splinters or fragments, inhalation of dust, shocks, cuts, puncture wounds, abrasions, noise and vibration.
Place all debris and equipment in such a way as to make movement easy and safe, avoiding the formation of any piles which could yield or collapse.
△ Damage to the appliance or surrounding objects from shocks, knocks, incisions and squashing.
All operations inside the appliance must be performed with the necessary caution in order to avoid abrupt contact with sharp parts.
⚠ Personal injury caused by cuts, puncture wounds and abrasions.
Reset all the safety and control functions affected by any work performed on the appliance and make sure they operate correctly before restarting the appliance.
△ Explosions, fires or asphyxiation caused by gas leaks or an incorrect flue gas exhaust.
⚠ Damage or shutdown of the appliance caused by out-of-control operation.
Before handling, empty all components that may contain hot water, carrying out any bleeding if necessary.
⚠ Personal injury caused by burns.
Descale the components, in accordance with the instructions provided on the safety data sheet of the product used, airing the room, wearing protective clothing, avoid mixing different products, and protect the appliance and surrounding objects.
△ Personal injury caused by acidic substances coming into contact with skin or eyes; inhaling or swallowing harmful chemical agents. Damage to the appliance or surrounding objects due to corrosion caused by acidic substances.
If you detect a smell of burning or smoke, keep clear of the appliance, disconnect it from the electricity supply, open all windows and contact the technician.
⚠ Personal injury caused by burns, smoke inhalation, asphyxiation.

product description

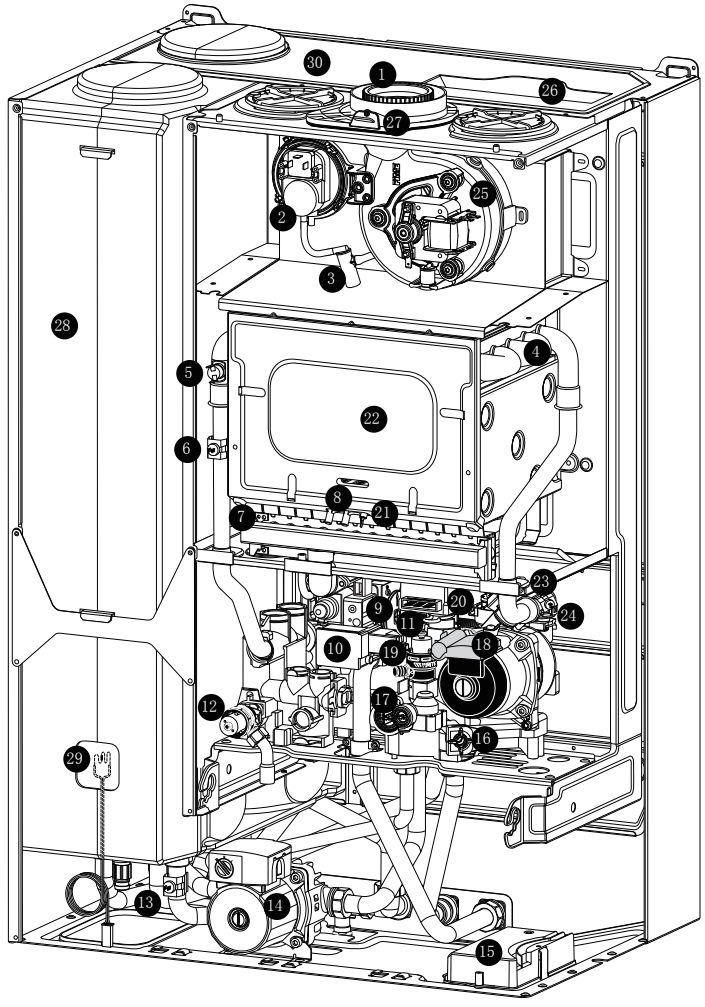
Control Panel



Legend:

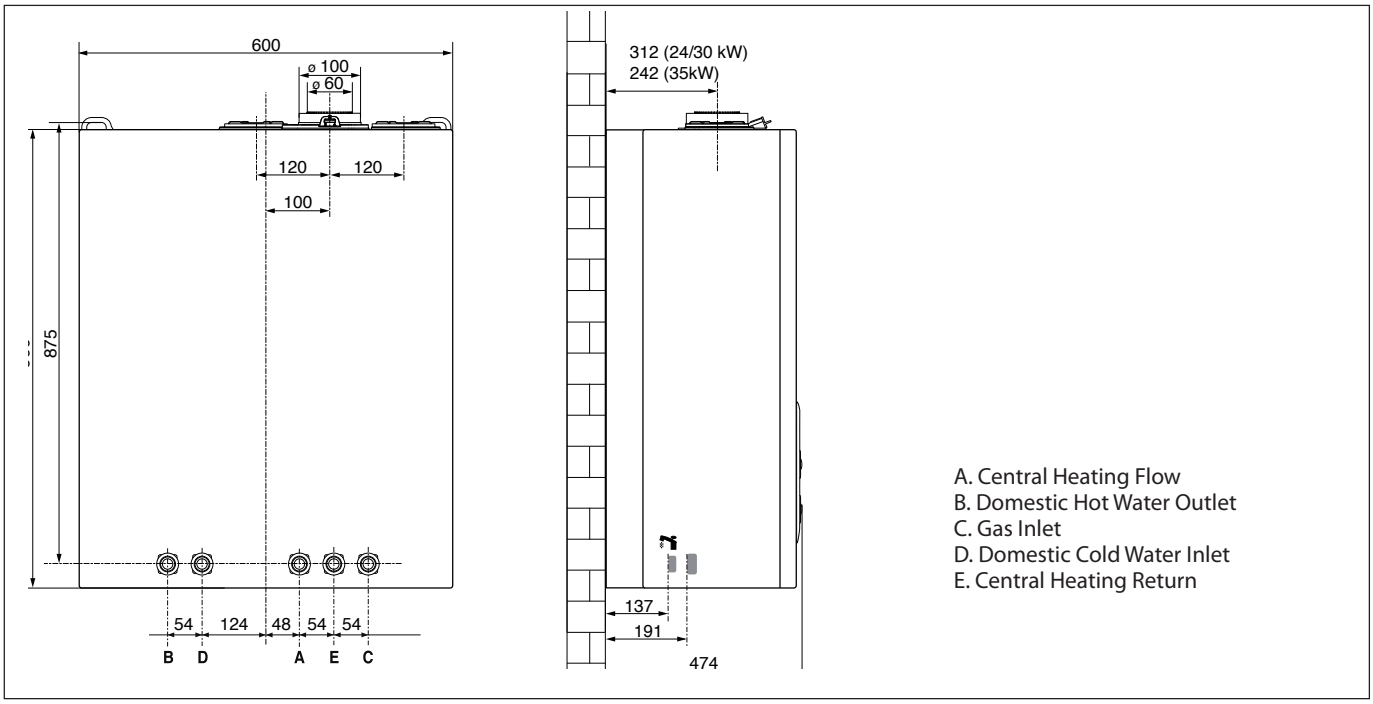
1. Display
2. RESET button
3. Red LED (illuminated = boiler lockout)
4. Yellow LED (illuminated= Heating Only)
5. Heating System Pressure Gauge
6. Selector knob for Summer/Winter Central Heating
   Temperature Adjustment Knob
7. Programming "-" key
8. Menu/Ok button
9. Esc button
10. Programming "+" key
11. Domestic Hot Water adjustment knob
12. ON/OFF Switch
13. Green led (auto function activate)
14. Auto button (to active Thermoregulation)
15. Heating only button

Overall viewa



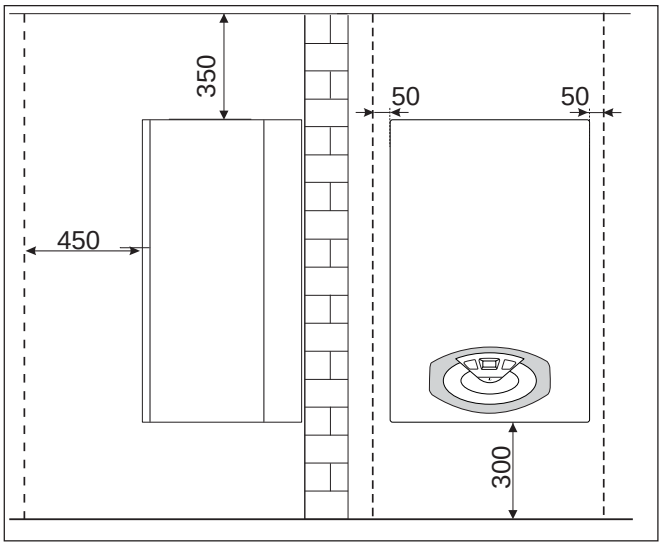
1. Flue connector
2. Air pressure switch
3. Condensate discharge
4. Main Heat Exchanger
5. Overheat thermostat
6. C.H. Flow temperature probe
7. Burner
8. Ignition electrodes
9. Gas valve
10. Spark generator
11. Secondary heat exchanger
12. Safety valve 3 bar - Heating circuit
13. D.H.W. Temperature probe
14. Circulation Pump - D.H.W. circuit
15. Pheriferical box connection
16. C.H. circuit filter
17. D.H.W. Flow switch
18. Circulation Pump with air release valve - Heating circuit
19. Safety valve 7 bar - D.H.W. circuit
20. Diverter valve
21. Detection Electrode
22. Combustion Chamber
23. C.H. Return temperature probe
24. Switch On/Off
25. Modulating fun
26. Expansion vessel - Heating circuit
27. Combustion Analysis Test Point
28. Storage (20+20)
29. Storage temperature probe
30. Expansion vessel - D.H.W. circuit

Overall Dimensions

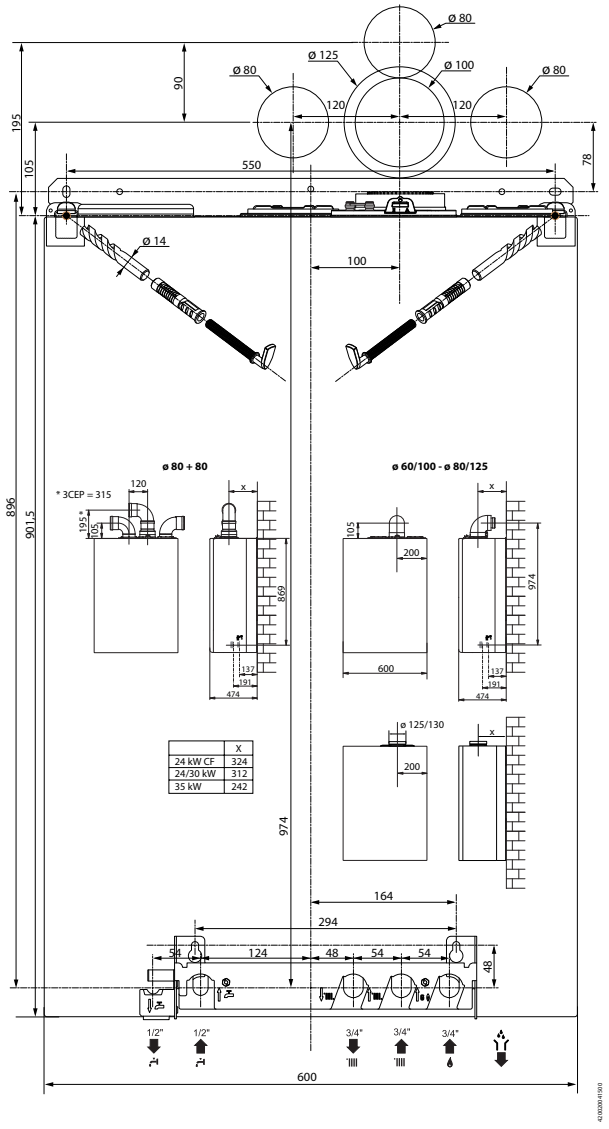


Minimum clearances

In order to allow easy access to the boiler for maintenance operations, The boiler must be installed in accordance with the clearances stated below.



