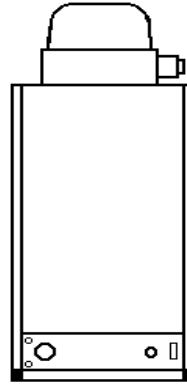
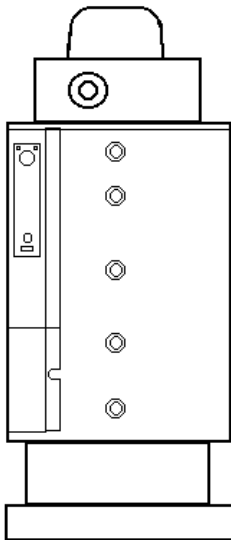


ATI SP 80

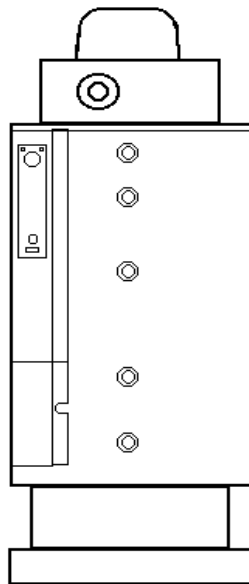


ATI SP 120

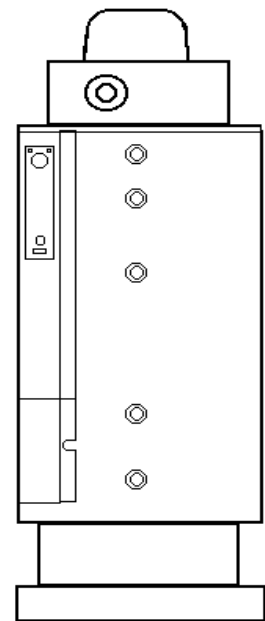
STREBEL ATI SP
DIRECT FIRED STORAGE WATER HEATER



ATI SP 220



ATI SP 300



ATI SP 400

**INSTALLATION, OPERATING
AND MAINTENANCE MANUAL**

- The following instruction book is **integral and essential part of the appliance**, and it has to be kept with care near the appliance, for any further consultation.
- The **appliance has been manufactured for hot water production**: any other use of it has to be considered dangerous and not suitable.
- The **appliance is not to be installed in damp rooms**, it has to be protected from water splashes or other liquids, to avoid anomalies to electrical and thermal devices.
- Installation has to be made by **professional qualified people**, who are responsible and aware of the safety regulations in force. A wrong installation, caused by not observing the manufacturer's instructions **can cause danger** to people, animals or things for which the manufacturer can not be considered responsible.
- The **guarantee** for all devices is 12 months from the data of the installation, and however not further 24 months from the manufactured period signed on the data label of the appliance.
- The appliance, as it is turned on, **has to be checked** by an Authorised Assistance Centre.
- Packaging parts (i.e. plastic bags, polystyrene, woods, clips, nails, etc.) **can be harmful to children and should be carefully disposed of immediately**.
- **Read carefully** the instructions and the advice contained in this booklet, concerning safety, installation, use and maintenance.
- If the appliance is sold or transferred to a new owner, make sure that this booklet stays with the appliance, so that the new owner or installer can consult it.
- **Do not place anything upon the appliance**.
- **To avoid damages caused by low temperatures**, if the appliance has to be left unused for a long period in a non-heated room, it is recommended the unit is drained down completely. The manufacturer is not responsible for faults, breakdowns or for water leakage from the plant caused by low temperatures.
- To comply with the Guarantee, we advise you to adhere to the following instructions and to use only **original spare parts and kits**, supplied by the manufacturer.

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1 - GENERAL INFORMATION AND CHARACTERISTICS

1.1 APPLIANCE'S CLASSIFICATION

These appliances are classified as: "Gas fired water heaters with sealed combustion circuit, with atmospheric burner, equipped with a fan".

The category of the appliance is I12H3B/P. This means that the appliance can be supplied to operate with gases of two different families. The atmospheric burner can operate with a gas supply of the second family (natural gas - group H) and of the third family (butane and propane).

With reference to the European Regulation EN 483, the type of the appliance can be C12, C32 or C52 (the last one is just for models ATI SP 220, 300, 400) according to the system of air supply and exhaust gas evacuation used.

C12: "appliances with a sealed combustion circuit connected to separate horizontal ducts enabling combustion air to be admitted to the burner and, at the same time, combustion products to be discharged to the outside of the room via orifices that are concentric or sufficiently close to each other to be located in almost identical wind conditions. The appliance is assisted by a mechanical means - a fan downstream of the exchanger".

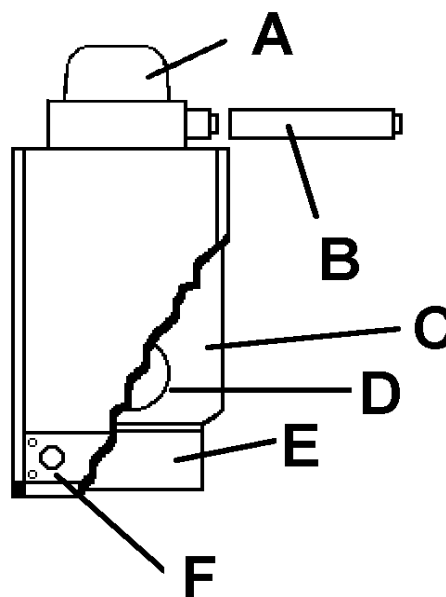
C32: "appliances with a sealed combustion circuit connected to separate vertical ducts enabling combustion air to be admitted to the burner and, at the same time, combustion products to be discharged to the outside of the room via orifices that are concentric or sufficiently close to each other to be located in almost identical wind conditions. The appliance is assisted by a mechanical means - a fan downstream of the exchanger".

C52: "appliances with a sealed combustion circuit. Flue duct orifices for air inlet and gas outlet can be placed in different pressure conditions. The appliance is assisted by a mechanical means - a fan downstream of the exchanger".

1.2 PACKAGING CONTENT

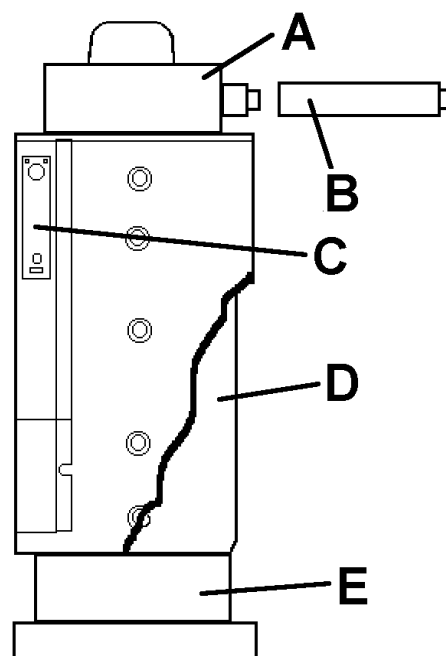
For the ATI SP 80 & 120: the appliance is delivered packaged in a cardboard box with appropriate protection. Inside there is this booklet, the guarantee certificate and the wall rosettes for coaxial flue pipes.

For the ATI SP 220, 300 & 400: the appliance is delivered packaged in a wooden box with appropriate protection. In a second cardboard box there is the flue hood (inside which there is the fan for the forced draft of exhaust gas), the flue outlet carrier, the wall rosette for coaxial flue pipes and the screws to fix the flue hood on the appliance and another plastic envelope containing this booklet and the guarantee certificate.



1a: ATI SP 80-120

a-flue hood; b-flue system kit; c-water tank;
d-inspection and cleaning flange;
e-combustion chamber; f-instrument control panel



Picture 1b: ATI SP 220, 300 & 400

a-flue hood; b-flue system kit;
c-instrument control panel; d-water tank;
e-combustion chamber;

1.3 CONSTRUCTIONAL AND OPERATIONAL DESCRIPTION

The purpose of the appliance is to allow the exchange of heat between the gas combustion products, burned in the combustion chamber, and the water held in the tank.

The combustion is completely sealed inside the combustion chamber, because the air supply and exhaust gas outlet are made out of the room where the appliance is installed. The sealed combustion chamber is placed at the bottom of the appliance, under the water tank. On the top there is the flue hood for the forced draft of flue gases: a fan, placed after the combustion chamber, assures the exhaust gas outlet and the right air supply to the burner for the combustion. Flue pipes which go through the water tank, carry the air to the combustion chamber and the exhaust gas back to the flue hood.

FLUE HOOD

The fan situated in the flue hood provides the air supply and extracts the products of combustion. The flue hood rotates through 360° for ease of positioning. If the fan is not operating correctly or the flue pipes are obstructed, a pressure switch, placed inside the flue hood, stops the gas supply to the burner.

WATER TANK

It is made of thick sheet steel and assures great resistance to pressure. The inside is coated with opal glass (a vitreous coating baked at over 850°).

This allows a high chemical resistance (unassailable from organically solvents and many other chemical substances), excellent abrasion resistance (low friction) and very good thermal stability (the opal glass on steel resists up to 500°C; moreover frost and cold have no effects). Moreover this allows a tank's long-life and a higher healthy water. Inspection and cleaning of the tank are allowed by an appropriate clean out and inspection door.

COMBUSTION CHAMBER

It is situated at the bottom of the appliance, and this is where the atmospheric burner, ignition and detection electrodes are housed. The combustion chamber is completely sealed.

INSTRUMENT CONTROL PANEL

On the instrument control panel there is all that is required to control and to adjust the normal operating of the appliance: control thermostat, ON/OFF switch, lock-out lamp/reset push-button and the thermometer

FLUE SYSTEM KIT (supplied separately)

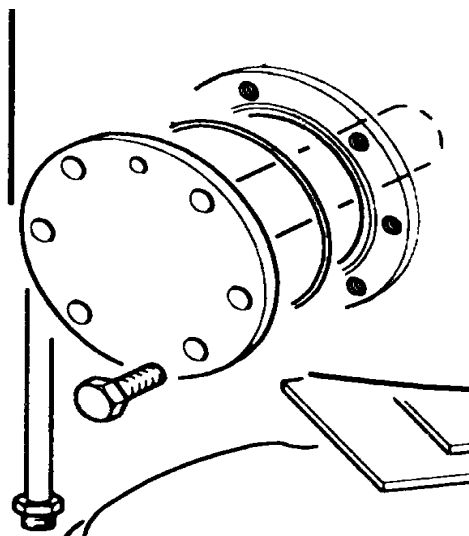
It assures the connection between the flue hood and the termination point, and for the air supply to the burner. The flue kit required must be selected from the various kits available, according to installation requirements:

- horizontal coaxial system, with air supply and flue outlet through the side wall.
- vertical coaxial system, with air supply and flue outlet through the roof.
- vertical single wall system, with air supply through the side wall and flue outlet through the roof.
- horizontal single wall system, with air supply through the side wall and flue outlet in the chimney.