Template



product description

Technical Data

GEN. NOTES	Model Name		**CLAS B 28 FF**
	CE certification (pin)		1312BR4793
	Boiler type		C12-C32-C42-C52-C62-C82-B22-B22p-B32
ELECTRICAL PERFORMANCE	Max/min nominal heat input(Hi)	kW	30,0/13
	Max/min nominal heat input (Hs)	kW	33,3/14,4
	Max/min nominal heat input for hot water (Hi)	kW	31,3/13,0
	Max/min nominal heat input for hot water (Hs)	kW	34,8/14,4
	Heat output: max/min	kW	27,0/12,1
	D.H.W. Heat output: max/min	kW	29,5/12,1
	Combustion efficiency (at flue) Hi/Hs	%	93,9
	Gross efficiency of nominal heat input (60/80 °C) Hi/Hs	%	90,0/84,3
	Gross efficiency at 30 % at 47°C Hi/Hs	%	93,2/83,9
	Gross efficiency at minimum power Hi/Hs	%	93,0/83,7
	Number of efficiency stars (Directive 92/42/EEC)	stars	***
	Rating Sedbuk	class	D
	Ma. heat loss to the casing (ΔT = 50°C)	%	0,4
	Heat loss through the flue when burner on	%	6,1
EMISSIONS	Residual discharge head	Pa	104
	Nox class	class	3
	Flue fumes temperature (G20)	°C	114
	CO2 content$_2$ (G20)	%	6,4
	CO content (0 %0$_2$)	ppm	92
	O2 content2 (G20)	%	8,9
	Max capacity fumes (G20)	kg/h	67,5
	Excess air	%	74
HEATING CIRCUIT	Load losses water side (max) ΔT=20°C	(mbar)	200
	Residual head for the system	bar	0,25
	Expansion vessel pre-charged pressure - heating circuit	bar	1
	Maximum central heating circuit pressure	bar	3
	Expansion vessel capacity - heating circuit	l	12
	Expansion vessel capacity - D.H.W. circuit	l	2
	Central heating temperature: max/min(high temperature range)	°C	35/85
DOMESTIC HOT WATER CIRCUIT	Domestic hot water temperature max/min	°C	65/40
	Storage capacity	l	40
	Specific flow rate of domestic hot water system (10 min. with ΔT=30°C))	l/min	13,3
	D.H.W. flow rate instant ΔT=25°C	l/min	25,2
	D.H.W. flow rater instant ΔT=35°C	l/min	18,0
	Hot water comfort stars (EN13203)	stars	***
	D.H.W. minimum flow rate	l/min	1,7
	Domestic hot water pressure max/min	bar	7
ROOMELECTRICAL DATA	Power supply voltage/frequency	V/Hz	230/50
	Power consumption	W	168
	Minimum operating room temperature	°C	5
	Electric system grades of protection	IP	X5D
	Weight	kg	55

Before installing the appliance

The boiler heats water to a temperature below boiling.

It should be connected to a heating system and to a domestic water mains supply, both of which must correspond in size to the performance and its power of the appliance.

Before connecting the boiler, it is first necessary to perform the following operations:

- Carefully wash the system piping in order to remove any screw thread or welding residues, or any dirt which might prevent the boiler from operating correctly.
- Make sure that the boiler is set up for operation with the type of gas available (read the information on the packaging label and on the boiler data plate).
- Make sure that there are no obstacles inside flue exhaust and that it does not contain any discharge from other appliances, unless the flue is meant to serve more than one user (in accordance with current legal requirements).
- Where there is already a connection to existing flue exhausts, check that these exhausts have been perfectly cleaned and are without residues, because any disconnection could obstruct the passage of fumes and create potentially dangerous situations.
- Make sure that, where unsuitable flue exhausts are attached, they have been ducted.
- In areas with particularly hard water, limescale may build up on the components inside the boiler and reduce its overall efficiency.

P-type boilers, with combustion chambers and air supply circuits which are completely sealed from the air outside, do not have any limitations concerning the ventilation and size of the room in which they are installed.

So that the normal operation of the boiler is not compromised, the place in which it is installed must be suitable with regard to the operating limit temperature value and the appliance should be protected so that it does not come into direct contact with atmospheric agents.

The boiler must be installed on a solid, non-combustible, permanent wall to prevent access from the rear.

When creating a space for the boiler, the minimum distances (which ensure that various parts of the boiler may be accessed after it has been installed) should be respected.

⚠ **WARNING**

No inflammable items should be left in the vicinity of the boiler.

Make sure the installation site and any systems to which the appliance must be connected are fully compliant with the current applicable legislation.

If dust and/or aggressive vapours are present in the room in which it is to be installed, the appliance must operate independently of the air inside the room.

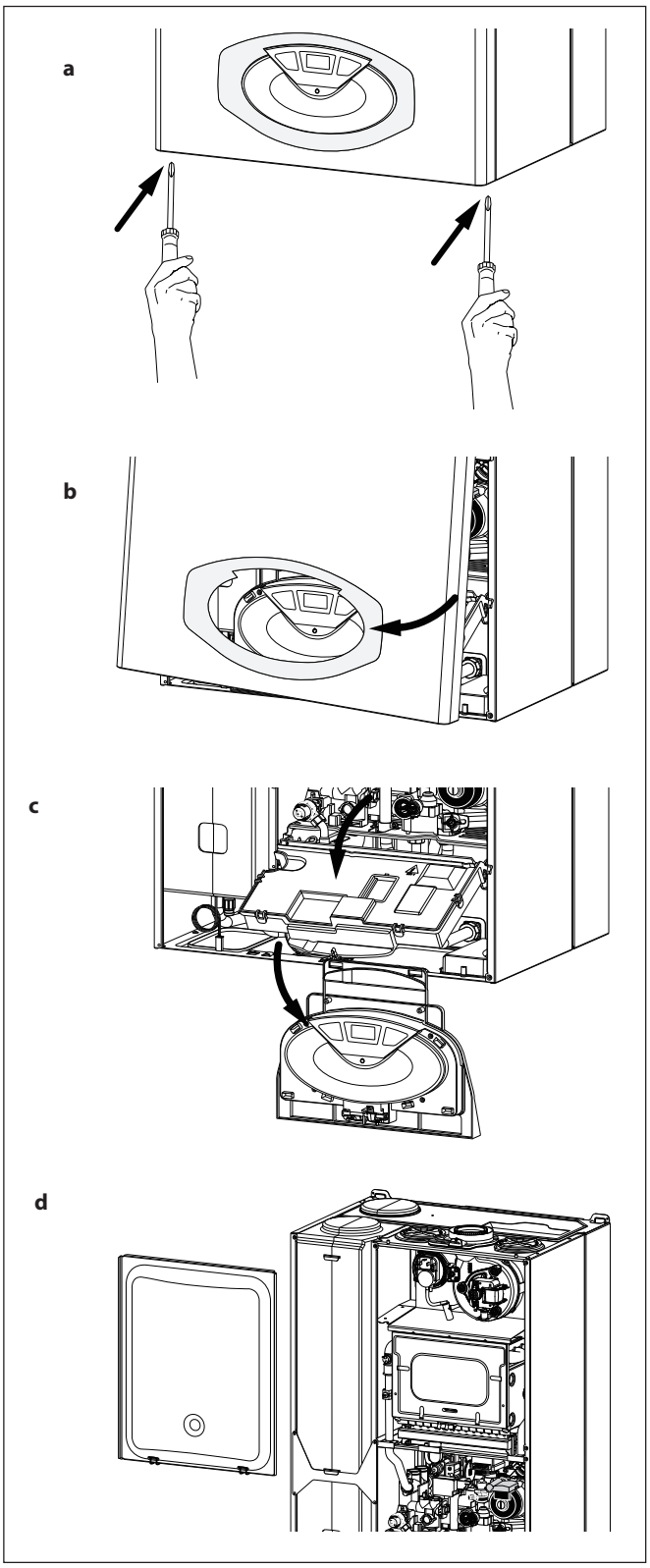
⚠ **The installation and first ignition of the boiler must be performed by qualified personnel in compliance with current national regulations regarding installation, and in conformity with any requirements established by local authorities and public health organisations.**

Instructions for opening the casing and performing an internal inspection

Before performing any work on the boiler, first disconnect it from the electrical power supply using the external bipolar switch and shut off the gas valve.

To access the inside of the boiler, the following is necessary:

- loosen the two screws on the front casing (**a**), pull it forwards and unhook it from the upper pins (**b**)
- unhook the control panel (Fig. 7.29) and clip it into the frame of the boiler (**c**)
- unhook the two clips on the panel closing off the combustion chamber. Pull it forwards and unhook it from the upper pins (**d**)



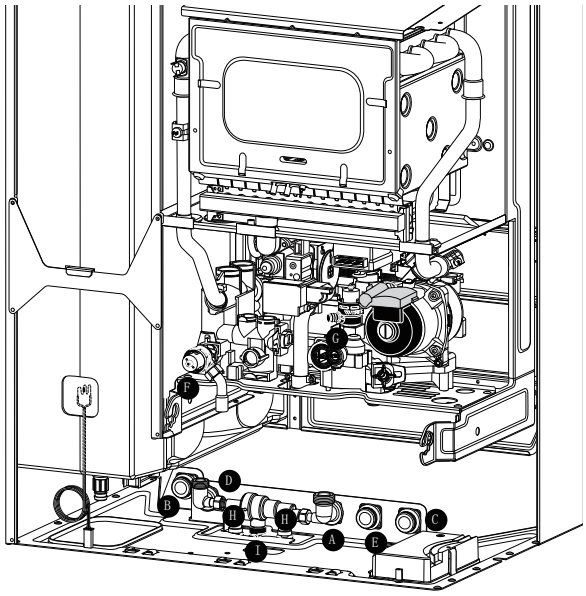
Gas connection
The boiler was designed to use gases belonging to the categories as shown in the following table.

COUNTRY	MODEL	CATEGORIES
	CLAS B 28 FF	NG 12T

Make sure, using the labels on the packaging and the data plate on the appliance itself, that the boiler is in the correct country and that the gas category for which the boiler was designed corresponds to one of the categories available in the country where it will be used.
The gas supply piping must be created and measured out in compliance with specific legal requirements and in accordance with the maximum power of the boiler; you should also make sure that the shut-off valve is the right size and that it is connected correctly.
Before carrying out the installation, it is recommended that the fuel pipes are cleaned thoroughly in order to remove any residues which could prevent the boiler from operating correctly.
Check that the supplied gas corresponds to the type of gas for which the boiler was designed (see the data plate located on the appliance itself).
It is also important to check that the pressure of the gas (methane or LPG) you will be using to feed the boiler is suitable, because if it is insufficient the power of the generator may be reduced, causing inconvenience for the user.

Water connection
The illustration shows the connections for the water and gas attachments of the boiler.
Check that the maximum water mains pressure does not exceed 6 bar; if it does, a pressure reducing valve must be installed.

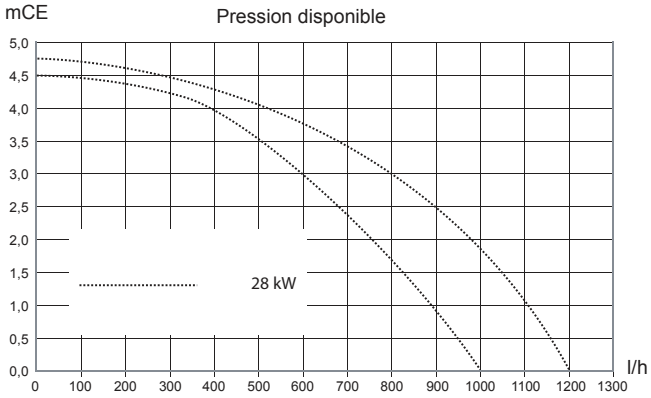
View of the Boiler Connections



Legend:
A. Central heating Flow
B. Domestic Hot Water Outlet
C. Gas Inlet
D. Domestic Cold Water Inlet
E. Central Heating Return
F. Safety Valve Discharge heating circuit
G. Safety Valve DischargeD.H.W. circuit
H. Filling valves
I. Drain Valve

For the measuring of the pipes and of the heating bodies in the heating system, the residual head value should be calculated as a function of the requested flow rate, in accordance with the values shown in the circulation pump graph.

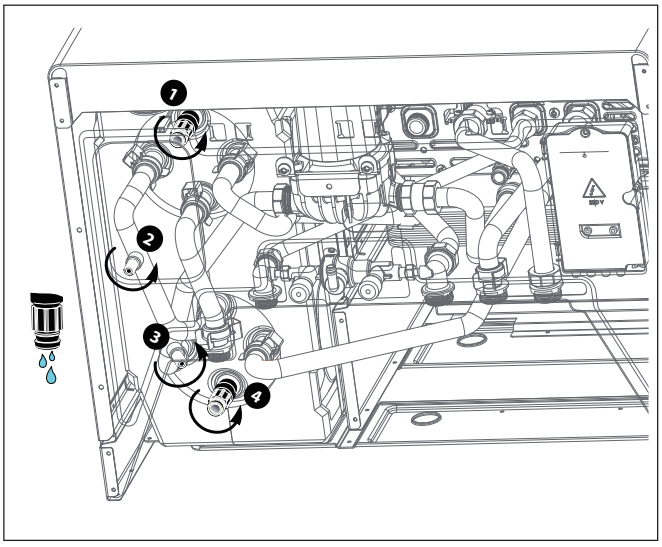
Residual Head of the Boiler ΔT 20°C



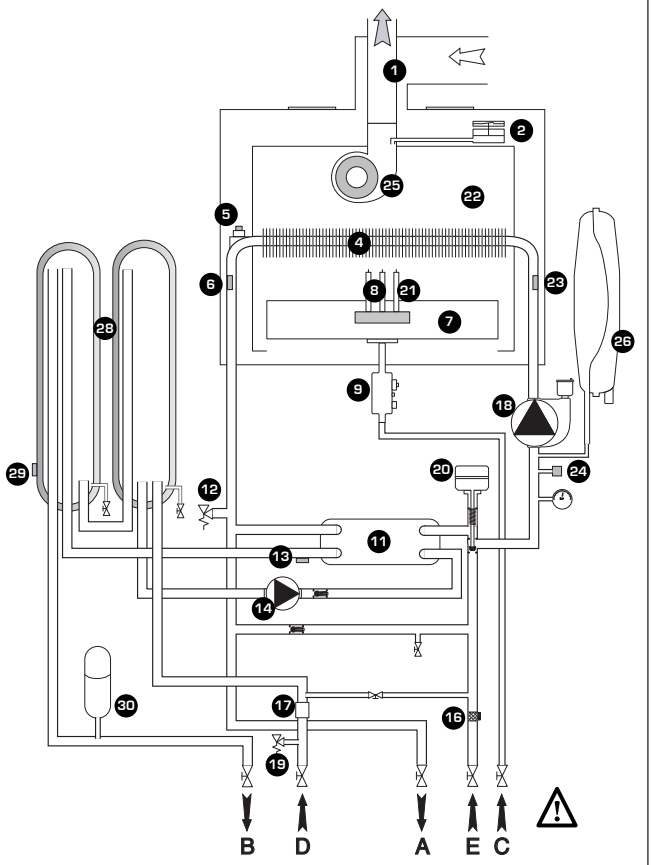
Excessive pressure device
Fit the drain pipe for safety valves "**F**" and **"G"**, included in the hydraulic kit. The excessive pressure device outlet (see Figure) must be connected to a drainage siphon which can be checked visually in order to prevent maintenance procedures causing harm to people, animals or property (the manufacturer shall not be held responsible for any such damage).

Cleaning the heating system
Where the boiler is used in conjunction with an older system, various substances and additives may be present in the water and these could have an adverse effect on the operation and durability of the new boiler. Before replacing the old boiler, you must arrange for the system to be cleaned thoroughly in order to eliminate any residue or dirt which could compromise the correct operation of the water heater. Make sure the capacity of the expansion vessel is suited to the amount of water contained in the system.

Drain the storage



Water circuit diagram



1. Collettore scarico fumi
2. Air Pressure Switch
4. Main Heat Exchanger
5. Overheat Thermostat
6. Central Heating Flow Temperature Probe
7. Burner
8. Ignition Electrodes
9. Gas Valve
11. Secondary Exchanger
12. Safety valve 3 bar - C.H. circuit
13. D.H.W. temperature probe
14. Circulation Pump - D.H.W. circuit
16. Central Heating Filter
17. D.H.W. Flow Switch
18. Modulating Circulation Pump with air release valve - C.H. circuit
19. Safety valve 7 bar - D.H.W. circuit
20. Diverter valve
21. Detection electrode
22. Combustion chamber
23. Central Heating Return Temperature Probe
24. Switch On/Off
25. Modulating Fun
26. Expansion vessel - C.H. circuit
28. Storage
29. Storage temperature probe
30. Expansion vessel - D.H.W. circuit

Connecting the Flue

The boiler is designed to operate in B mode (by drawing air from the room) and in C mode (by drawing air from outside).

When installing an exhaust system be careful when handling the seals, in order to avoid flue gas leaking into the air circuit.

Horizontally-installed piping must have a downward incline of 3% so as to avoid the build-up of condensate.

Nel caso di installazione di tipo B il locale in cui

When type B installation is used, the room in which the coiler is installed must be ventilated using a suitable air inlet which complies with current legislation. In rooms where corrosive vapours may be present (for example, laundry rooms, hair studios, rooms where galvanic processes take place, etc.) it is important that type C installation is used, with air for combustion drawn from outside. In this way the boiler is protected from the effects of corrosion.

When implementing coaxial suction/exhaust systems the use of authentic accessories is obligatory.

The flue gas exhaust ducting must not be in contact with or placed near flammable materials, and must not cross building structures or walls made using flammable material.

When replacing an old boiler, the ventilation and flue gas exhaust system must always be replaced.

The flue gas exhaust ducting joint should be created using a male/female coupling and a seal. Couplings should always be arranged so that they go against the direction of the condensate flow.

Types of boiler - flue exhaust connection

- coaxial connection of the boiler to the suction/exhaust ducting
- split connection of the boiler to the exhaust ducting with air suction from outside
- split connection of the boiler to the exhaust ducting with air suction from the room.

Products which are resistant to condensate must be used in the connection between the boiler and the flue gas exhaust. For details relating to connection lengths and direction changes, please consult the "exhaust types" table.

The suction/exhaust ducting connection kits are supplied separately from the appliance, according to different installation solutions.

The boiler is set up for connection to a coaxial suction and flue gas exhaust ducting system.

If there is any loss of pressure in the piping, please refer to the gas flue accessories catalogue. Supplementary resistance must be borne in mind during the sizing process mentioned above.

For the calculation method, equivalent length values and installation examplesplease refer to the gas flue accessories catalogue.

WARNING

Make sure that the flue gas exhaust and ventilation ducting are not obstructed.

Make sure that there are no leaks along the flue gas exhaust ducting.

The boiler is set up for connection to a 60/100 coaxial air intake and flue gas exhaust ducting system.

To use split types of suction and exhaust, one of the two air intakes must be used.

Remove the stopper by loosening the screw and insert the air intake attachment, fixing it in place using the screw provided.

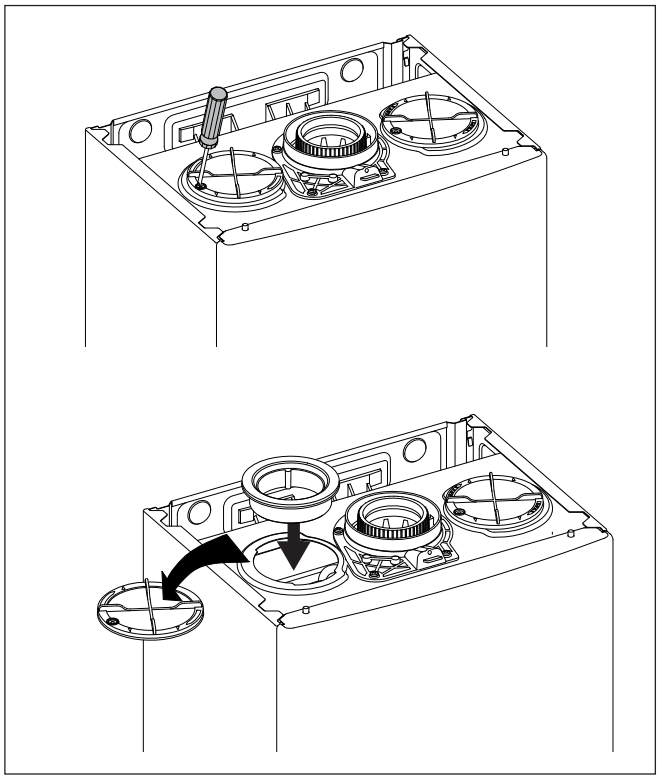
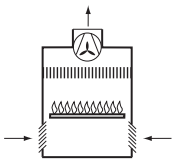
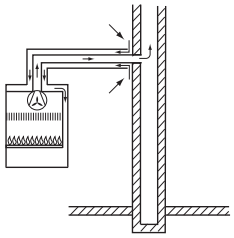
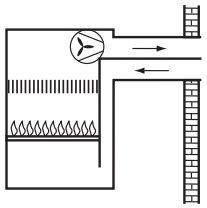
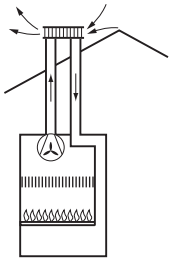
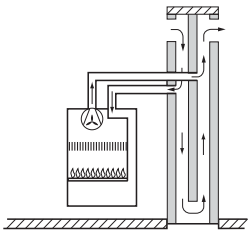
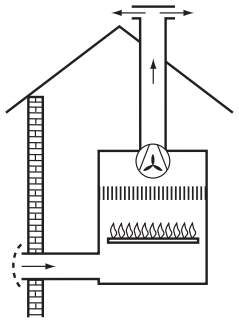
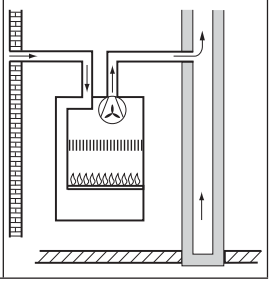


Table of flue gas exhaust duct lengths

Type		Maximum Extension Exhaust-air (m)				Diameter of pipe (mm)
		CLAS B 28 FF				
		reduction ø 44		without reduction		
		MIN	MAX	MIN	MAX	
Coaxial System	C12 C32 C42	0,5	0,75	0,75	4	ø 60/100
	B32	0,5	0,75	0,75	4	
	C12 C32 C42	0,75	3	3	11	ø 80/125
	B32	0,75	3	3	11	
Twin-pipe System	C12 C32 C42	S1 = S2				ø 80/80
		0,5/0,5	11/11	11/11	25/25	
	C52 C82	1 + S2				ø 80/80
		1/0,5	1/27	1/27	1/51	
	B22	6	6	0	10	ø 80

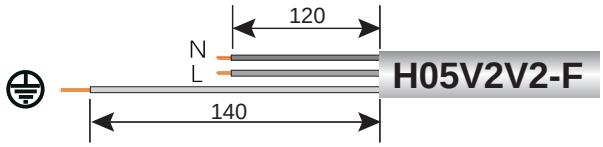
S1 = Air intake S2 = Flue gas exhaust

Type of air suction/flue gas exhaust ducting

Combustion air drawn from the room		
B22	*Air drawn from the room*	
B32	*Individual or shared flue gas exhaust ducting built into the building* *Air drawn from the room*	
Combustion air intake from outside		
C12	*Flue gas exhaust and air suction duct through external wall in the same range of pressure*	
C32	*Flue gas exhaust andair suction duct from outsidewithroof terminalin the same range of pressure*	
C42	*Individual or shared flue gas exhaust and air suction through flue ducting built into the building*	
C52	*Flue gas exhaust leading outside and air suction duct through external wall not in the same range of pressure*	
C82	*Flue gas exhaust through individual or shared flue ducting built into the building* *Air suction through external wall*	

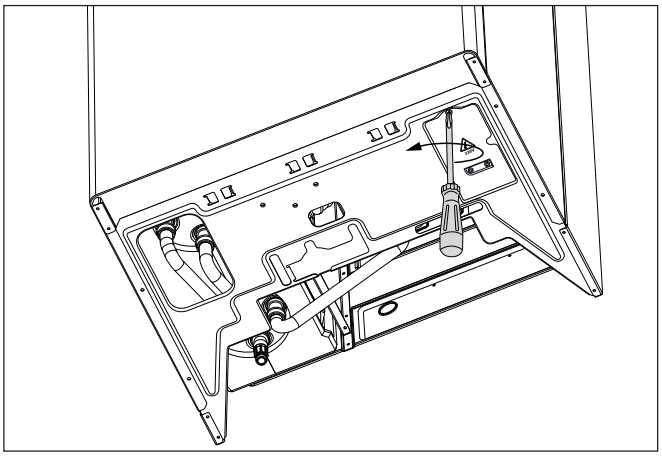
WARNING
Before performing any work on the boiler, first disconnect it from the electrical power supply using the external bipolar switch.

Electrical connections
For increased safety, ask a qualified technician to perform a thorough check of the electrical system.
The manufacturer is not responsible for any damage caused by the lack of a suitable earthing system or by the malfunctioning of the electricity mains supply.
Make sure that the system is able to withstand the maximum power absorbed by the boiler (this is indicated on the appliance data plate).
Check that the section of the wires is suitable and is not less 0,75 mm^2
The appliance must be connected to an effiecient earthing system if it is to operate correctly.
The power supply cable must be connected to a 230V-50Hz network, where the L-N poles and the earth connection are all respected.
In the event that the power supply cable must be changed, replace it with one with the same specifications.