1.4 CONTROL AND SAFETY DEVICES

MAGNESIUM ANODE (ATI SP 80 & 120 ONLY)

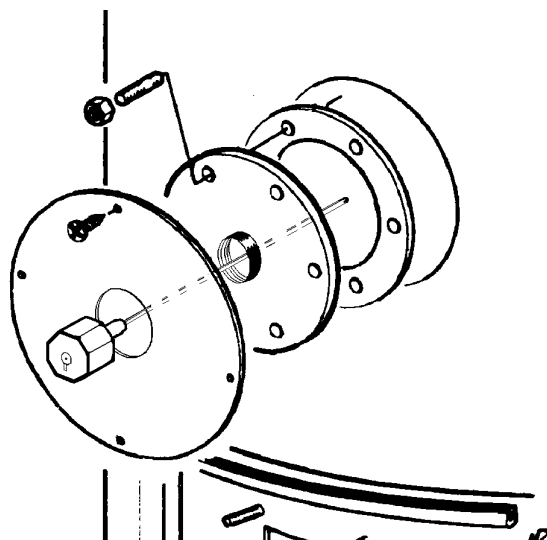
The water heater is protected against metal-to-metal corrosion by a magnesium anode. This has to be replaced each year in order to extend the working life of the appliance. The anode is placed in the inspection flange.



Picture 2a
Magnesium anode position
On ATI SP 80 & 120

CORREX ELECTRONIC ANODE (ATI 220, 300 & 400 ONLY)

The water heater is protected against metal-to-metal corrosion by an electronic anode. This requires a permanent 230 volt electrical supply in order to give full protection and extend the working life of the appliance. The anode is fitted in a 3/4" connection in the clean out and inspection flange.



Picture 2b
Correx electronic anode position
on ATI SP 220, 300 & 400

ELECTRONIC CONTROL BOX

This controls the opening and closing of the gas valve and the ignition of the burner.

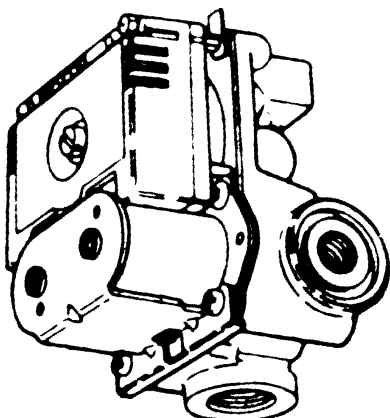
If the pressure switch is in the “no air” position when the control thermostat calls for heat, the fan is switched on. When sufficient air flow is proven by the pressure switch, a pre-purge period elapses before the built-in ignite and gas valve are energised. The ignition spark ignites the gas and the resulting flame is detected by the flame detection electrode. Ignition sparking is switched off immediately after a flame is established. If the flame is not established within the safety time, the control box locks out. In this case, wait a few seconds and reset the control box, by depressing the reset push-button on the instrument panel. A new ignition cycle will start.

CONTROL BOX - TECHNICAL DATA	
supply voltage	220/240 V 50/60 Hz
ambient temperature	0 - 60 °C
pre-purge time	30 sec
safety time	10 sec
minimum flame current	0,7 uA
response time off	< 1 sec.

The flame sensing is based on the rectification principle (an AC signal is sent from the control box to the detection electrode, where it is converted to a DC signal and returned to the control box).The control box is approved by Gastec, Holland and VDE and DIN-DVGW, Germany.

GAS VALVE

For ATI SP 80-120: This is a compact multi-functional and multi-gas control, with 2 direct-acting solenoid valves (class B, group 2) with high sealing force. It has an integral electronic packages for quiet operation with cushioned solenoid stops, and it incorporates an adjustable direct acting pressure regulator, and approved by DIN-DVGW Germany.



Picture 3
Gas Valve for ATI SP 80 & 120

The aluminium body has 3/8” x 3/8” (BSP P.I.) inlet and outlet and inlet screen (protected from potential pipe damage). Commissioning and any adjustments should be carried out by a qualified combustion engineer. Care should be takes to prevent foreign matter from entering valve during valve replacement.

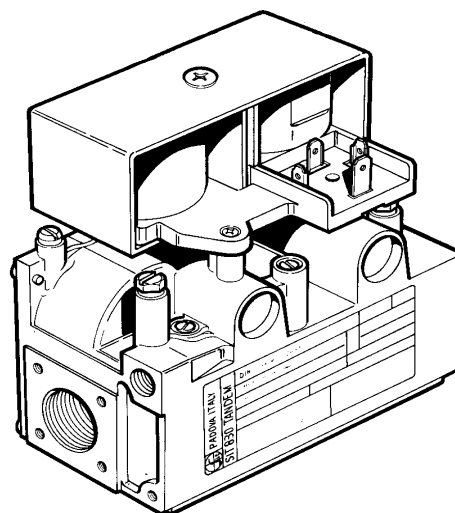
MAINTENANCE: the only maintenance operation allowed is the solenoid replacement, which has to be carried by qualified personnel only.

GAS VALVE FOR ATI SP 80 – 120	
Maximum pressure inlet	50 mbar
Voltage rating	220/240 V 50/60 Hz
Ambient temperature range	0 - 60 °C
Opening time	< 0.25 seconds
Closing time	< 0.25 seconds

For ATI 220 – 300 – 400 This is a multi-functional and multi-gas gas control, with double silent directly operated solenoid valve in class 2, adjustable pressure regulator and low rate ignition with ignition rate adjuster (factory set). Tis is approved by BRITISH GAS (UK) and GASTEC (Holland).

The aluminium body has 1/2” x 1/2” RP UNI-ISO 7 gas inlet and outlet, inlet and outlet pressure test points and inlet filter. The solenoids are connected in series, with a single electrical connector for both. Commissioning and any adjustments should be carried out by a qualified combustion engineer. Care should be takes to prevent foreign matter from entering valve and ensure that gas flow follows arrow on valve body during valve replacement.

MAINTENANCE: the only maintenance operation allowed is the solenoid replacing, which has to be carried out by qualified personnel only.

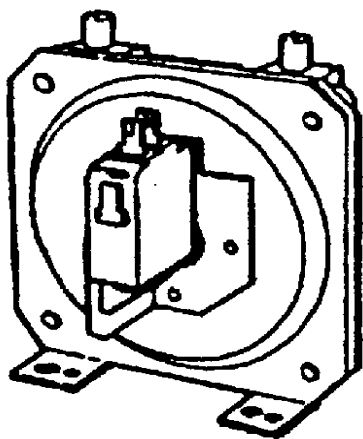


Picture 4
Gas Valve for ATI SP 220, 300 & 400

GAS VALVE FOR ATI SP 220, 300 & 400 TECHNICAL DATA	
Maximum pressure inlet	50 mbar
Voltage rating	220/240 V 50/60 Hz
Ambient temperature range	0 - 60 °C
Opening time	< 0.25 seconds
Closing time	< 0.25 seconds

DIFFERENTIAL PRESSURE SWITCH

The pressure switch functions as a (combustion) airflow supervisor with a safe start interlock. If the airflow is not enough it will cut-off the gas flow to the burner. This occurs for a fan failure or for an obstruction in the combustion circuit.



Picture 5
Differential Pressure Switch

It is placed in the flue hood and it is connected by two silicon pipes to two probes inside the flue hood, to test the pressure difference on the flue outlet when the fan is operating. In front of the device there is an adjustment screw for setting, which is factory set. It has three terminals (common, normally closed NC and normally open NO). It is approved by UL (USA), TÜV and DIN-DVGW (Germany).

DIFFERENTIAL PRESSURE SWITCH TECHNICAL DATA	
Maximum sustained pressure	6 mbar
Ambient temperature	-10/ + 70°C
Contact terminals resistance	< = 300m?
Electrical rating	250V ~ / 1.5A

ADJUSTABLE CONTROL THERMOSTAT 0-70°

This controls the operation of the appliance, switching the burner on and off, according to the water temperature set. This is a single pole liquid filled sensing bulb with operating switch contacts. It is approved by VDE (Germany) and IMQ (Italy).

ADJUSTABLE CONTROL THERMOSTAT TECHNICAL DATA	
contacts rating	250 V ~/2,5 A
temperature differential	4° ±/ - 1°K
max. bulb temperature	150 °C
temperature range	40° / 80°

SAFETY LIMIT THERMOSTAT

Cuts off the burner operating in case the appliance overheats, caused by control thermostat failure or lack of circulation. To switch the appliance on again it is necessary to press the manual reset button. The cause of the safety lock should be investigated.

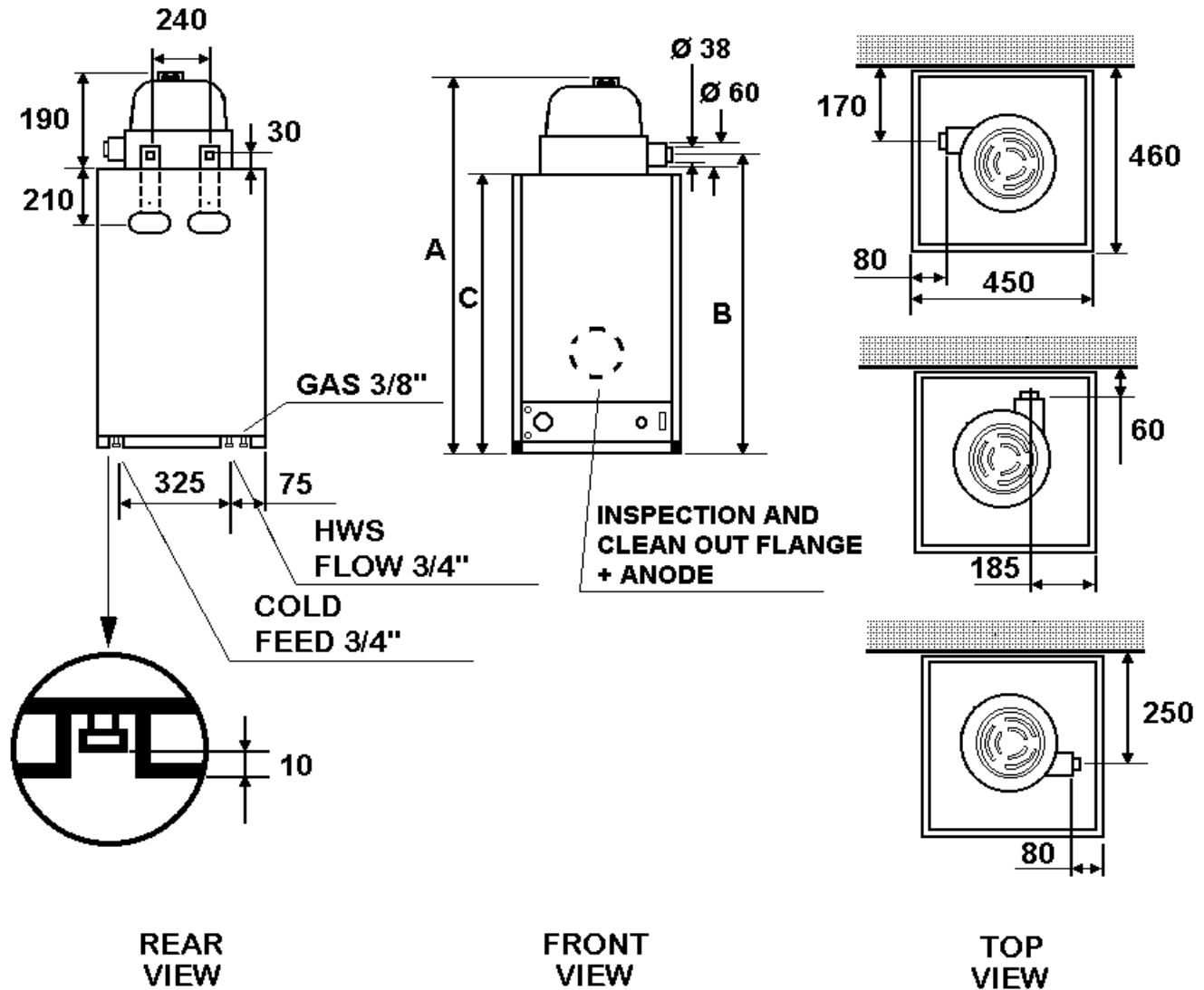
For ATI SP 80 & 120: This is a single pole thermostat with snap action contacts and temperature control by surface contact. It is approved by VDE (Germany), SEMKO (Sweden), UL (USA), ASEV (Switzerland), KEMA (Holland).