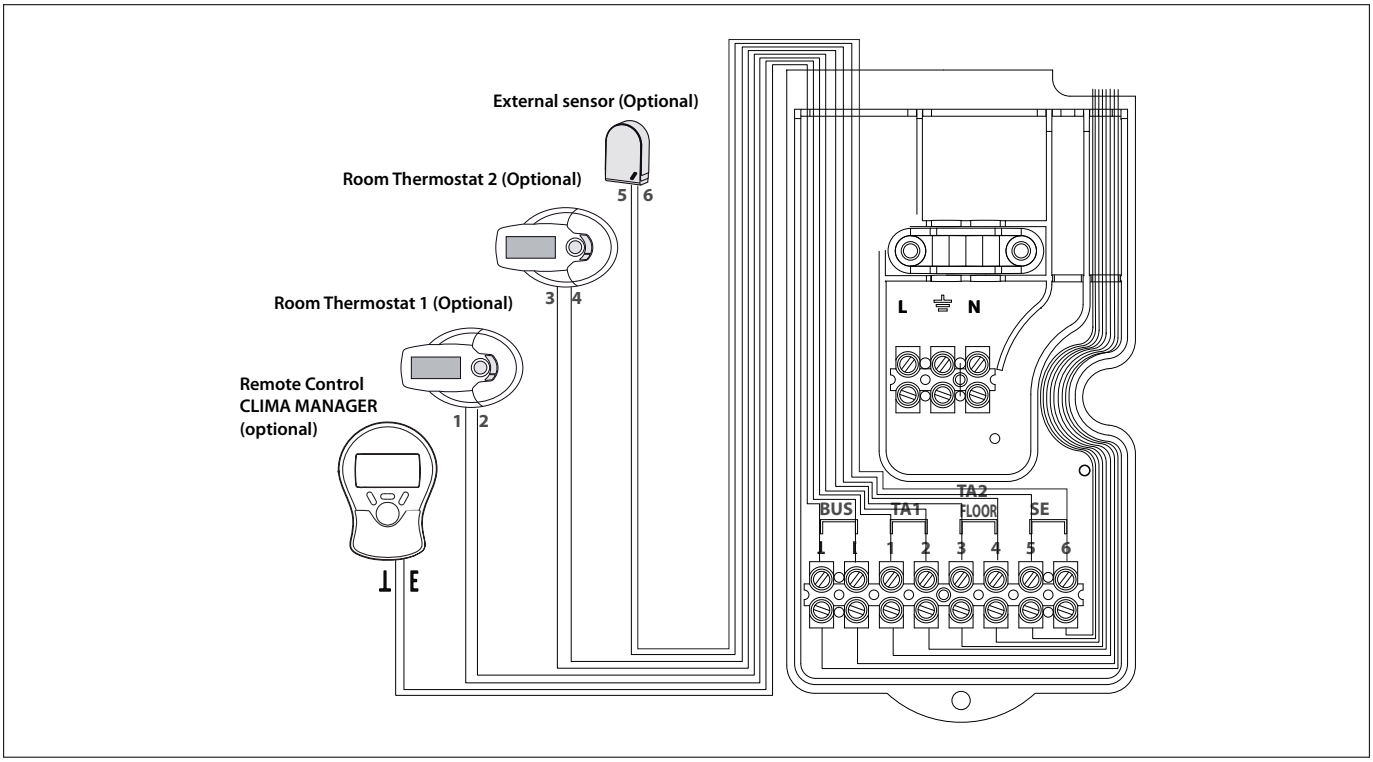
Power supply cable
Important!
Connection to the electricity mains supply must be performed using a fixed connection (not with a mobile plug) and a bipolar switch with a minimum contact opening of 3 mm must be fitted.
The use of multiplugs, extension leads or adaptors is strictly prohibited.
It is strictly forbidden to use the piping from the hydraulic, heating and gas systems for the appliance earthing connection.
The boiler is not protected against the effects caused by lightning. If the mains fuses need to be replaced, use 2A rapid fuses.

Peripheral unit connection
To access peripheral unit connections carry out the following steps:
- Disconnect the boiler from the power supply
- Open the peripherical box connection located below the boiler



The terminal board may be accessed in order to connect:
Bus = Remote Control CLIMA MANAGER
TA1 = Zone 1 Room Thermostat
TA2 = Zone 2 Room Thermostat/
SE = External sensor

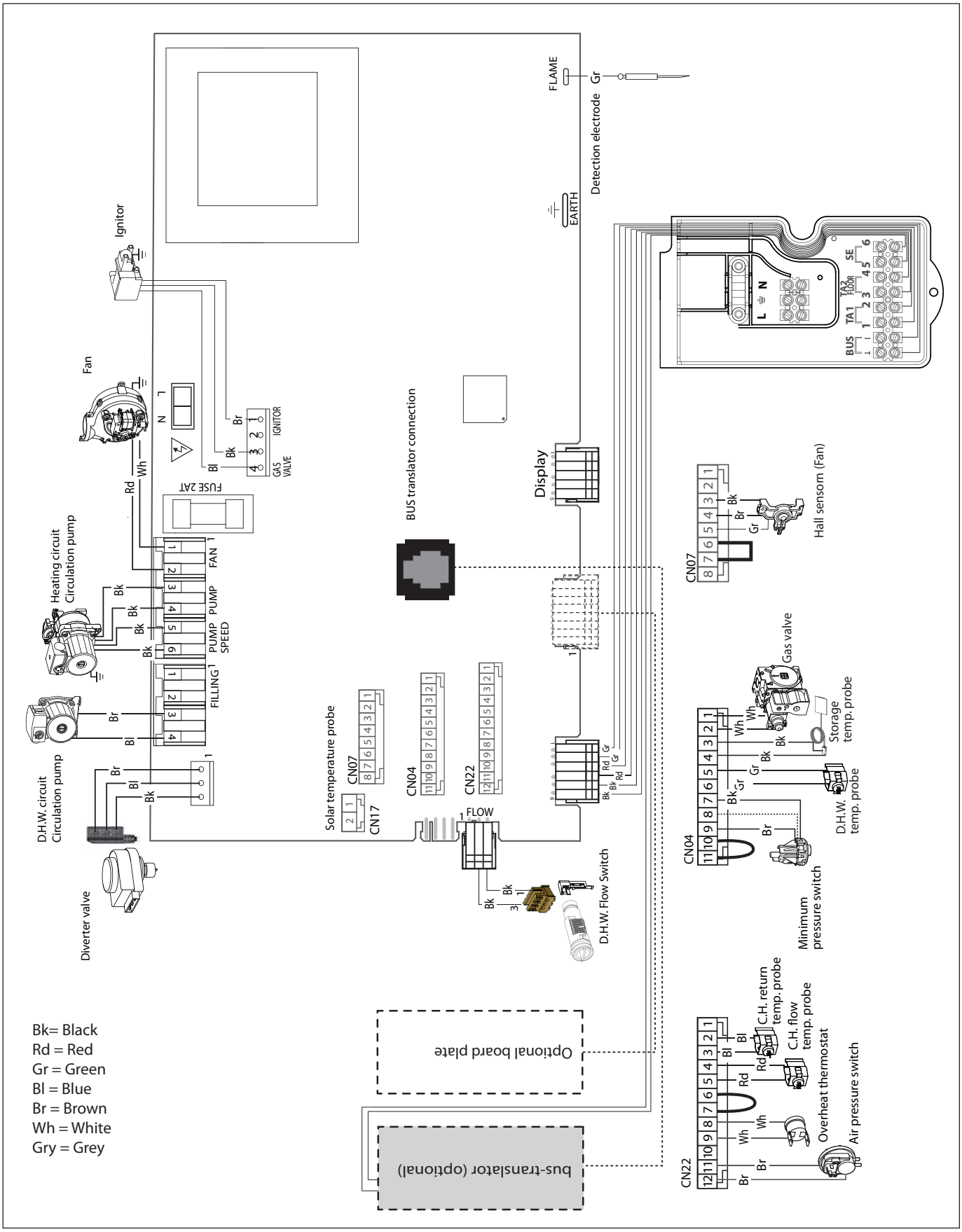
Room thermostat connection
- Introduce the thermostat wire
- connect the wires to the terminal **TA1** as indicated in the figure, removing the jumper
- make sure that they are well connected and that they are not subject to traction.



Electrical diagram

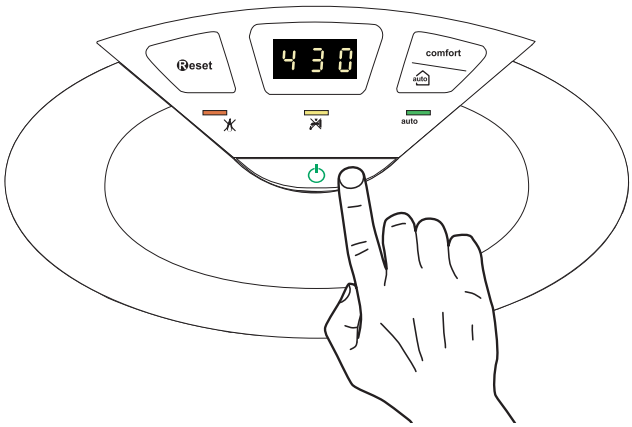
For increased safety, ask a qualified technician to perform a thorough check of the electrical system.

The manufacturer is not responsible for any damage caused by the lack of a suitable earthing system or by the malfunctioning of the electricity mains supply.



commissioning

Ignition procedure
Press the ON/OFF button on the control panel to switch on the boiler. The display shows:



The operating mode will be indicated by the three figures marked out on the diagram above.
The first figure indicates the operating mode:
0 XX - Stand-by
C XX - Central heating request
c XX - Heating post-circulation
d XX - Domestic hot water request
b XX - Storage request
h XX - hot water post-circulation
F XX - circulation pump anti-freeze protection enabled
- burner anti-freeze protection enabled

The second and third figures indicate:
- the flow temperature when no heating requests have been made
- the flow temperature in central heating mode
- the temperature of the hot water in domestic hot water
- the flow temperature in anti-freeze mode.

The carrying out of certain functions is shown:
P11 - = Deaeration cycle started

Initial procedures
To guarantee safety and the correct operation of the appliance, the boiler must be prepared for operation by a qualified technician who possesses the skills which are required by law.

Electricity supply
- Check that the voltage and frequency of the electricity supply correspond to the data shown on the boiler data plate;
- Make sure that the earthing connection is efficient.

Filling the hydraulic circuit
Proceed in the following manner:
- Open cold water inlet tap;
- Lift the cap on the automatic air relief valve on the circulation pump;
- Gradually open the valve under the boiler
- Open each air release tap starting with the lowest point and close it only when clear water, free of air, is visible.
- Clause the valve under the boiler when at least 1 bar registers on the pressure gauge.

Gas supply
Proceed in the following manner:
- make sure that the main gas supply uses the same type of gas as indicated on the boiler data plate;
- Open all doors and windows;
- Make sure there are no sparks or naked flames in the room;
- Make sure that the system does not leak fuel using a cut-off valve inside the boiler itself which should be closed and then opened while the gas valve is disabled. The meter must not show any signs of gas being used for 10 minutes.

First ignition
1. Make sure that:
- The gas valve is closed;
- The electrical connection has been properly carried out. Make sure that, in any case, the green/yellow earthing wire is connected to an efficient earthing system;
- Use a screwdriver to lift the cap on the automatic air relief valve;
- the system pressure is at least 1 bar on the pressure gauge
- Switch on the boiler (by pressing the ON/OFF button) and select the standby mode, where no hot water or heating requests are made.
- Start the deaeration cycle by pressing Esc for 5 seconds
  The boiler will start a deaeration cycle lasting about 7 minutes. If you need to stop it press Esc.
- At the end, check that the system is completely deaerated and, if not, repeat the procedure.
- Bleed the air from the radiators;
- The exhaust duct for combustion products should be suitable and free from any obstructions;
- Any necessary ventilation inlets in the room should be open (type B installation).

2. Open the gas valve and check the connection seals, including the boiler connection seals, making sure that the meter does not detect any passage of gas. Eliminate any leaks.
3. Start the boiler by selecting the heating or domestic hot water operation.

Deaeration cycle
During the filling stage or if there is excess air in the system, the deaeration cycle can be activated by holding the Esc button for 5 seconds. The boiler will start a cycle which lasts approximately 7 minutes. When this is complete the menu screen will be restored. The cycle may either be repeated, if necessary, or stopped by pressing Esc. Press the Esc button until the normal display screen is restored.

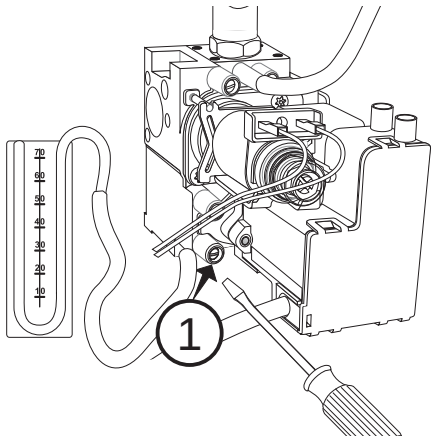
Checking the gas settings
Remove the front casing and proceed as described below.

Supply pressure check
1. Loosen screw "1" (Fig. a) and insert the pressure gauge connection pipe into the pipe tap.
2. Switch the boiler on at maximum power, enabling the "flue sweep" function (press the Reset button for 5 seconds; the display will show "t -- "). The supply pressure should correspond to the value established in relation to the type of gas for which the boiler is designed.
3. When the check is over, tighten screw "1" and make sure it is securely in place.
4. The "flue sweep function" is automatically deactivated after 10 minutes or when the Reset button is pressed.

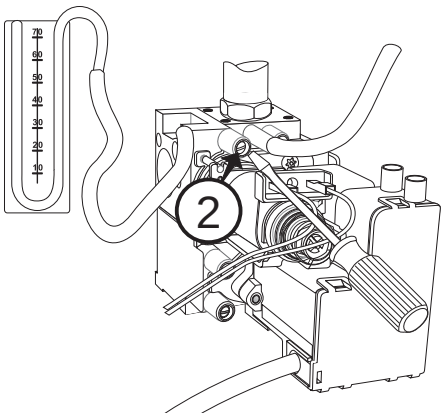
Checking the D.H.W. maximum power
1. To check the maximum power level, loosen screw "2" (Fig. b) and insert the pressure gauge connection pipe into the pipe tap.
2. Disconnect the air chamber compensation tube.
3. Switch the boiler on at maximum power, enabling the "flue sweep" function (press the Reset button for 5 seconds; the display shows "t -- "); press the programming key ⊕ to activate operation at the maximum hot water power level. The display will show "t -- ".
   The supply pressure should correspond to the value shown in the "Gas Settings" table, in relation to the type of gas for which the boiler is designed. If it does not correspond, remove the protective hood and tighten or loosen the adjustment screw "3" (fig. c).
4. When the check is over, tighten screw "2" and make sure it is securely in place.
5. Replace the cover protecting the modulator.
6. Reconnect the compensation tube.
7. The "flue sweep function" is automatically deactivated after 10 minutes or when the Reset button is pressed.

Checking the minimum power
1. To check the minimum power level, loosen screw "2" (Fig. b) and insert the pressure gauge connection pipe into the pipe tap.
2. Disconnect the air chamber compensation tube.
3. Switch the boiler on at maximum power, enabling the "flue sweep" function (press the Reset button for 10 seconds; the display shows "t -- "); press the programming key ⊖ to activate operation at the minimum hot water power level. The display will show "t __ ".
   Disconnect a wire from the modulator (fig. d); the supply pressure should correspond to the value shown in the "Gas Settings" table, in relation to the type of gas for which the boiler is designed. If it does not correspond, tighten or loosen the adjustment screw "4" (fig. d).
4. When the check is over, tighten screw "2" and make sure it is securely in place.
5. Reconnect the modulator wire.
6. Reconnect the compensation tube.
7. The "flue sweep function" is automatically deactivated after 10 minutes or when the Reset button is pressed.

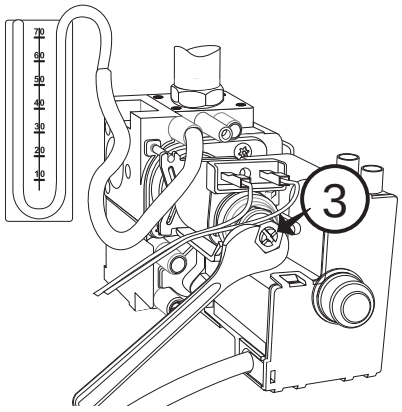
(a)



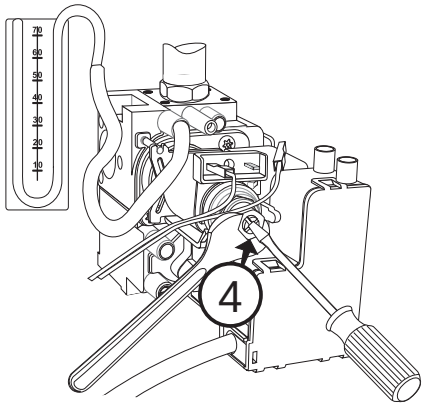
(b)



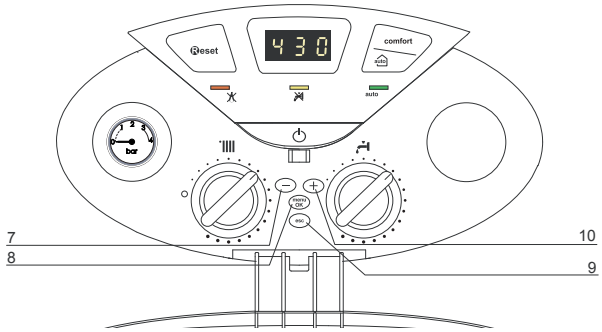
(c)



(d)



Accessing the settings and adjustment menus
menu 2 - Boiler parameters
submenu 3 - **parameter 1**
Maximum Heating Power adjustment
submenu 2 - **parameter 0**
Soft light Ignition
submenu 3 - **parameter 5 e 6**
Heating ignition delay
sottomenu 3 - parametro 0
Massima potenza riscaldamento ASSOLUTA
(SOLO IN CASO DI CAMBIO GAS O SOSTITUZIONE SCHEDA)



7. Programming "-" key
8. Menu/Ok button
9. Esc button
10. Programming "+" key

The information relating to the menus and the individual parameters are indicated on the display.

To access Menu 2, open the cover and proceed as follows:
1. Press the Menu/Ok button; the first figure "000" will flash on the display.
2. Press the ⊕ button to select menu "200".
3. Press the Menu/Ok button; the second figur on the display will flash and the access code "210" will be requested.
Caution! The menus reserved for qualified technicians may only be accessed after setting the access code.
4. Press the Menu/Ok button; "222" will appear on the display unit.
5. Press the ⊕ button to select code "234".
6. Press the Menu/Ok button to select the sub menu; the second figure "220" will flash.
7. Press the ⊕ button to select the sub menu, for example: "230".
8. Press the Menu/Ok button to access the sub menu parameters; the third figure "230" will flash.
9. Press the ⊕/⊖ buttons to select the parameter; then press the Menu/Ok button.
10. Press the ⊕ or ⊖ button to access the parameter; the display will indicate the value, e.g "76".
Note: The parameter value will be displayed for 20 seconds, then will begin to flash in alternation with the parameter, e.g. "70 > 231".
11. Press the ⊕ or ⊖ button to select the new value, e.g. "75".
12. Press Menu/Ok to save the change or press Esc to exit without saving.

To exit, press the ESC button until the normal display screen is restored.
For menus which do not require the access code, it is possible to pass directly from the menu to the sub menu.

Maximun Heating Power adjustment
The maximum heating power can be adjusted to between the maximum power allowed by the boiler and the minimum power).
The display shows the value between "99" and 0 of this interval.
To check the maximum heating power, access menu 2/sub menu 3/parameter 1, check the value and, if necessary, modify it as indicated in the Gas Pressure table.

Checking slow ignition power
The soft light can be adjusted between the maximum power and the minimum power.
Change the parameter if the outlet pressure from the gas valve in the ignition phase (measured when the boiler is in hot water heating operation) does not coincide with the values shown in the Gas Table.
To check the slow ignition power, access menu 2/sub menu 2/ parameter 0.
If needed, change the parameter value until suitable pressure is achieved.

Heating ignition delay adjustment
This parameter – menu 2/sub menu 3/parameter 5 - can be used to manually (0) or automatically (1) set the delay time before the subsequent reignition of the burner after it has switched off on reaching the desired temperature.
By selecting manual, it is possible to set the delay in minutes using the successive parameter (menu 2/sub menu 3/parameter 6), to a time between 0 and 7 minutes.
Automatic selection means that the boiler will establish the delay time based on the set-point temperature.

Checking maximum absolute heating power
(ONLY IN CASE OF GAS CHANGE OR P.C.B. REPLACEMENT)
To check/modify the maximum absolute heating power, access the gas valve and proceed as follows:
1. Loosen screw "2" (Fig. b) and insert the pressure gauge connection pipe into the pipe tap.
2. Disconnect the air chamber compensation tube.
3. Switch the boiler on at maximum heating power, enabling the "chimney sweep" function (press the Reset key for 5 seconds; the display shows t --.
The supply pressure should correspond to the value shown in the "Gas Settings" table according to the type of gas for which the boiler is designed. If it does not correspond, access menu 2/ sub menu 3/parameter 0 and modify the value until the pressure indicated in the Gas Table has been reached.
4. When the check is complete, tighten screw "2" and make sure it is securely in place.
5. The "chimney sweep" function is deactivated either automatically after 10 minutes or when the Esc button is pressed.

The table indicate the existing relationship between the gas pressure at the burner and the boiler power level in heating mode.

Heating Gas Pressure										
	Gas	**Heat output (kW)**	**12,1**	**14**	**16**	**18**	**20**	**24**	**26**	**28**
CLAS B 28 FF	G20	mbar	2,3	3,1	4,0	5,1	6,3	8,9	10,4	12,1
		Parameter 2 3 1	0	37	42	46	50	57	61	64
	G30	mbar	5,1	6,8	8,9	11,3	13,9	19,1	22,4	26
		Parameter 2 3 1	0	52	58	63	69	76	81	84
	G31	mbar	6,2	8,3	10,8	13,7	16,9	24,4	28,6	33,2
		Parameter 2 3 1	0	55	62	68	73	83	89	95

Table summarising changes

		CLAS B 28 FF		
		G20	**G30**	**G31**
lower Wobbe index (15°C, 1013 mbar)		45,67	80,58	70,69
Gas inlet pressure mbar		20	28/30	37
Gas Burner Pressure (mbar)				
maximum D.H.W. mbar		12,9	27,7	35,8
maximum heating (absolute) mbar (Menu 2/ submenu 3/ parameter 0)		12,2 (66)	26 (85)	33,2 (95)
minimum mbar		2,3	5,1	6,2
Soft light mbar (Menu 2/ submenu 2/ parameter 0)		5,5 (49)	9,5 (47)	9,5 (47)
Maximum heating power adjustment (Menu 2/sottomenu 3/ parametro 1)		51	66	71
Ignition delay (Menu 2/ submenu 3/ parameter 5)		automatic		
Main Burner jets		13		
Ø burner jets (mm)		1,32	0,80	0,80
Max/min consumption (15°C, 1013 mbar) (G.N.= m^3/h) (GPL = Kg/h)	max D.H.W.	3,31	2,47	2,43
	max Heating	3,17	2,37	2,33
	minimum	1,38	1,03	1,01

Gas Changeover

The boiler may be adjusted so that it may be used with Liquid Gas (G30-G31) instead of methane gas (G20) or vice-versa. The adjustment must be performed by a Qualified Technician using the special Kit.

The following procedures must be completed:

1. Switch off the electrical supply to the appliance.
2. Shut off the gas valve.
3. Disconnect the electrical connections to the boiler.
4. Access to the combustion chamber, as indicated in the paragraph "Instructions for opening the casing and performing an internal inspection".
5. Replace the nozzles and attach the labels as indicated in the instruction sheet supplied with the Kit.
6. Check that all connections are gas-tight.
7. Start up the boiler.
8. Perform the gas adjustment (refer to the paragraph "Checking the gas adjustment"):

- check the domestic water maximum power
- check the minimum power
- check the maximum absolute heating power
- adjust the maximum adjustable heating power
- check the slow ignition
- adjust the heating ignition delay

9. Carry out the combustion analysis.

Auto function

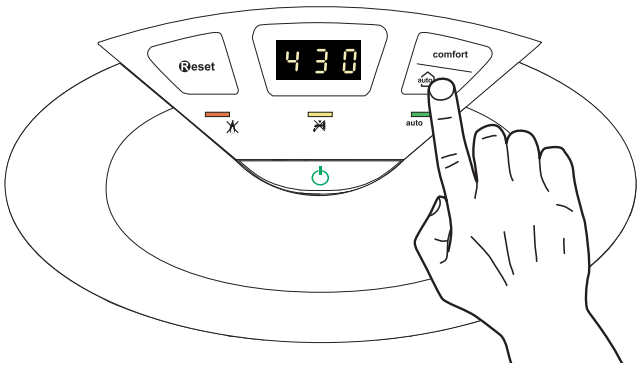
This is a function which enables the boiler to automatically adapt its operation routine (the temperature of the heating elements) in line with the outdoor conditions, in order to achieve and maintain the requested room temperature conditions.