SAFETY LIMIT THERMOSTAT (ATI SP 80 & 120) TECHNICAL DATA	
intervention temperature	85°C
tolerance intervention	+5° / -5°K
differential	14°K
contacts resistance	£ 5 mW
capacity	250 V ~/10A

For ATI 220, 300 & 400: This is a single pole liquid filled type, temperature limited with manual reset and positive cut-off in case of capillary breakage. The high limit temperature is factory set at 90°. It is approved by VDE and DIN (Germany), SEMKO (Sweden) and IMQ (Italy)

SAFETY LIMIT THERMOSTAT (ATI SP 220, 300 & 400)	
adjustable limit temperature	90°/110°
tolerance	+0° / - 6°K
contacts rating	250 V ~/2,5 A
max. bulb temperature	125 °C

DIMENSIONS AND CONNECTIONS
ATI SP 80 & 120

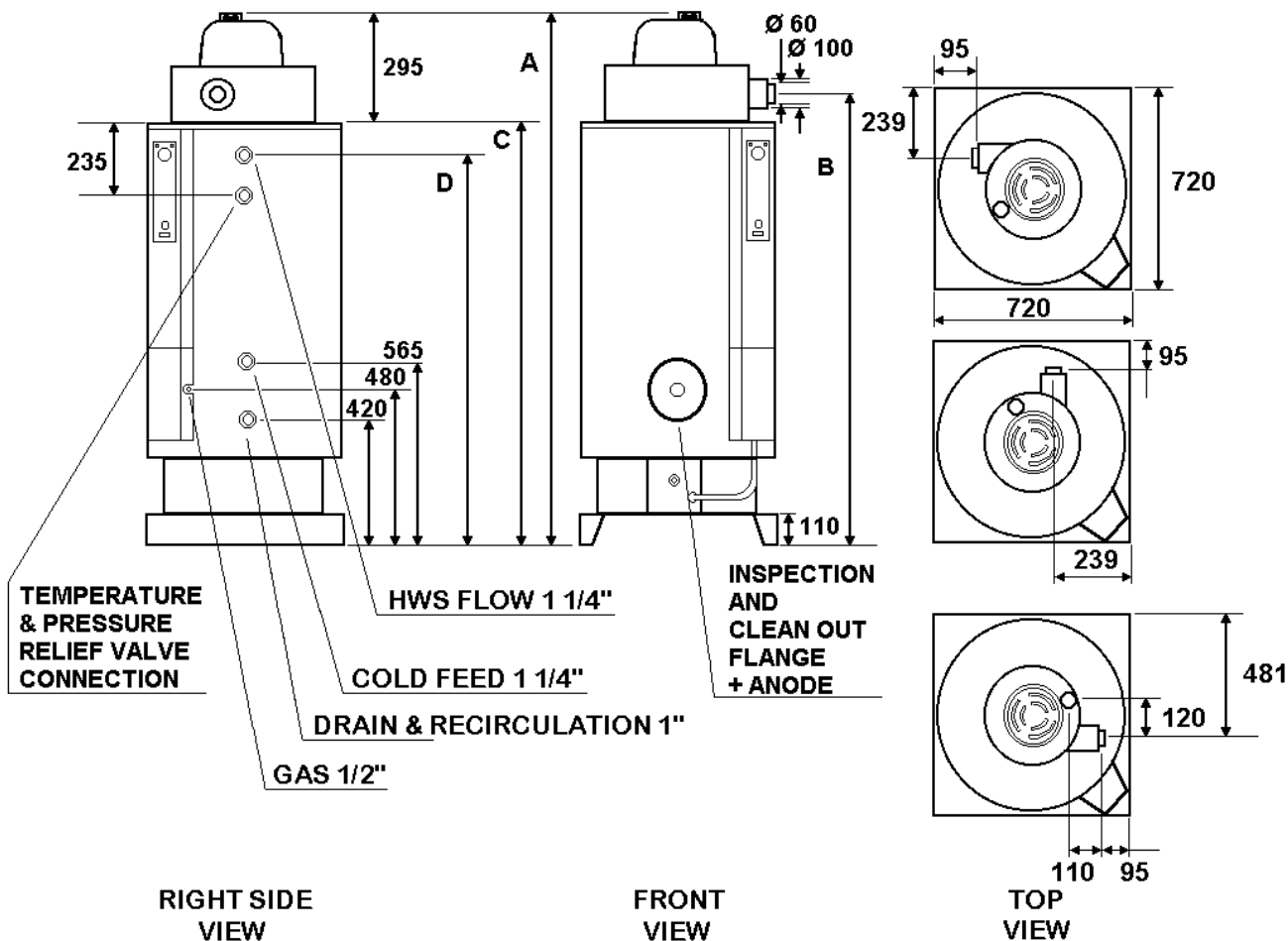


		ATI SP 80	ATI SP 120
A	OVERALL HEIGHT	1040 mm	1400 mm
	WIDTH	450 mm	450 mm
	DEPTH	460 mm	460 mm

	HEIGHT OF FAN UNIT	190 mm	190 mm
B	HEIGHT WITHOUT FAN UNIT	850 mm	1210 mm
C	HEIGHT TO FLUE CONNECTION	895 mm	1255 mm
	FLUE CONNECTION DIAMETER (INNER PIPE)	38 mm	38 mm
	FLUE CONNECTION DIAMETER (OUTER PIPE)	60 mm	60 mm

	FLANGE DIAMETER FOR INSPECTION AND CLEAN OUT AND ANODE REPLACEMENT	85 mm	85 mm
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DIMENSIONS AND CONNECTIONS ATI SP 220, 300 & 400



		ATI SP 220	ATI SP 300	ATI SP 400
A	OVERALL HEIGHT	1660 mm	2015 mm	2365 mm
	WIDTH	720 mm	720 mm	720 mm
	DEPTH	720 mm	720 mm	720 mm

BASE				
BASE HEIGHT		110 mm	110 mm	110 mm
BASE WIDTH		720 mm	720 mm	720 mm
BASE DEPTH		720 mm	720 mm	720 mm

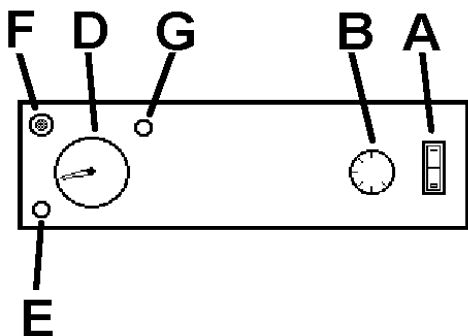
HEIGHT FROM FLOOR OF:					
GAS CONNECTION	1/2"	480 mm	480 mm	480 mm	
COLD WATER FEED CONNECTION	1 1/4"	565 mm	565 mm	565 mm	
DRAIN & RECIRCULATION CONNECTION	1"	420 mm	420 mm	420 mm	
D	HOT WATER OUTLET CONNECTION	1 1/4"	1300 mm	1655 mm	2005 mm
	HEIGHT OF FAN UNIT		295 mm	295 mm	295 mm
B	HEIGHT TO FLUE CONNECTION		1495 mm	1840 mm	2190 mm
C	HEIGHT WITHOUT FAN UNIT		1365 mm	1720 mm	2070 mm
	FLUE CONNECTION DIAMETER (INNER PIPE)		60 mm	60 mm	60 mm
	FLUE CONNECTION DIAMETER (OUTER PIPE)		100 mm	100 mm	100 mm

INSPECTION AND CLEAN OUT FLANGE				
DIAMETER		120 mm	120 mm	120 mm
HEIGHT FROM FLOOR		460 mm	460 mm	460 mm

TECHNICAL DATA

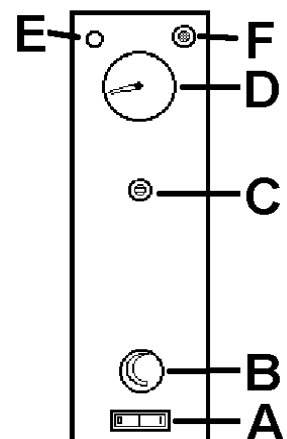
ATI SP Model		80	120	220	300	400
Storage Capacity	Litres	75	115	220	300	400
Nominal Input	Btu/h	17,060	17,060	97,242	105,772	105,772
	kW/h	5.0	5.0	28.5	31.0	31.0
Nominal Output	Btu/h	16,036	16,036	88,029	95,536	95,536
	kW/h	4.7	4.7	25.8	28.0	28.0
Combustion Efficiency		94%	94%	92%	92%	92%
10 Minute Output at 54°C (Storage Water at 60°C - Cold Water at 10°C)	Lits/10 mins	91	140	305	401	515
	Gals/10 mins	20	30	67	88	113
Continuous Output With a 44°C Temperature Difference	Lits/h	91	91	502	568	568
	Gals/h	20	20	110	125	125
Time To Recover With a 44°C Temperature Difference	mins	44	71	26	34	43
Gas Input Rate (Natural Gas G20)	m³/h	0.53	0.53	3.01	3.28	3.28
	ft³/h	18.71	18.71	106.29	115.82	115.82
Injector Diameter	mm	2.00	2.00	1.25	1.25	1.25
Gas Pressure At Injector	mbar	11.5	11.5	10.0	12.2	12.2
	in Wg	4.5	4.5	4	4.8	4.8
Gas Input Rate (LPG G30/31 28-30/37 mbar)	kg/h	0.39	0.39	2.24	2.44	2.44
	lbs/h	0.85	0.85	4.93	5.37	5.37
Injector Diameter	mm	1.15	1.15	0.72	0.75	0.75
Gas Pressure At Injector	mbar	28.2	28.2	28.2	28.4	28.4
	in Wg	11	11	11	11.1	11.1
Electrical Supply For Unit		230 Volt - 50Hz - Single Phase - 3 Amp Fuse				
Electrical Supply For Electronic Anode		N/A	N/A	Permanent 230 Volt- 50Hz Single Phase -3 Amp Fuse		
Maximum Working Pressure	bar	6	6	6	6	6
	psi	87	87	87	87	87
Minimum Working Pressure	bar	0.1	0.1	0.1	0.1	0.1
	psi	1.5	1.5	1.5	1.5	1.5
Shipping Weight	kg	49	74	202	245	286
Filled Weight	kg	124	189	422	545	686