Depending on the peripheral units connected and the number of zones controlled, the boiler adjusts its flow temperature automatically.

The various corresponding parameters should therefore be set (see adjustments menu).

To activate the function, press the AUTO button.

For further information please refer to the ARISTON temperature adjustment manual.



Example 1:

SINGLE ZONE SYSTEM (HIGH-TEMPERATURE) WITH ON/OFF ROOM THERMOSTAT:

In this case the following parameters must be set:

4 21 - Activation of temperature adjustment using sensors
- Select 04 = Basic temperature adjustment

2 44 - Boost Time (optional)
The wait time for the flow temperature increase in steps of 4°C may be set. The value varies according to the type of system and installation.
If the Boost Time value = 00 the function is not activated.

Example 2:

SINGLE ZONE SYSTEM (HIGH-TEMPERATURE) WITH ON/OFF ROOM THERMOSTAT + OUTDOOR SENSOR:

In this case the following parameters must be set:

4 21 - Activation of temperature adjustment using sensors
- Select 01 = outdoor sensor only

4 22 - Temperature adjustment curve selection
- Select the relevant curve according to the type of system, installation, heat insulation used in the building, etc.

4 23 - Perform a parallel curve shift if necessary, increasing or decreasing the set-point temperature (this may also be modified by the user, using the programming key, which, with the Auto function activated, is used to shift the curve in a parallel manner).

Example 3:

SINGLE ZONE SYSTEM (HIGH-TEMPERATURE) WITH REMOCON REMOTE CONTROL + OUTDOOR SENSOR

In this case the following parameters must be set:

4 21 - Activation of temperature adjustment using sensors
- select 0 = outdoor sensor + room sensor

4 22 - Temperature adjustment curve selection
- Select the relevant curve according to the type of system, installation, heat insulation used in the building, etc

4 23 - Perform a parallel curve shift if necessary, increasing or decreasing the set-point temperature. (this may also be modified by the user, using the programming key, which, with the Auto function activated, is used to shift the curve in a parallel manner).

4 24 - Influence of room sensor
- used to adjust the influence the room temperature has on the calculation of the set-point flow temperature (20 = maximum, 0 = minimum).

Boiler protection devices

The boiler is protected from malfunctioning by means of internal checks performed by the electronic microprocessor P.C.B., which stops the boiler from operating if necessary.
In the event of the boiler being shut off in this manner, a code appears on the display which refers to the type of shut-off and the reason behind it.
There are two types of shut-off:

Safety shut-off

This type of error is "volatile", which means that the boiler starts up again automatically as soon as the problem which caused the shut-off is removed; on the display and flash "Err" and the error code (es: ERR / 101).
In fact, soon as the cause of the shut-off disappears, the boiler starts up again and continues to operate normally.

Safety shut-off due to insufficient water pressure

If the water pressure inside the heating circuit is insufficient, the boiler will perform a safety shut-off.
On the display flash "Err" and the code for Insufficient water pressure 108
Check the water pressure on the pressure gauge and make sure that is between 0.6 and1.5 bar when the system is cold. If the pressure is just under the minimum refill the system by open the valve under the boiler.

In this case or if the re-balancing request is performed on a frequent basis, switch the boiler off, bring the external electric switch to the OFF position, shut off the gas valve and contact a qualified technician to check for any leaks of water.

Shutdown

This type of error is "non-volatile", which means that it is not removed automatically. On the display flash "Err" and the error code (es: ERR / 501).To restore normal operation press the Reset button on the control panel.

The first figure of the error code (e.g. 1 01) indicates within which operational assembly the error occurred.
1 - Primary Circuit
2 - Domestic Hot Water Circuit
3 - Internal Electronic Part
4 - External Electronic Part
5 - Ignition and Detection
6 - Air inlet - flue gas outlet
7 - Multizone

Malfunction warning

This warning is shown by the display in the following format:
5 P3 = Flame cut-off
the first figure indicating the operational assembly is followed by a P (warning) and the code relating to the specific warning.

Important

If this shutdown occurs frequently, contact an authorised Technical Service Centre for assistance. For safety reasons, the boiler will permit a maximum of 5 resets in 15 minutes (5 presses of the RESET button); at the 6th attempt within this 15-minute period the boiler will shut down and may only be operated again after the electricity supply has been disconnected. If the shutdown is occasional or an isolated event, this is not a problem.

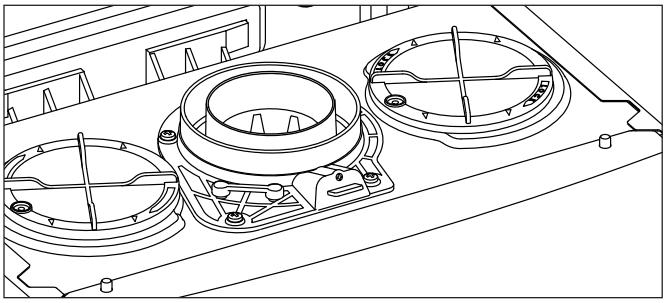
Table summarising error codes

Display	Description	
Central Heating circuit		
101	Overheat	
103	Insufficient circulation	
104		
105		
106		
107		
109	System pressure > 3 bar	
110	C.H. Flow temp. probe circuit open / short circuit	
108	Insufficient water (request filling)	
112	C.H. Return temp. probe circuit open / short circuit	
114	External sensor circuit open / short circuit	
118	Heating delevery probe problem	
1P1	Insufficient circulation indication	
1P2		
1P3		
D.H.W. circuit		
201	D.H.W. temperature probe open / short circuit	
202	Bottom storage temperature probe open / short circuit	
204	Solar collector temperature probe open / short circuit	Solar Kit (optional)
205	DHW In Probe Open Circuit	
207	Solar collector overheating	
208	Collector frost protection temperature	
Internal P.C.B.'s		
301	EEPROM error	
302	Comunication error	
303	Main P.C.B. error	
304	Too many (> 5) resets in 15 minutes	
305	Main P.C.B. error	
306	Main P.C.B. error	
307	Main P.C.B. error	
External P.C.B.'s		
407	Room sensor circuit open 7 short circuit	
Ignition and Detecion		
501	No flame detected	
502	Flame detected with gas valve closed	
504	Flame lift	
5P3	Flame cut-off	
Air Inlet / Flue gas outlet		
604	Insufficient fan speed	
607	Air pressure switch closed permanently	
608	Air pressure switch OFF Fan ON	
6P1	Delay in air pressure switch closing	
6P2	APS close-open	
Multi-zone Heating (Heating Zone Modules - optional)		
701	Zone 2 outgoing sensor defective	
702	Zone 2 return sensor defective	
703	Zone 3 outgoing sensor defective	
704	Zone 3 return sensor defective	
705	Hydraulic separation sensor defective	
706	Zone 2 overheating	
707	Zone 3 overheating	

boiler protection devices

Combustion Analysis
The flue connector has two apertures, readings can be taken for the temperature of the combustion by-products and of the combustion air, as well as of the concentrations of O2 and CO2, etc.
To access these intakes it is necessary to unscrew the front screw and remove the metal plate with sealing gasket.
It is possible to activate the flue test mode by pressing and holding the Reset button for 10 seconds.
The boiler will return to normal operation after 10 minutes. The boiler can be returned to normal operation sooner by switching the boiler off and on again.
When you have finished, reposition the metal plate correctly and make sure the seal fits perfectly.

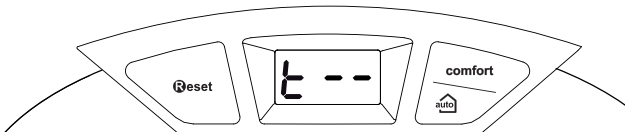
Product of Combustion
Discharge Monitoring
In the boiler, it is possible to monitor the correct operation of the flue exhaust/air intake, checking for a loss of general pressure in the system. Through the use of a differential manometer connected to the test points of the combustion chamber, it is possible to detect the ΔP of operation of the air pressure switch.
The value detected should not be less than 0.47 mbar (24 kW) - 0.70 mbar (28/35 kW) under conditions of maximum thermal power in order for the boiler to function properly and without interruption.



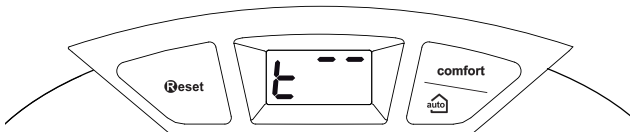
Anti-frost Device.
The anti-frost function acts on the central heating flow temperature probe, independently from other regulations, when the electrical supply is turned on.
If the primary circuit temperature falls below 8°C the pump will run for 2 minutes.
After the two minutes of circulation (fixed) the boiler will check the following:
a) if the central heating flow temperature is > 8°C, the pump stops;
b) if the central heating flow temperature is between 4 and 8°C, the pump will run for another two minutes;
c) if the central heating flow temperature is < 4°C, the burner will fire (heating position) at minimum power until the temperature reaches 33°C, the burner will go out and the pump will continue to run for two minutes.

If the flow temperature remains between 4-8°C the pump will continue to run for two minutes for a maximum of 10 times unless a temperature above 8°C is detected in the central heating flow, after this the the burner will fire. If lockout is caused by overheat the burner is kept OFF.
The anti-frost device activates only when (with the boiler operating correctly):
- the system pressure is correct;
- the boiler is electrically powered;
- there is a supply of gas.

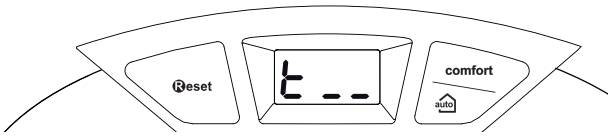
Chimney sweep function
The P.C.B. enables the boiler to be forced to its maximum or minimum power.
By activating the Chimney sweep function, pressing the Reset button for 10 seconds, the boiler will be forced to its maximum heating power and the display shows:



To select hot water operation at maximum power, press the ⊕ button and the following will appear on the display:



To select hot water operation at minimum power, press the ⊖ button and the following will appear on the display:



This function is deactivated automatically after 10 minutes, or when the RESET button is pressed.

Note: The boiler can also be forced to its maximum and minimum power by accessing menu 7 (see settings - adjustment - problem identification menu paragraph).

Menù impostazione - regolazione - diagnostica

Accessing the settings - adjustment - problem identification menus

The boiler can be used to manage the heating and domestic hot water production system in its entirety.

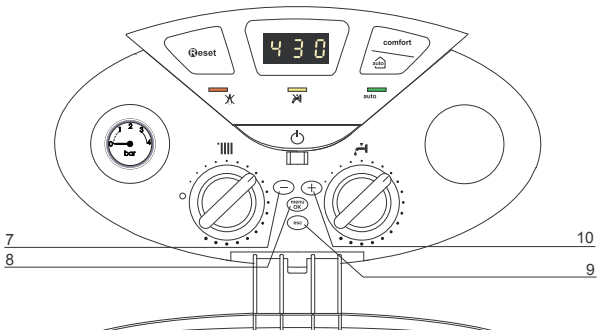
Navigation within the menus enables the boiler system + connected peripheral units to be customised, optimising operation for maximum comfort and maximum saving. It also provides important information relating to the efficient operation of the boiler.

I menu disponibili sono i seguenti:

2	**Boiler Parameter**	
2	1	Service code
2	2	General setting
2	3	C.H. Parameters - Part 1
2	4	C.H. Parameters - Part 1
2	5	Domestic Hot Water
2	9	Menù 2 Reset to factory setting
3	**Solar & Storage**	
3	0	General setting
3	1	Service code
3	2	Special setting
4	**Zone 1 Parameters**	
4	0	Set-point Zone1
4	1	Service code
4	2	Zone 1 Setting
4	3	Diagnostics
4	4	Zone device mangement
5	**Zone 2 Parameters**	
5	0	Set-point Zone2
5	1	Service code
5	2	Zone 2 Setting
5	3	Diagnostics
5	4	Zone device mangement
5	5	Multizone
7	**Test & Utilities**	
8	**Service Parameter**	
8	1	Service code
8	2	Boiler
8	3	Boiler Temperature
8	4	Solar & Storage
8	5	Service
8	6	Statistics
8	7	NOT ACTIVE
8	8	Error History
Menu INFO		

The parameters relating to each individual menu are listed in the following pages.

The various parameters can be accessed and modified using th Menu/Ok button and the ⊖ /⊕ buttons (see fig. below).



7. Programming "-" key
8. Menu/Ok button
9. Esc button
10. Programming "+" key

The information relating to the menus and the individual parameters are indicated on the display.