INSTRUMENT CONTROL PANEL

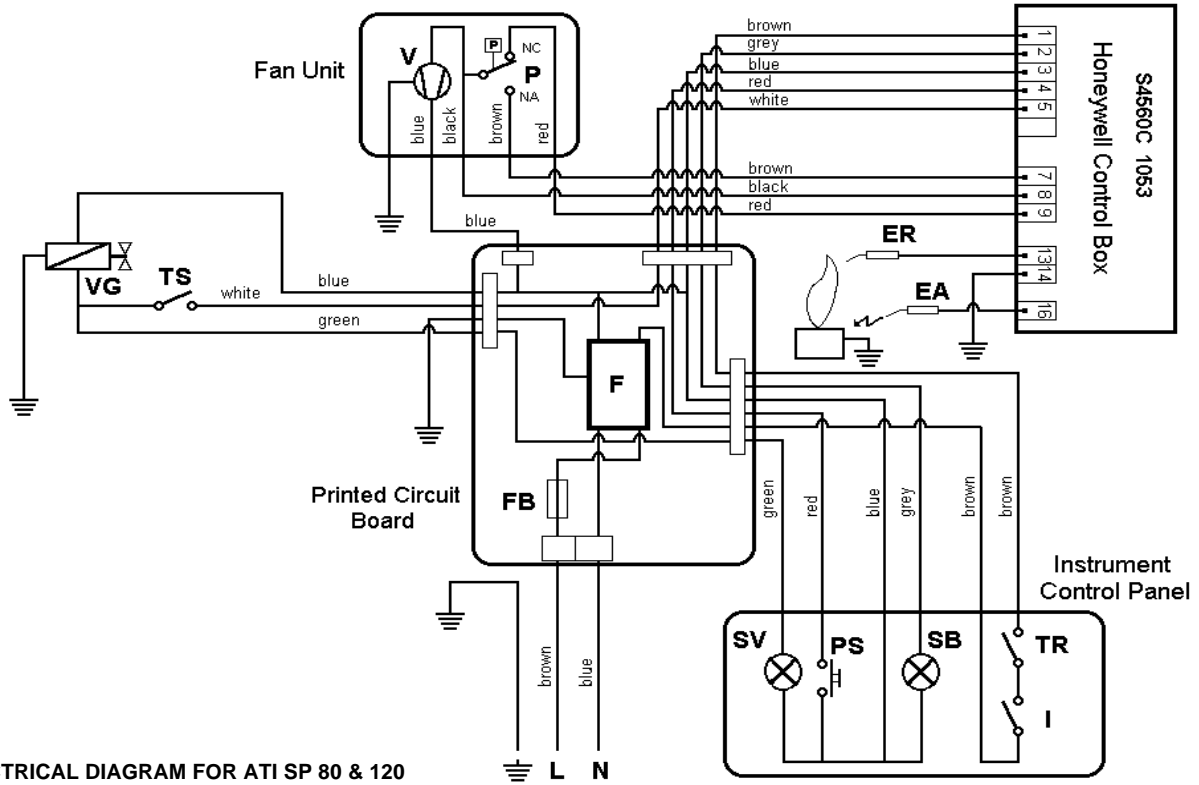


Picture 9a
ATI SP 80-120

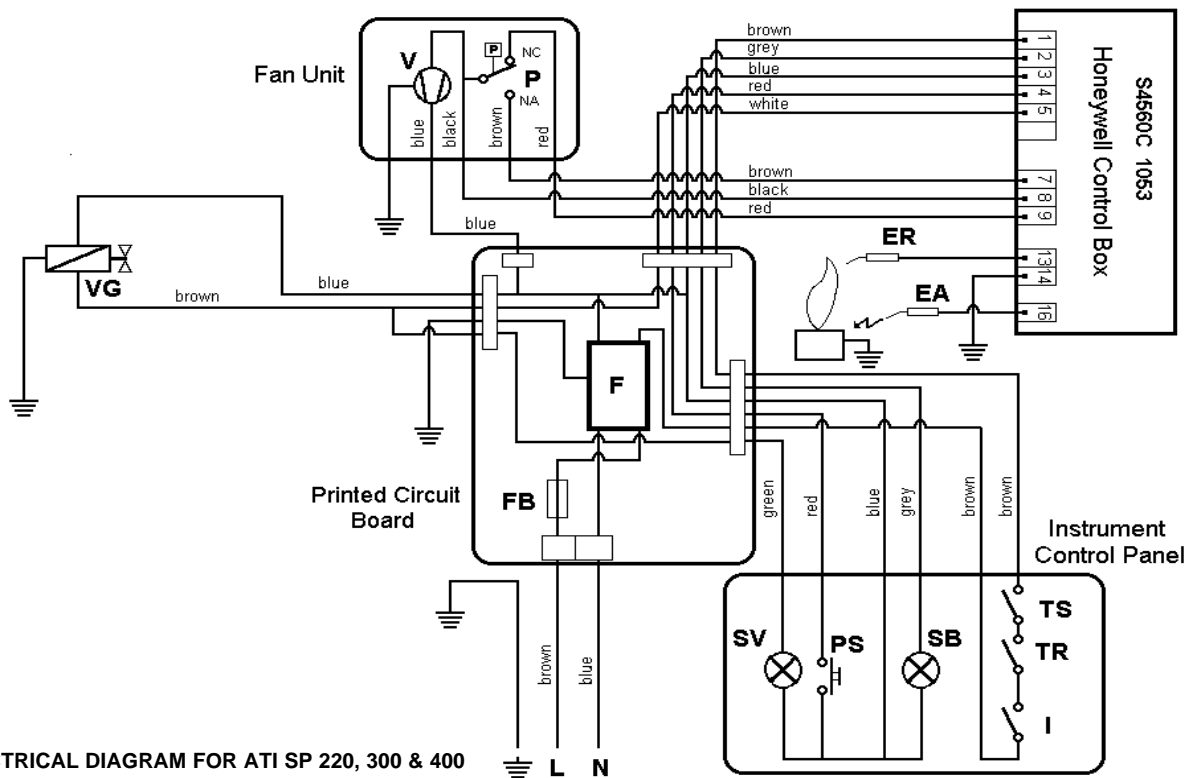
- A ON/OFF SWITCH
- B ADJUSTABLE CONTROL THERMOSTAT 0-70°C
- C SAFETY LIMIT THERMOSTAT (MANUAL RESET)
- D THERMOMETER
- E GREEN BURNER (ON) LIGHT
- F LOCK OUT LIGHT + RESET BUTTON
- G HOLE FOR INSPECTION OF THE COMBUSTION



Picture 9b
ATI SP 220-300-400



ELECTRICAL DIAGRAM FOR ATI SP 80 & 120



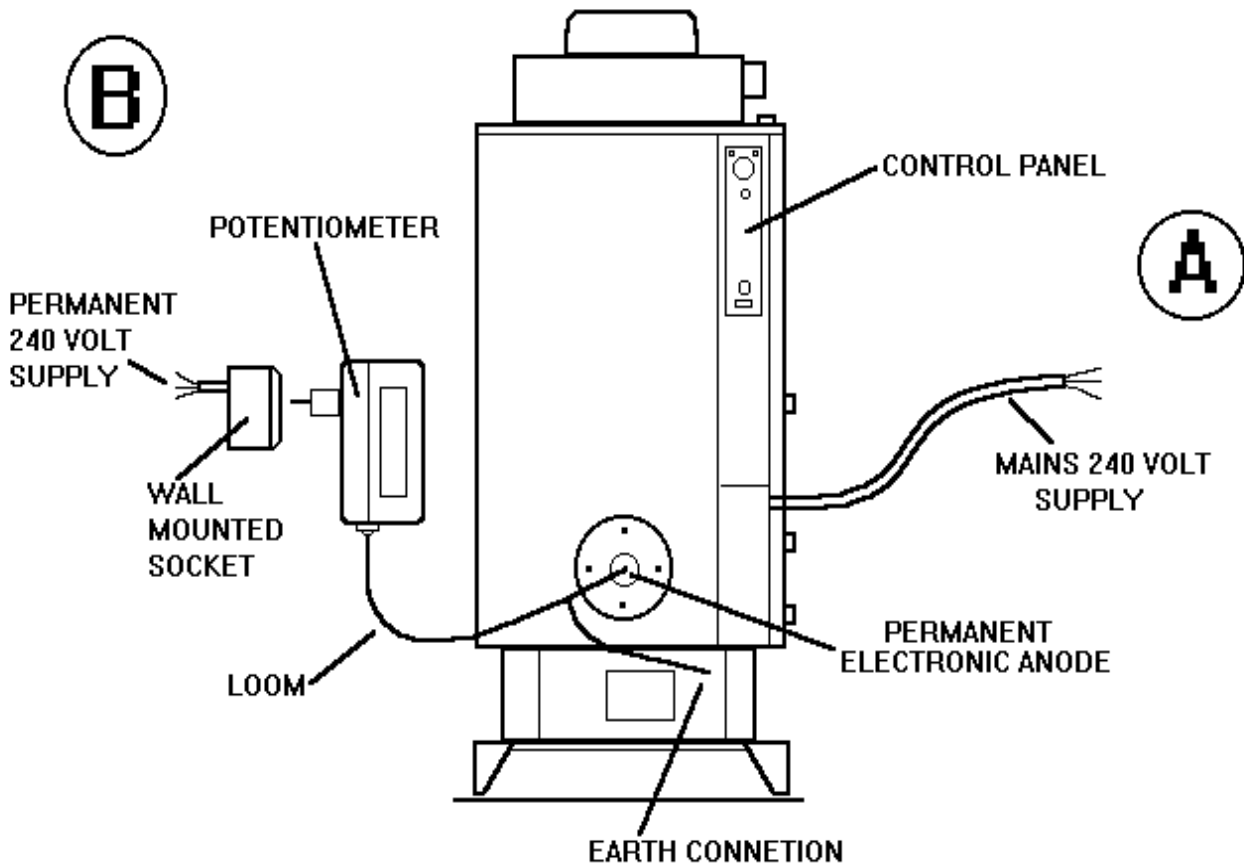
ELECTRICAL DIAGRAM FOR ATI SP 220, 300 & 400

LEGEND

I	ON / OFF Switch	P	Differential Pressure Switch
TR	Adjustable Control Thermostat	ER	Flame Detection Electrode
TS	High Limit Thermostat	EA	Ignition Electrode
SV	Green Burner (On) Light	V	Flue Extraction Fan
VG	Gas Valve	F	EMC Suppression Filter
SB	Lock-Out Light	FB	Fuse For Printed Circuit
PS	Reset Push - Button		

IMPORTANT : WHEN ELECTRICAL CONNECTION IS CARRIED OUT, MAKE SURE THE LIVE AND NEUTRAL SUPPLY TO THE UNIT IS CORRECT. IF NOT, THE POLARITY WILL BE WRONG AND THE APPLIANCE WILL NOT OPERATE.

ELECTRONIC ANODE – ATI SP 220, 300 & 400



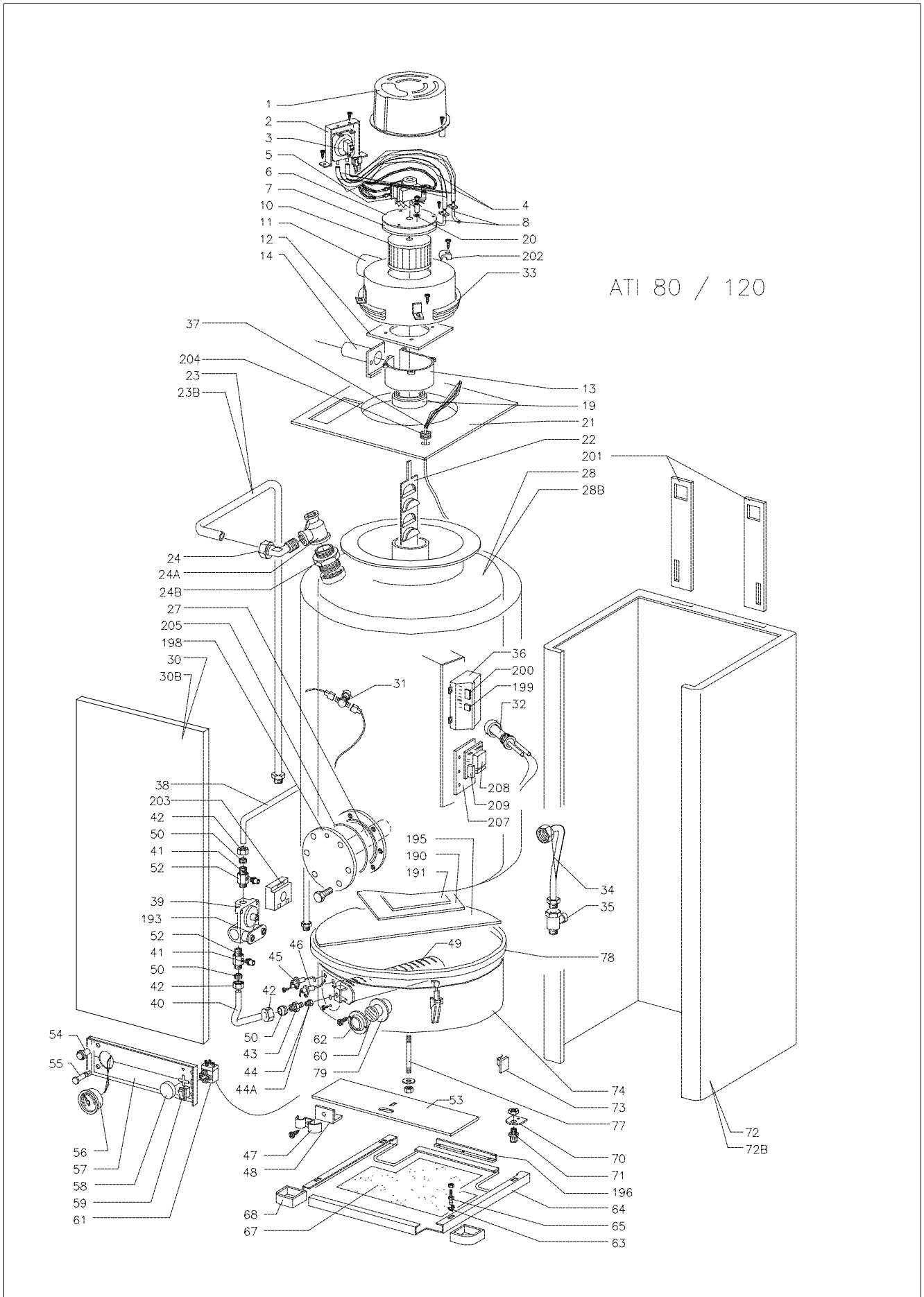
- A** The unit needs to be connected to a 230 volt single-phase electrical supply via the 3 core cable supplied. A double pole switch should be fitted in the vicinity of the equipment to allow for isolation of mains supply and protected with a 3 Amp fuse. This supply can be switched by a time clock if required.
- B** The permanent electronic anode also requires its own UN-interrupted 230 volt single phase electrical supply and protected with a 3 Amp fuse. The anode is mounted in the inspection and clean out flange on delivery, the Wall mounted socket, Potentiometer and Loom are in a box with the fan unit these all need to be assembled as shown above.

WARNING

IF THE PERMANENT ELECTRONIC ANODE IS NOT CONNECTED TO A PERMANENT 230 VOLT SUPPLY THE WARRANTY WILL BE INVALIDATED

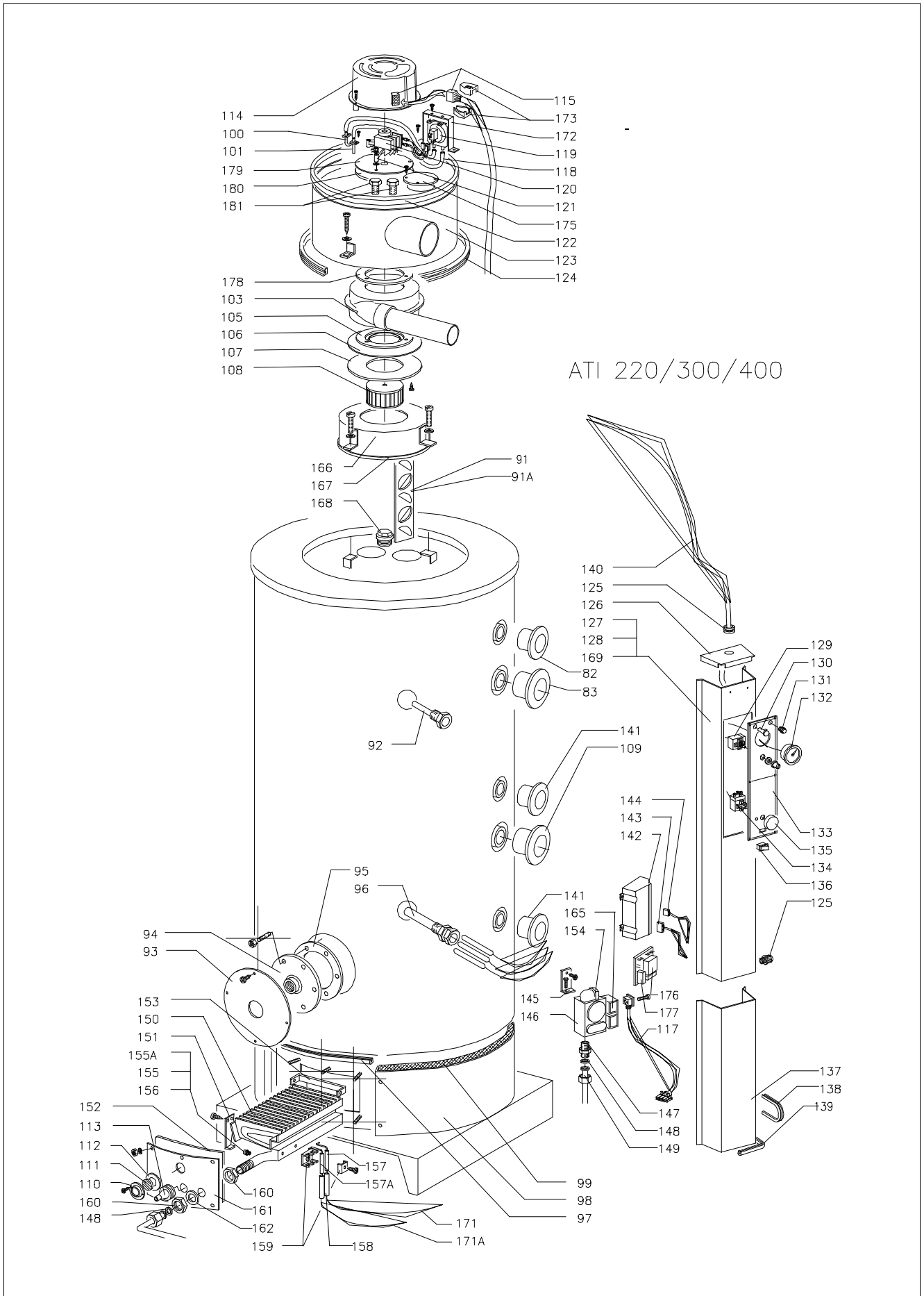
ATI SP 80, 120, 220, 300, 400 – INSTALLATION INSTRUCTIONS

POS.	DESCRIPTION	POS.	DESCRIPTION
1	motor cover	48	pipe support
2	bracket for pressure switch	49	burner bar
3	differential pressure switch	50	olive diam.10
4	silicon 5 x 8 tube for pressure switch	51	screen fitting (France and Belgium only)
5	30 W fan motor	52	fitting with pressure tale-off
6	9 x 110 fan support flange	53	control box fixing bracket for mod. 80/120
7	motor insulation 9 x 110 x 2	54	lock-out light and reset button
8	curve probe for pressure switch	55	green burner (on) light
10	fan 75 x 45	56	thermometer
11	flue hood casing 220 x 100	57	instrument support panel
12	insulating spacer 140 x 140 x 4	58	knob for control thermostat
13	fan casing	59	ON / OFF switch
14	flue outlet venture connection	60	sight glass
19	silicon gasket 84 x 22,5	61	adjustable control thermostat TR2
20	motor fixing seal 10 x 5,3	62	sight glass frame
21	upper casing cover	63	spring for casing stud
22	flue baffle	64	lower casing cover
23	hot water outlet pipe for mod. 80	65	stud for fitting casing
23b	hot water outlet pipe for mod. 120	67	hammer finish aluminium
24	brass elbow 1/2 x 14	68	lower corner pieces for casing
25	connection 1-1/4 x 1/2 DX D.53	70	cable gland support
27	magnesium anode for mod. 80 / 120	71	cable gland
28	insulated tank mod. 80	72	casing mod. 80
28b	insulated tank mod. 120	72b	casing mod. 120
30	casing front for mod. 80	73	self-adhesive NYLON
30b	casing front for mod. 120	74	combustion chamber case
31	safety limit thermostat	77	fixing pins
32	pocket for probe	78	silicon profile 16 x 8,5 x 0,7
33	seal for cover	79	sight glass gasket
34	cold water inlet pipe	190	stainless steel burner screen
35	N/A UK	191	insulation for burner screen 150 x 150 x 3
36	Honeywell control box	193	solenoid for gas valve WR 25M42S
37	wiring for mod. 80/120	195	air diverter for mod. 80
38	gas inlet pipe for mod. 80/120	195a	air diverter for mod. 120
39	gas valve WR 25M42S	196	lower corner piece for casing
40	gas pipe to the burner	197	terminal block
41	gas pressure point	198	clean out and inspection flange diam. 85
42	compression nut D=10 - 3/8"	199	3 way Molex plug for Honeywell control box
43	injector support connection CH 17 x 23,5 x 3/8G	200	5 way Molex plug for Honeywell control box
44	natural gas injector S16_200 hole D 2,00	201	wall hung brackets
44a	LPG gas injector S16_115 hole D 1,15	202	NYLON cable clamp
45	detection electrode	203	electronic package for gas valve
46	ignition electrode	204	rubber grommet
47	pipe securing bracket		