To access Menu 2, open the cover and proceed as follows:

1. Press the Menu/Ok button; the first figure "0" will flash on the display.
2. Press the ⊕ button to select menu "2".
3. Press the Menu/Ok button; the second figur on the display will flash and the access code "210" will be requested.
   Caution! The menus reserved for qualified technicians may only be accessed after setting the access code.
4. Press the Menu/Ok button; "2222" will appear on the display unit.
5. Press the ⊕ button to select code "2314".
6. Press the Menu/Ok button to select the sub menu; the second figure "220" will flash.
7. Press the ⊕ button to select the sub menu, for example: "230".
8. Press the Menu/Ok button to access the sub menu parameters; the third figure "230" will flash.
9. Press the ⊕/⊖ buttons to select the parameter; then press the Menu/Ok button.
10. Press the ⊕ or ⊖ button to access the parameter; the display will indicate the value, e.g "76".
    Note: The parameter value will be displayed for 20 seconds, then will begin to flash in alternation with the parameter, e.g. "70" > "231".
11. Press the ⊕ or ⊖ button to select the new value, e.g. "75".
12. Press Menu/Ok to save the change or press Esc to exit without saving.

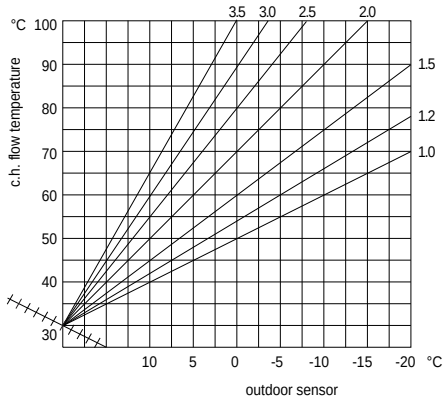
To exit, press the ESC button until the normal display screen is restored.

For menus which do not require the access code, it is possible to pass directly from the menu to the sub menu.

menu	sub-menu	parameter	description / notes	value	default setings
2			**BOILER PARAMETER**		
2	**1**		**SERVICE CODE**		222
			press the programming ⊕ button to select 234 and press the MENU button		
2	**2**		**BOILER GENERAL SETTINGS**		
2	**2**	**0**	Soft ignition	from 0 to 90	
			see parag. Gas settings		
2	**2**	**1**	Zone Frost Temperature (Room Temperature)	from 2 to 10 (°C)	5
			only active when the BUS device is connected		
2	**2**	**2**	Fun Modulation On/Off	0 = modulation disabled 1 = modulation active	1
2	**2**	**3**	NOT ACTIVE		
2	**2**	**4**	NOT ACTIVE		
2	**2**	**5**	Heating ignition delay	0 = Deactivated 1 = 10 seconds 2 = 90 seconds 3 = 210 seconds	0
			Utilizzare con Clip-in 2 zone (optional)		
2	**2**	**6**	NOT ACTIVE		
2	**2**	**7**	NOT ACTIVE		
2	**2**	**8**	Boiler version - NOT TO MODIFY	from 0 to 5	5
			ONLY FOR SERVICE - To be used only in substitution P.C.B.		
2	**3**		**CENTRAL HEATING PARAMETER - PART 1**		
2	**3**	**0**	Maximum Central Heating Aboslute power	from 0 to 99	
			ONLY FOR SERVICE - To be used only in substitution P.C.B. see parag. Gas settings		
2	**3**	**1**	Maximum Central Heating power Adjustable heating	from 0 to 99	60
			see parag. Gas settings		
2	**3**	**2**	NOT ACTIVE		
2	**3**	**3**	NOT ACTIVE		
2	**3**	**4**	NOT ACTIVE		
2	**3**	**5**	Anti-cycling time mode	0 = Manual 1 = Automatic	1
2	**3**	**6**	Anti-cycling time (If 235 = 0)	from 0 to 7 (minutes)	3
2	**3**	**7**	Central Heating pump overrun	from 0 to 15 (minutes) o CO (continuos)	3
2	**3**	**8**	Pump speed control	0 = Low speed 1 = High speed 2 = Modulating	2
2	**3**	**9**	Set Delta T Pump	from 10 to 30 (°C)	20
			Parameter to set if Pump Speed control (237) is setted on modulating		
			ΔT (flow - return) for circulation pump modulation This parameter can be used to set the difference between the flow and return temperatures, which determines the commutation between low and high circulation pump speed. E.g.: param. 14 = 20 if the Tflow - Tret > 20°C; the circulation pump will be activated at maximum speed. If the Tflow - Tret < 20 - 2°C; the circulation pump will be activated at minimum speed. The minimum wait time between speed changes is 5 minutes.		
2	**4**		**CENTRAL HEATING PARAMETER - PART 1**		
2	**4**	**0**	NOT ACTIVE		
2	**4**	**1**	NOT ACTIVE		
2	**4**	**2**	NOT ACTIVE		
2	**4**	**3**	Post-ventilation after Central Heating request	0 = OFF 1 = ON	0
2	**4**	**4**	Boost Time	from 0 to 60 (minutes)	16
			only enabled with Room Thermostat on/off and temperature adjustment activated (parameter 421 or 521 on 04 = Basic temperature adjustment)		
			This parameter can be used to set the delay time before the automatic increase in flow temperature, in steps of 4°C (max. 12°C). If the value of this parameter remains at 00 the function is not activated.		
2	**4**	**5**	NOT ACTIVE		
2	**4**	**6**	NOT ACTIVE		
2	**4**	**7**	Central Heating Pressure detection device	0 = Temperature Probes only 1 = Pressure switch 2 = Pressure sensor	1
			ONLY FOR SERVICE - To be used only in substitution P.C.B.		
2	**4**	**8**	NOT ACTIVE		
2	**5**		**DOMESTIC HOT WATER**		
2	**5**	**0**	CONFORT FUNCTION	0 = Disabled 1 = Time Based 2 = Always active	2
			Time Based =Active for 30 minutes after a D.H.W. request		
			*The "COMFORT" function of the appliance can be used to increase the comfort level of the user when drawing hot water. This function keeps the secondary exchanger hot during periods of boiler inactivity; this increases the initial heat status of the water drawn, as the water is delivered at a higher temperature. Then press the MENU/OK button to enable the modification. When the function is enabled the LED **13** will illuminate. This function may also be enabled or disabled by pressing the COMFORT button.*		
2	**5**	**1**	Comfort Anti-cycling Time	from 0 to 120 minutes	0
2	**5**	**2**	Hot water flow delay	from 5 to 200 (0.5 to 20 seconds)	5
			Anti "water hammering"		

menu	sub-menu	parameter	description / notes	value	default setings
2	5	3	D.H.W. switch logic	0 = Anti-scale (stop at > 67°C) 1 = At 4°C over set-point	0
2	5	4	Post-circulation and post-ventilation after domestic hot water is drawn	0 = OFF 1 = ON	0
			OFF = 3 minutes post-circulation and post-ventilation after domestic hot water draw-off if the boiler temperature measured requires it. *ON = always on for 3 minutes post-circulation and post-ventilation after domestic hot water draw-off.*		
2	5	5	Delay start in Central Heating after D.H.W. request	from 0 to 30 (minutes)	0
2	5	6	NOT ACTIVE		
2	9		**RESET MENU' 2**		
2	9	0	Reset factory settings	Reset OK = yes ESC = no	
			To reset all default parameter settings, press the MENU button		
3			**BOILER WITH STORAGE (INSIDE OR OUTSIDE) AND BOILER WITH SOLAR KIT**		
3	0		**GENERAL SETTINGS**		
3	0	0	Storage Setpoint T	from 40 to 60°C	
3	0	1	NOT ACTIVE	*For only heating boiler or with solar Kit connected*	
3	0	2	Reduced storage temperature		
3	1		**SERVICE CODE**		222
			press the programming ⊕ button to select 234 and press the MENU button		
3	2		**SPECIAL SETTINGS**		
3	2	0	Anti-legionella Function	0 = OFF - 1 = ON	0
			This function avoids the formation of the legionella bacterium wich ,sometimes develops in pipes and water tanks where the temperature is included between 20 and 40°C. If the storage temperature remains more than 100 hours less than 59°C and the function is enable, the boiler is light aan and the storage water is warmed up to 65°C during 30 minutes.		
3	2	1	NOT ACTIVE		
3	2	2	NOT ACTIVE		
3	2	3	Collector Delta T pump ON	from 0 to 30°C	8
3	2	4	Collector Delta T pump OFF	from 0 to 30°C	4
3	2	5	Minimum Collector Temperature Pump ON	from 10 to 90°C	30
3	2	6	Kollectorkick	0 = OFF - 1 = ON	0
3	2	7	Recooling Function	0 = OFF - 1 = ON	0
3	2	8	NOT ACTIVE		
3	2	9	Collector Frost protection Temperature	from -20 to + 5°C	0

Only with Solar Kit is installed

menu	sub-menu	parameter	description / notes	value	default setings
4			**ZONE 1 PARAMETER**		
4	0		**ZONE 1 TEMPERATURE SETTING**		
4	0	0	Set Day Temperature Zona 1	from 16 to 30 (°C)	19
			set room temperature for the day - only active when the BUS device is connected		
4	0	1	Set Night Temperature Zona 1	from 16 to 30 (°C)	16
			set room temperature for the day - only active when the BUS device is connected		
4	0	2	Fix temperature central heating	from 35 to 85 (°C)	70
			To set only with Fixed Flow Temperaure of Thermoregulation (see 421)		
4	1		**SERVICE CODE**		222
			press the programming ⊕ button to select 234 and press the MENU button		
4	2		**ZONE 1 SETTING**		
4	2	0	Zone 1 Temperature range DO NOT MODIFY		
			ONLY FOR SERVICE Active only with Heating Zones Management Kit		
4	2	1	Select Type of Thermoregulation *To enabled thermoregulation press Auto button.*	0 = Fixed Flow Temperature 1 = Basic Thermoregulation 2 = Room Temperature only 3 = Outdoor Temperature only 4 = Room + Outdoor Temperature	1
4	2	2	Zone 1 Slope	from 0_2 to 3_5	1_5
					
			When an outdoor sensor is used, the boiler calculates the most suitable delivery temperature, taking into account the outside temperature and type of system. *The type of curve should be selected in correspondence with the projected temperature of the system and the nature of the dispersions present in the structure.* *For high-temperature systems, one of the curves depicted below may be chosen.*		

menu	sub-menu	parameter	description / notes	value	default setings
4	2	3	Parallel curve shift Zone 1 Offset	from - 20 to + 20	0
			To adapt the heating curve to the system requirements, shift the curve in parallel so that the calculated flow temperature is modified, in addition to the room temperature. By accessing this parameter and pressing the programming key the curve can be shifted in a parallel manner as indicated in the figure shown below. The value is indicated on the display, from -20 to +20.		
4	2	4	Room sensor Influence to calculate the set-point temperature - Thermoregulation enabled-	from 0 to 20	20
			If setted = 0 the room temperature doesn't influence the calculation of the set-point. If setted = 20, the room temperature has the maximun influence to calculate the set-point - only active when the BUS device is connected		
4	2	5	Maximum Central Heating Temperature Zone 1	from 40 to 82 (°C)	82
4	2	6	Minimum Central Heating Temperature Zone 1	from 40 to 82 (°C)	40
4	3	**DIAGNOSTICS**			
4	3	0	Zone 1 room temperature *only active when the BUS device is connected*		
4	3	1	Zone 1 room temperature *only active when the BUS device is connected*		
4	3	2	Zone 1 heat request	0 = OFF - 1 = ON	
4	3	3	Zone 1 Pump status	0 = OFF - 1 = ON	
			Only active with Heating Zones Modules Management		
4	4	**ONE DEVICE MANAGEMENT**			
4	4	0	Pump control	0 = OFF - 1 = ON	
			Only active with Heating Zones Modules Management		

menu	sub-menu	parameter	description / notes	value	default setings
5	**ZONE 2 PARAMETER**				
5	0	**ZONE 2 TEMPERATURE SETTING**			
5	0	0	Set Day Temperature Zona 2	from 10 to 30 (°C)	19
			only active when the BUS device is connected		
5	0	1	Set Night Temperature Zona 2	from 10 to 30 (°C)	16
			only active when the BUS device is connected		
5	0	2	Fix temperature central heating	from 35 to 85 (°C)	70
			To set only w th Fixed Flow Temperaure of Thermoregulation (see 521)		
5	1	**SERVICE CODE**			222
			press the programming ⊕ button to select 234 and press the MENU button		
5	2	**ZONE 2 SETTING**			
5	2	0	Zone 2 Temperature range DO NOT MODIFY		
			Only active with Heating Zones Modules Management		
5	2	1	Select Type of Thermoregulation *To enabled thermoregulation press Auto button.*	0 = Fixed Flow Temperature 1 = Basic Thermoregulation 2 = Room Temperature only 3 = Outdoor Temperature only 4 = Room + Outdoor Temperature	1
5	2	2	Zone 1 Slope	from 0_2 to 3_5	1_5
			See parameter 422 Only enabled when an outdoor sensor is installed When an outdoor sensor is used, the boiler calculates the most suitable delivery temperature, taking into account the outside temperature and type of system. The type of curve should be selected in correspondence with the projected temperature of the system and the nature of the dispersions present in the structure. For high-temperature systems, one of the curves depicted below may be chosen.		
5	2	3	Parallel curve shift Zone 2 Offset	from - 20 to + 20	0
			To adapt the heating curve to the system requirements, shift the curve in parallel so that the calculated flow temperature is modified, in addition to the room temperature. By accessing this parameter and pressing the programming key the curve can be shifted in a parallel manner as indicated in the figure shown below. The value is indicated on the display, from -20 to +20.		
5	2	4	Room sensor Influence to calculate the set-point temperature - Thermoregulation enabled-	from 0 to 20	20
			If setted = 0 the room temperature doesn't influence the calculation of the set-point. If setted = 20, the room temperature has the maximun influence to calculate the set-point - only active when the BUS device is connected		
5	2	5	Maximum Central Heating Temperature Zone 2	from 40 to 82 (°C)	82
5	2	6	Minimum Central Heating Temperature Zone 2	from 40 to 82 (°C)	40

menu	sub-menu	parameter	description / notes	value	default setings
5	3		**DIAGNOSTICS**		
5	3	0	Room Temperature Zone 2 *only active when the BUS device is connected*		
5	3	1	Flow Temperatuyre Zone 2 *Only active with Heating Zones Modules Management*		
5	3	2	Return Temperature Zone 2 *Only active with Heating Zones Modules Management*		
5	3	3	Set Heating Temperature Zone 2 *only active when the BUS device is connected*		
5	3	4	Heat Request Zone 2	0 = OFF - 1 = ON	
5	3	5	Pump Status Zone 2 *Only active with Heating Zones Modules Management*	0 = OFF - 1 = ON	
5	4		**DIAGNOSTICS** ***Only active with Heating Zones Modules Management***		
5	4	0	Operation Mode - Test	0 = OFF 1 = ON 3 = Manual	
5	4	1	Valve control	0 = OFF 1 = open 2 = closed	
5	4	2	Pump control	0 = OFF 1 = ON	
5	5		**MULTIZONE** ***Only active with Heating Zones Modules Management***		
5	5	0	Heating collector temperature	from 0 to 120 (°C)	
5	5	1	Heating collector flow outlet temperature offset	from 0 to 40 (°C)	
7			**TEST & UTILITIES**		
7	0	0	Test Mode *Enabled also by pressing for 10 seconds the Reset button. This function is deactivated automatically after 10 minutes, or when the RESET button is pressed.*	t -- = Max Heating power t ¨ = Max DHW power t _ = Minimum power	0
7	0	1	Air purge Function	Press Menu/Ok button to active	
8			**SERVICE PARAMETERS**		
8	1		**SERVICE CODE** *press the programming "+" button to select 234 and press the MENU button*		222
8	2		**BOILER**		
8	2	0	Set temperature Central Heating(°C)	from 0 to 165 mA	
8	2	1	Fun Status	0 = OFF - 1 = ON	
8	2	2	NOT ACTIVE		
8	2	3	Pump speed	0 = OFF 1 = Low speed 2 = High speed	
8	2	4	Diverter valve position	0 = D.H.W. 1 = Central Heating	
8	2	5	D.H.W. Flow Rate (l/min)		
8	2	6	Air Pressure Switch Status	0 = Open 1 = Closed	

menu	sub-menu	parameter	description / notes	value	default setings
8	3		**BOILER TEMPERTURE**		
8	3	0	Set temperature Central Heating(°C)		
8	3	1	Flow Heating temperature (°C)		
8	3	2	Return Heating temperature (°C)		
8	3	3	Domestic Hot Water Temperature (°)		
8	4		**SOLAR & STORAGE**		
8	4	0	Storage Temperature - NOT ACTIVE		*Display only with Solar Kit or external storage Kit*
8	4	1	Solar collector Temperature		
8	4	2	D.H.W. Inlet Temperature		
8	4	3	NTC Storage Low		
8	4	4	Storage Set-point stratification		
8	4	5	Solar pump run time (hour/10)		
8	4	6	Collector overheat Temp Time (hour/10)		
8	5		**SERVICE**		
8	5	0	NOT ACTIVE		
8	5	1	NOT ACTIVE		
8	5	2	NOT ACTIVE		
8	5	3	NOT ACTIVE		
8	5	4	P.C.B Hardware version		
8	5	5	P.C.B Software version		
8	5	6	P.C.B BUS Software version		
8	6		**STATISTICS**		
8	6	0	Hours Burner On (Central Heating) (XXh)		
8	6	1	Hours Burner On (Domestic Hot Water) (XXh)		
8	6	2	Number of Flame Faults		
8	6	3	Numbeer of ignition Cycles		
8	6	4	NOT ACTIVE		
8	6	5	Heat request Duration		
8	7		**NOT ACTIVE**		
8	8		**ERROR HISTORY**		
8	8	0	Last 10 errors *This parameter makes it possible to see the last 10 errors shown by the boiler as well as the relevant day, month and year. Access the parameter to bring up the sequence of errors from number E00 to number E99.* *The following data is shown in a sequence for each single error:* *E 00 - error number* *1 08 - error code* *A 15 - day when the error occurred E00* *B 09 - month when the error occurred E00* *C 06 - year when the error occurred E00* *(only with remote control Clima Manager connected)*	from E0 to E9	
8	8	1	Reset Error List	Reset? Ok=Yes Esc=No	

maintenance

Maintenance is an essential part of the safe and efficient operation of the boiler and ensures its durability. It should be performed according to the instructions given in current legislation. Perform combustion analysis regularly in order to check the operating efficiency of the boiler and to make sure any polluting substances relased are within the boudaries set by current legislation.
Before beginning maintenance work:
- Disconnect the appliance from the electricity supply by turning the external bipolar switch to the "OFF" position;
- Close the gas valve and the central heating and domestic hot water system valve.

After the work has been completed the initial settings will be restored.

General comments
It is recommended that the following inspections be carried out on the boiler at least once a year:
1. Check the seals in the water part and, if necessary, replace the gaskets and restore the seal to perfect working order.
2. Check the seals in the gas part and, if necessary, replace the gaskets and restore the seal to perfect working order.
3. Visually check the overall condition of the boiler.
4. Visually check the combustion and, if necessary, disassemble and clean the burner.
5. Following the inspection detailed in point "3", disassemble and clean the combustion chamber, if necessary.
6. Following the inspection detailed in point "4", disassemble and clean the burner and injector, if necessary.
7. Cleaning the primary heat exchanger
8. Make sure the following heating safety devices are operating correctly:
   - temperature limit safety device.
9. Make sure that the following gas part safety devices are operating correctly:
   - absence of gas or flame safety device (ionisation).
10. Check the efficiency of the domestic hot water production process (test the flow rate and temperature).
11. Perform a general inspection of the boiler operation.
12. Remove oxide from the detection electrode using an emery cloth.

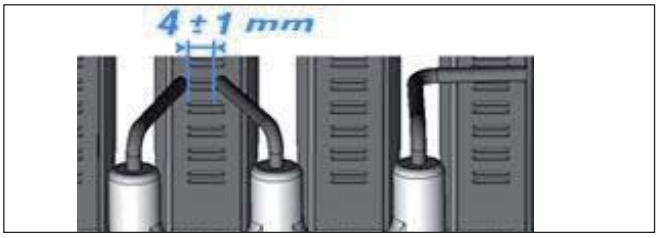
Operational test
After having carried out the maintenance operations, fill the heating circuit at a pressure of approximately 1.0 bar and release the air from the system.
Fill the domestic hot water system at the same time.
- Begin operating the boiler.
- If necessary, release the air from the heating system again.
- Check the settings and make sure all the command, adjustment and monitoring parts are working correctly.
- Check the seal and that the system for the expulsion of fumes/ suction of comburent air is operating correctly.

Draining procedures
The heating system must be drained using the following procedure:
- Switch off the boiler, make sure the external bipolar switch is in the OFF position and shut off the gas valve;
- Loosen the automatic air relief valve;
- Open the system discharge valve and collect the escaping water in a container;
- Empty the water from the lowest points of the system (where applicable).

If the system is to be left inactive in areas where the room temperature may fall below 0°C during winter, we recommend that anti-freeze liquid is added to the water in the heating system in order to avoid the need for repeated draining; when this liquid is used make sure it is compatible with the stainless steel used for the bodywork of the boiler.
We recommend the use of anti-freeze products which contain PROPYLENE GLYCOLS as these inhibit corrosion and that they are used in conjunction with the anti-scaling and anti-corrosion function, in the quantities suggested by the manufacturer, at the mimimum temperature.
Regularly check the pH level of the water/anti-freeze mix in the boiler circuit and replace it when the value measured is lower than the limit prescribed by the manufacturer.
DO NOT MIX DIFFERENT TYPES OF ANTI-FREEZE.
The manufacturer will not be held liable for any damage caused by the appliance or the system due to the use of inappropriate anti-freeze substances or additives.

Draining the domestic hot water system
Every time there is a danger of freezing, the domestic hot water system must be drained as follows:
- Shut off the water mains inlet valve;
- Open all the hot and cold water taps;
- Empty the water from the lowest points of the system (where applicable).

WARNING
Before handling, empty all components which may contain hot water, performing bleeding where necessary.
Descale the components in accordance with the instructions provided on the safety data leaflet supplied with the product used, make sure the room is well ventilated, wear protective clothing, avoid mixing different products, and protect the appliance and surrounding objects.
Seal all openings used to take a gas pressure reading or to make any gas adjustments.
Make sure that the nozzle is compatible with the supplied gas.
If a smell of burning is detected or smoke is seen leaking from the appliance, or there is a smell of gas, disconnect it from the electricity supply, shut off the gas valve, open the windows and call for technical assistance.



Information for the user

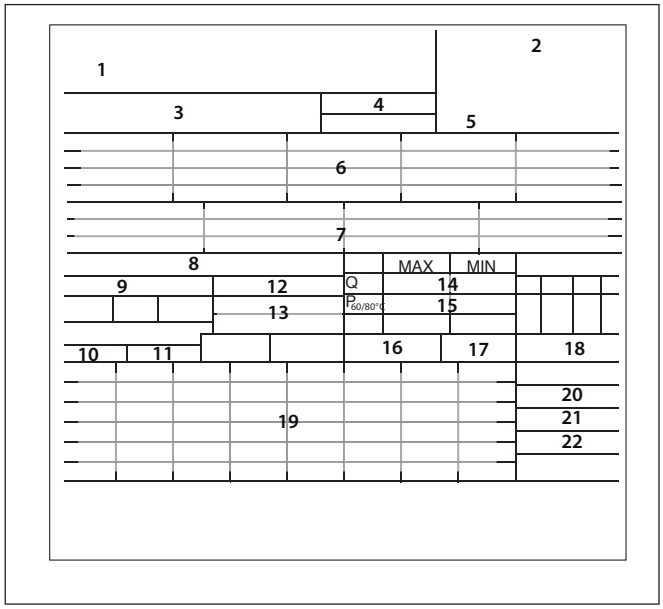
Inform the user on how to operate the appliance.

In particular, provide the user with the instruction manuals and inform him/her that these must be stored with the appliance.

Moreover, make sure the user is aware of the following:

- The system water pressure must be checked regularly (instruct the user on how to fill and bleed the system).
- How to set the temperature and adjustment devices for using the appliance correctly and in a more cost-efficient way.
- The system must be serviced regularly in compliance with legislation.
- The settings relating to the supply of combustion air and combustion gas must not in any event be modified.

Symbols used on the data plate



Legend :

1. Brand
2. Manufacturer
3. Boiler model - Serial number
4. Commercial reference
5. certification number
6. Destination country - gas category
7. Gas setting
8. Installation type
9. Electrical data
10. Maximum domestic hot water pressure
11. Maximum heating pressure
12. Boiler type
13. NOx class / Efficiency
14. Input rating nominal heating
15. Power ouput heating
16. DHW specific flow rate
17. Boiler output efficiency
18. Input rating nominal DHW
19. Gases which may be used
20. Temperature ambiante de fonctionnement
21. Max. central heating temperature
22. Max. domestic hot water temperature

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