ATI SP 80, 120, 220, 300, 400 – INSTALLATION INSTRUCTIONS

POS.	DESCRIPTION	POS.	DESCRIPTION
82	1"1/4 PVC red washer	134	control thermostat
85	N/A UK	135	control thermostat knob
86	N/A UK	136	ON / OFF switch
91	flue baffle for ATI 300-400	137	module channelling
91a	flue baffle for ATI 220	138	channelling side seal
92	1/2" pocket for 1 probe	139	screen fitting Ø6.3 for ATI 300-400 (for France-Belgium)
93	flange cover with hole in	139a	screen fitting Ø5.2 for ATI 220 (for France-Belgium)
94	clean out and inspection flange #	140	wiring for ATI 220, 300 & 400
95	clean out and inspection flange gasket	141	1" PVC black washer
96	pocket for 3 probes	142	Honeywell control box
97	casing edging	143	5 way Molex connector for Honeywell control box
98	steel insulation cover	144	3 way Molex connector for Honeywell control box
99	combustion chamber insulation	145	gas valve bracket
100	curve probe for pressure switch	146	gas valve SIT 830 TANDEM
101	straight probe for pressure switch	147	1/2" nipples
103	fan housing	148	gas pipe gasket
105	fan housing inner seal 147 x 106 x 2	149	gas pipe
106	fan housing sheet 220 x 95	150	16 bank burner
107	fan housing outer seal 225 x 115 x 6	151	side bracket for burner
108	110 x 54 fan	152	burner door seal
109	1"1/4 PVC blue washer	153	burner rear bracket
110	sight glass frame	154	1/2" elbow flange for gas valve
111	sight glass	155	LPG gas injector S155_075 hole d.0,75(mod. 300-400)
112	sight glass gasket	155a	LPG gas injector S155_072 hole d.0,72 (mod. 220)
113	silicon cable grommet	156	natural gas injector S155_125 hole d.1,25
114	motor cover	157	detection and ignition electrode
115	6 way plug and socket for flue hood	158	silicone tube for electrode
117	gas valve connector	159	detection and ignition electrode bracket
118	silicon 5 x 8 tube for pressure switch	160	brass lock nut 1/2"
119	differential pressure switch	161	burner door
120	47 W fan motor	162	gas pipe seal gasket
121	motor fixing seal 10 x 5,3	163	N/A UK
122	flue hood edging profile	164	N/A UK
123	flue hood housing	165	solenoid for gas valve 830 TANDEM
124	flue hood seal	166	internal flue hood 250 x 60
125	cable clamp	167	rubber seal for internal flue hood 20 x 10 x 1,5
126	channelling cover	168	blanking plug 14 x 20
127	channelling for ATI 300 panel	169	channelling for ATI 220 panel
128	channelling for ATI 400 panel	170	1"1/4 PVC black washer
129	high limit thermostat (manual reset)	171	detection and ignition cable
130	green burner (on) light	172	bracket for pressure switch
131	lock-out light and reset button	173	cable strain relief for connector
132	thermometer		
133	instrument support panel	#	permanent electronic anode (parts as page 9)



2 - INSTALLATION INSTRUCTIONS

2.1 REFERENCE REGULATIONS

The installation of this water heater must be carried out in accordance with the relevant requirements of the gas safety (installation and use) Regulations 1994, the I.E.E. Wiring Regulations and the Bylaws of the Local Water Authority, and the Building Regulations 1985.

Detailed recommendations are contained in the following :

British Standard Code of Practice CP. 341 : 300-307 ; CPP 342 : Parts 1 and 2 : BS 5440 Parts 1 & 2 : BS 5546 :BS 5854 : BS 6798 : BS 6891 : IGE/UP/2 Gas Installation Pipework, Boosters and Compressors on Industrial and Commercial Premises : BS 7206.

“The Gas Safety (Installation and Use) Regulations 1994 :

It is the law that all gas appliances are installed by CORGI registered contractors in accordance with the above regulations. Failure to install appliances correctly could lead to prosecution. It is in your own interest, and that of safety, to ensure that the law is complied with”.

2.2 INSTALLATION RECOMMENDATIONS

- The installation must be carried out by qualified personnel, responsible for observing the current safety standards and legislation and for the testing
- The installation of this water heater must be carried out strictly in accordance with the relevant requirements of point 2.1.
- During installation and maintenance, respect carefully the instructions contained in this booklet. Changes of any connections or the non-observance of these instructions will cause the warranty to be invalidated.
- Before every operation of installation, maintenance or repairing, remember to isolate the electrical supply to the appliance.
- For the flue connections use only original kit supplied by the manufacturer of the appliance (they have to be purchased separately according the kind of installation that has to be carried out).

2.3 LOCATION OF THE APPLIANCE

As a type C gas appliance (room sealed), this water heater can be installed in a room, without any restrictions for air supply and for room volume. Where the appliance is installed in a compartment the following ventilation is required.

MODEL	Direct to Outside	To Internal Space
	High and Low Level	High and Low Level
ATI 80	23	45
ATI 120	23	45
ATI 220	131	261
ATI 300	140	279
ATI 400	140	279

ALL FREE AREAS GIVEN IN CM²

When the unit is installed as a single wall fan assisted model (not room sealed), ventilation is required for combustion and cooling air as listed below.

MODEL	Direct to Outside		To Internal Space	
	High Level	Low Level	High Level	Low Level
ATI 80	23	45	45	90
ATI 120	23	45	45	90
ATI 220	131	261	261	522
ATI 300	140	279	279	558
ATI 400	140	279	279	558

ALL FREE AREAS GIVEN IN CM²

The flue pipe, in passing through the wall, must not be cemented, in order to permit subsequent maintenance of it. For this purpose the proper rosettes, issued in the packaging of the appliance, can be used. To prevent ingress of water during storms, it is recommended that the air intake and flue pipe should have a slight gradient downwards.

Models ATI SP 80 & 120 are for wall hung installations. For this purpose the unit is to be mounted using the two brackets at the back of the appliance, towards the top (wall fixings not supplied).

Models ATI SP 220, 300 & 400 are for floor standing installation. The water heater must stand on a level non combustible base, suitable to support the weight of the appliance, water content and any ancillary equipment.

ATI SP 80, 120, 220, 300 & 400

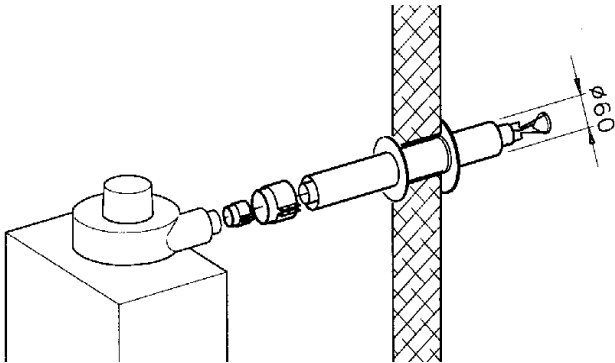
Leave a space above the water heater of not less than 200 mm, in order to allow maintenance to the flue hood and unit.

When locating the water heater there must be consideration to the maximum permissible length of the flue system chosen. Where the flue pipe passes out through a side wall, guidance on siting the terminal is given on page

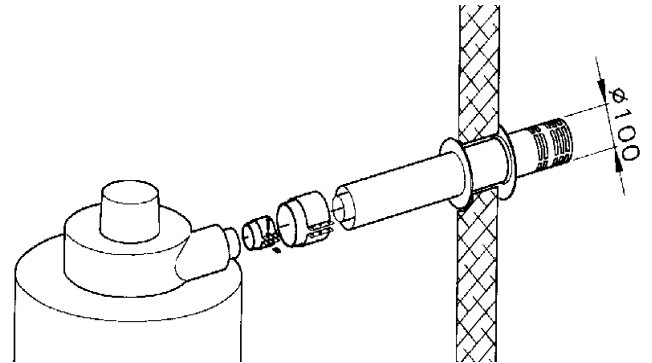
FLUE OPTIONS AVAILABLE

HORIZONTAL COAXIAL FLUE SYSTEM:

Maximum length of coaxial pipe, 3 meters (less 1m for each bend used)



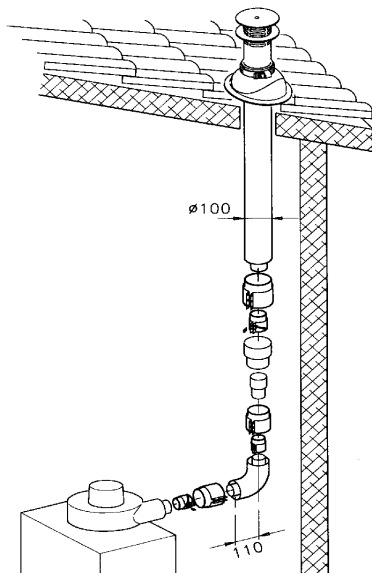
ATI SP 80 & 120 FLUE OPTION P



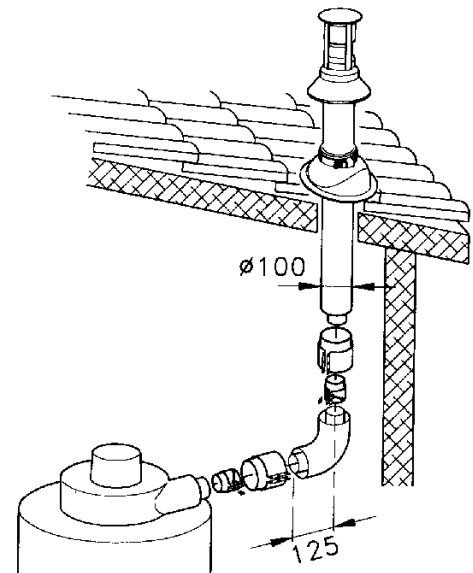
ATI SP 220, 300 & 400 FLUE OPTION M

COAXIAL THROUGH THE ROOF FLUE SYSTEM:

Maximum length of coaxial pipe, 2 meters (With 1 coaxial bend only)



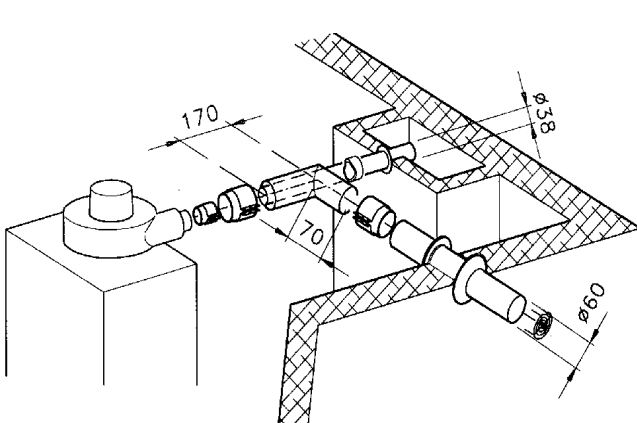
ATI SP 80 & 120 FLUE OPTION S



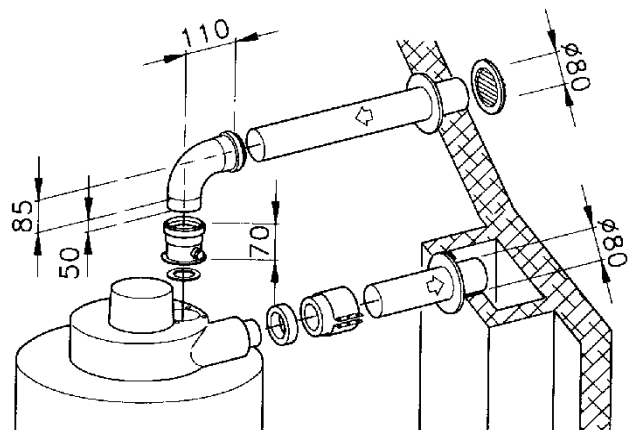
ATI SP 220, 300 & 400 FLUE OPTION O

HORIZONTAL SINGLE WALL FAN ASSISTED FLUE SYSTEM:

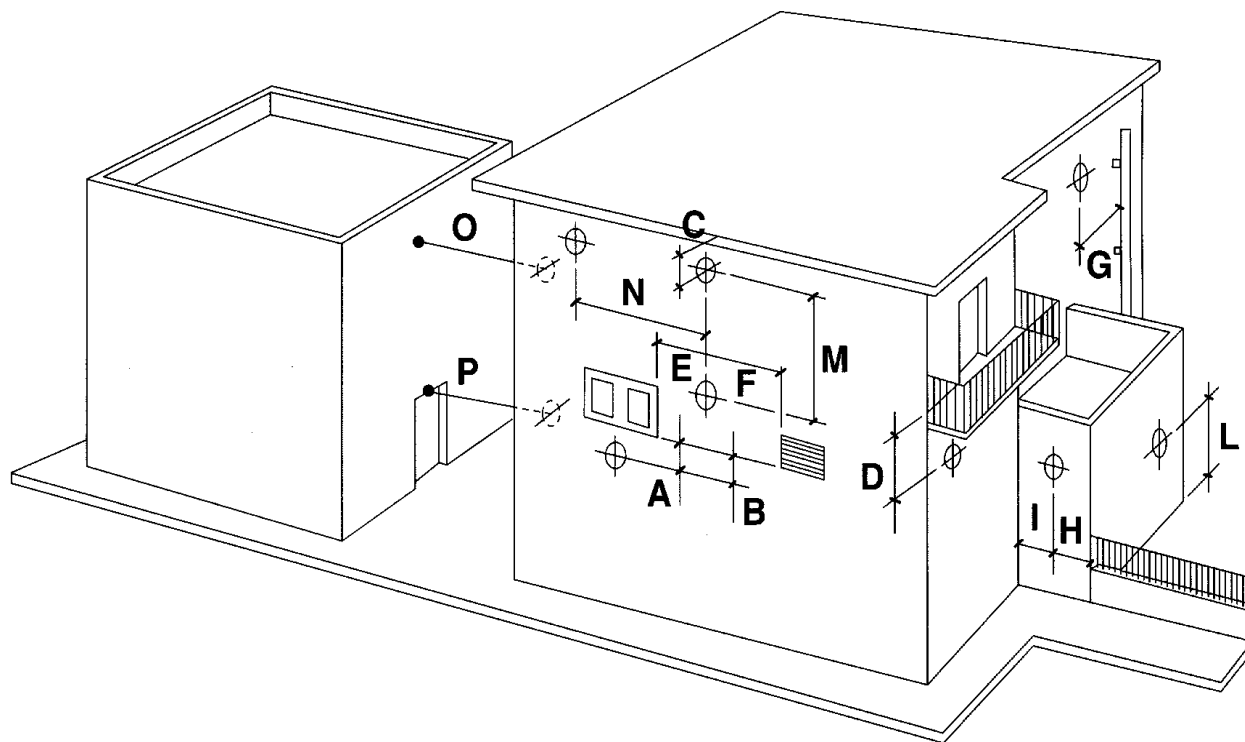
Maximum length of air intake pipe, 6 meters. Maximum length for flue outlet pipe, 6 meters (less 1m for each bend used)



ATI SP 80 & 120 FLUE OPTION R



ATI SP 220, 300 & 400 FLUE OPTION N



Dimension	Minimum Distances from the Flue Terminal	(mm)
A	Directly below an opening window	300
B	Directly below an air vent	300
C	Below gutters, soil pipes or drain pipes	75
D	Below a Balcony	200
E	Horizontal from a window or door on the same wall	300
F	Horizontal from an air vent on the same wall	300
G	From vertical drain pipes and soil pipes	75
H	From external corners	300
I	From internal corners	300
J	Below eaves	200
L	Above ground, roof or balcony level	300
M	Vertical from a terminal on the same wall	1500
N	Horizontal from a terminal on the same wall	300
O	From a surface facing a terminal	600
P	From a terminal facing a terminal	1200

2.4 INSTALLATION OF FLUE HOOD

The top cover of the water heater has four holes for the fixing of flue hood, which allow four position of it, one at 90° from each other. When an intermediate position is necessary proceed as follows :

ATI SP 80 & 120

Position the flue hood on the water heater with the flue and air intake in the desired direction. Drill the top cover of the heater with a Ø 4mm drill, through the four fixing brackets of the flue hood.

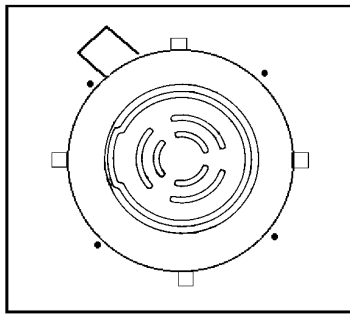


ILLUSTRATION 13A

Tighten the screws supplied for fixing the flue hood by a few turns. Insert the seal between the flue hood and the casing, exerting light pressure on it if necessary. Tighten the screws with moderate force.

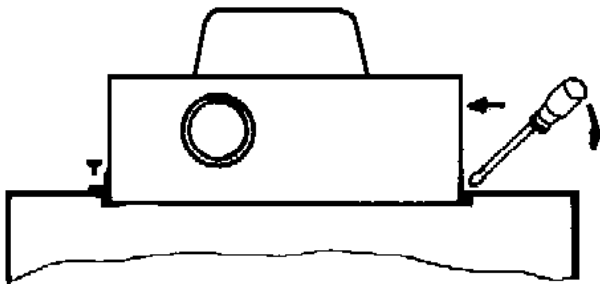


ILLUSTRATION 13b

ATI SP 220, 300 & 400

Position the flue hood on the water heater, as in illustration 14b, with the flue and air intake in the desired direction. Drill the top cover of the heater with a Ø 4mm drill, through the four fixing brackets of the flue hood.

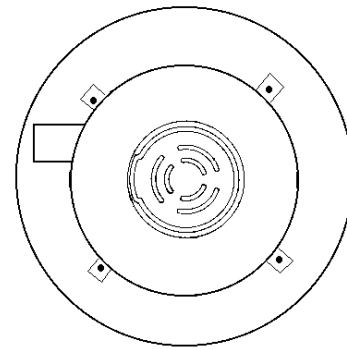


ILLUSTRATION 14a

Tighten the screws supplied for fixing the flue hood by a few turns. Insert the seal between the flue hood and the casing, exerting light pressure on it if necessary. Tighten the screws with moderate force.

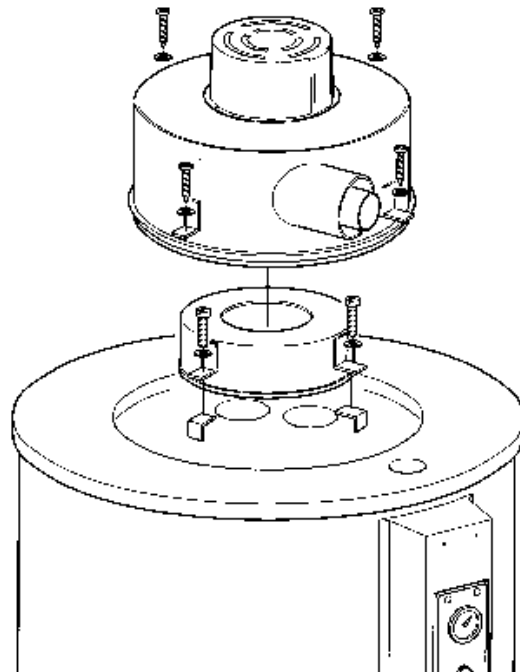


ILLUSTRATION 14b

Connect the electrical cable from the control panel to the fan unit, ensuring the plug connector is the correct way around and securely held. (Illustration 15)

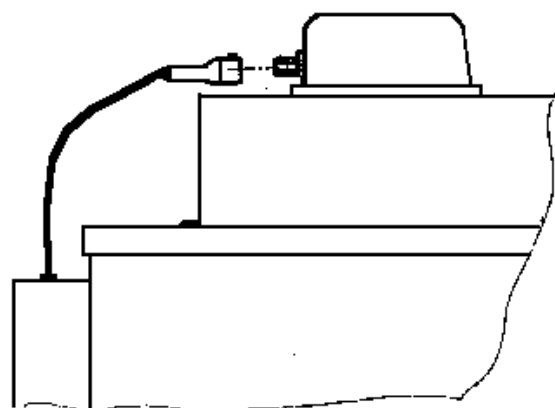


ILLUSTRATION 15

2.5a WATER CONNECTIONS

ATI 80 - 120

A : Cold water inlet, install in the following order:

1. Stopcock (recommended)
2. Inline strainer to remove any impurities as : sand, gravel, mud (optional)
3. softener or purifier, for very hard water (recommended).
4. Secondary return (where required).
5. drain cock .(recommended)

B : Hot water outlet, connect the outlet to the hot water services.

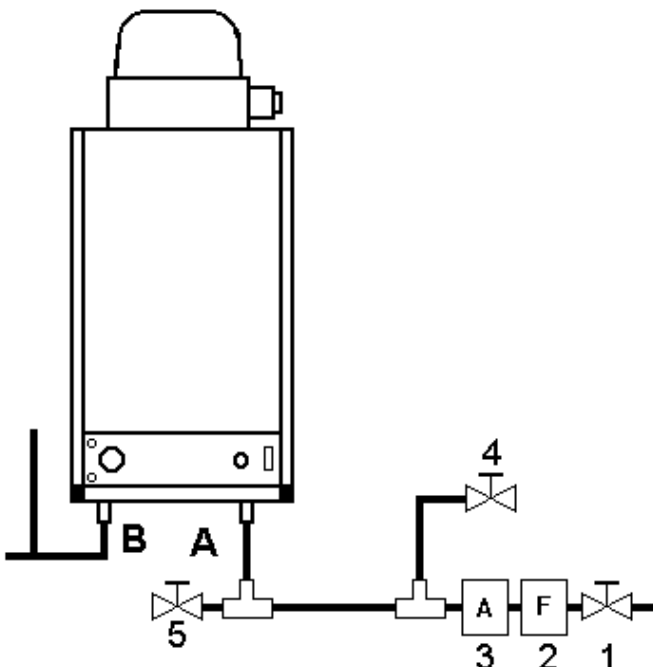


ILLUSTRATION 16a

ATI 220 - 300 - 400

A : cold water inlet, install in the following order:

1. Stopcock (recommended).
2. Inline strainer to remove any impurities as : sand, gravel, mud (optional).
3. Softener or purifier, for very hard water (recommended).

B : Hot water outlet, connect the outlet to the hot water services.

C : Common secondary return and drain connection.

4. Secondary return pump
The secondary return circuit is obligatory.
5. Drain cock.
6. Open vent.

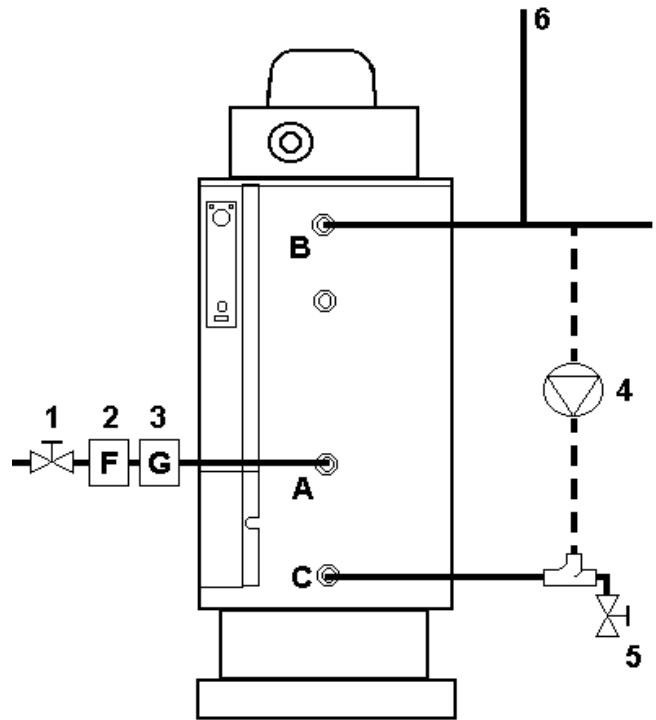


ILLUSTRATION 16b

WATER CONNECTION AND SIZES

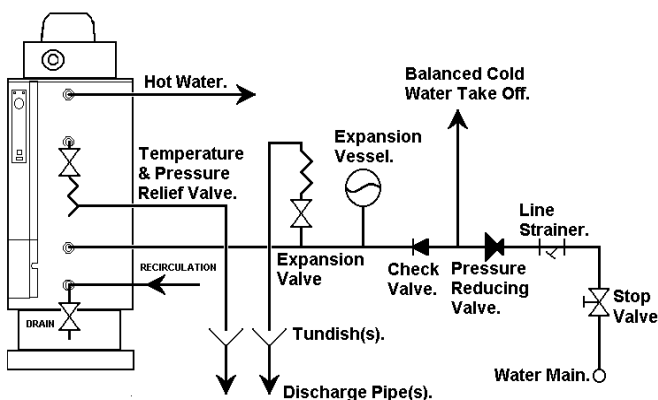
MODEL : ATI SP	80	120	220	300	400
COLD WATER INLET	3/4"	3/4"	1"1/4	1"1/4	1"1/4
RETURN	---	---	1"	1"	1"
DRAIN	---	---	1"	1"	1"
HOT WATER OUTLET	3/4"	3/4"	1"1/4	1"1/4	1"1/4

WARNING : There is a open 1/2" connection (ATI SP 80 & 120) or 1 1/2" connection (ATI SP 220, 300 & 400) located in the side of the unit for the temperature & pressure relief valve for use with an Unvented system.

If the unit is fitted to an open system this connection is to be plugged.

2.5b UNVENTED HOT WATER SYSTEMS

Where the units are to be installed using a Unvented system kit for mains water connection, the position of the controls in the following diagram must be adhered to.



The following Unvented kits are available at extra cost.

Unvented Pack A/22 suitable for ATI 80 & 120 consisting of :-

1 x 22mm Pressure reducing valve (pre-set 3.5 bar) with integral coaxial strainer and balanced cold water take off connection (blanked).

1 x 22mm Expansion / check valve combination assembly with integral expansion vessel connection (blanked) setting 6 bar.

1 x 12 Litre expansion vessel - pre-charge 3.5 bar. (Maximum system capacity 150 litre including water heater.)

1 x 12/18 Litre vessel mounting bracket.

1 x 3/4" BSP Aluminium braid reinforced hose for connection between expansion vessel and expansion / check valve.

1 x 22mm x 1" BSP Tundish - Straight.

1 x 1/2" Temperature & Pressure Relief Valve (Fitted when ordered with unit) setting 7 bar 95°C.

Unvented Pack C suitable for ATI 220 consisting of :-

1 x 1" BSP Union pressure reducing valve (pre-set 3.5 bar) with integral coaxial strainer.

1 x 1" BSP Check valve core assembly with integral balanced cold water take off connection (blanked), expansion vessel connection (blanked) and expansion valve connection.

1 x 3/4" Expansion valve - setting 6 bar.

1 x 25 Litre expansion vessel - pre-charged 3.5 bar. (Maximum system capacity 315 litre including water heater.)

1 x 25 Litre vessel mounting bracket.

1 x 3/4" BSP Aluminium braid reinforced hose for connection between expansion vessel and check valve core assembly.

1 x 22mm x 1" BSP Tundish - Straight.

1 x 1" Temperature & Pressure Relief Valve (Fitted when ordered with unit.) setting 7 bar 95°C.

Unvented Pack D suitable for ATI 300 & 400 consisting of :-

1 x 1" BSP Union pressure reducing valve (pre-set 3.5 bar) with integral coaxial strainer.

1 x 1" BSP Check valve core assembly with integral balanced cold water take off connection (blanked), expansion vessel connection (blanked) and expansion valve connection.

1 x 3/4" Expansion valve - setting 6 bar.

1 x 40 Litre expansion vessel, complete with integral foot supports for vertical floor mounting - pre-charged 3.5 bar. (Maximum system capacity 500 litre including water heater.)

1 x 1" Temperature & Pressure Relief Valve (Fitted when ordered with unit.) setting 7 bar 95°C.

NOTE :- Larger expansion vessel are available for systems with capacities greater than the ones provided.

2.6 GAS CONNECTIONS AND REGULATIONS

Connect the gas supply line including an isolating valve and union joint for maintenance purposes. The manual isolating valve should be in an easily accessible position. Check that the gas line is sound and ensure that it has been installed in accordance with current regulations relating to gas installations (see ref. at point 2.1).

MODEL :	80	120	220	300	400
GAS CONNECTION	3/8"	3/8"	1/2"	1/2"	1/2"

NOTE : for systems operating with LPG gas it is essential to fit a "first stage" pressure reducer in the vicinity of the cylinder in order to reduce pressure to 1.5 bar.

GAS PRESSURE

The appliances are calibrated at works for the gas which they are intended. (gas type and pressure indicated on the data label)

MODEL		80	120	220	300	400
-------	--	----	-----	-----	-----	-----

Natural gas 20 mbar

gas pressure at injector	mbar	11.5	11.5	10.0	12.2	12.2
	mm H2O	117	117	102	124	124
injector diam.	mm	2.00	2.00	1.25	1.25	1.25

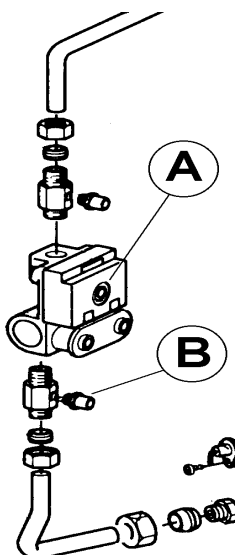
LPG gas 28-30/37 mbar

gas pressure at injector	mbar	28.2	28.2	28.2	28.4	28.4
	mm H2O	287	287	287	289	289
injector diam.	mm	1.15	1.15	0.72	0.75	0.75

If the gas pressures at the burner (injector) does not correspond to the values shown above, commission the unit as follows:

ATI SP 80 & 120

To check the pressure at the burner, connect a pressure gauge to the downstream pressure test point B after having slackened the internal screw by a few turns.



Commissioning of the appliance supplied with Natural Gas G20

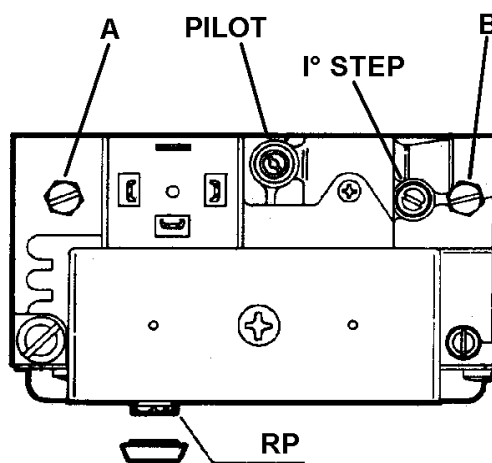
With the water heater operating adjust with a screwdriver the pressure governor screw, below the pressure regulator plug A on the gas valve head until the nominal value is obtained. Switch off the water heater and restart for further check.

Commissioning of the appliance supplied with LPG Gas G30/31

In the case of LPG the gas valve pressure governor is not used (this is done by unscrewing gas valve pressure governor adjustment screw, under plug A to the end of its travel). The pressure at the burner has to be adjusted by a governor placed before the water heater in the gas line. Switch off the water heater and restart for further check.

ATI SP 220, 300 & 400

To check the pressure at the burner, connect a pressure gauge to the downstream pressure test point B of the gas valve, after having removed the screw which act as a plug.



Picture 18

Commissioning of the appliance supplied with Natural Gas G20

With the water heater operating adjust with a screwdriver the pressure governor screw RP, on the side of the gas valve, until the nominal value is obtained.

Switch off the water heater and restart after approximately one minute, checking that when it lights up, the slow ignition pressure is about 3 to 4 mbar. If necessary, adjust this value by using the screw I° STEP and repeat the ignition for further check.

Commissioning of the appliance supplied with LPG Gas G30/31

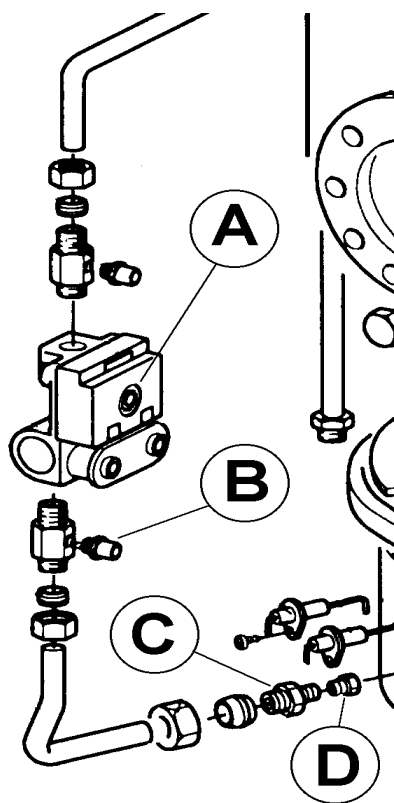
In the case of LPG the gas valve pressure governor is not used (this is done by unscrewing gas valve pressure governor adjustment screw, RP to the end of its travel). The pressure at the burner has to be adjusted by a governor placed before the water heater in the gas line.

Switch off the water heater and restart after approximately one minute, checking that when it lights up, the slow ignition pressure is about 7 to 8 mbar. If necessary, adjust this value by using the screw I° STEP and repeat the ignition for further check.

ATTENTION: in case of gas valve replacement, ensure that the pilot outlet is gas sound locked with the appropriate plug and O-ring.

IMPORTANT

- After the unit has been re-commissioned, check :-
1. The electrical isolation of the gas valve connector.
 2. All gas lines should be re-checked for soundness, using leak detector solution.
 3. All pressure test points are checked for soundness.
 4. The correct operation of all control and safety devices.



Changeover from natural gas to LPG gas

1. Check that the diameter of the injector contained in the kit is 1.15 mm for mod. 80-120.
2. Close the gas isolating cock and isolate the electrical supply.
3. Exclude the pressure governor placing the screw below the plug **A** of picture 17 to the end of its travel.
4. Slacken the nozzle holder **C** with a suitable hexagonal spanner.
5. Undo the nozzle **D** and replace it with the one in the kit. Fully tighten in order to ensure gas soundness.
6. Start up the heater and check that the pressure is 30 mbar (utilise the pressure take-off **B** on the gas outlet of the valve)
7. Stick the label on the valve, in order to indicate that it has been set for LPG gas.

IMPORTANT

For operating with LPG gas is essential to fit a “first stage” pressure reducer in the vicinity of the cylinder in order to reduce pressure to 1.5 bar. A “second stage” pressure governor of adequate capacity should be installed in the vicinity of each heater in order to reduce the supply pressure to 30 mbar.

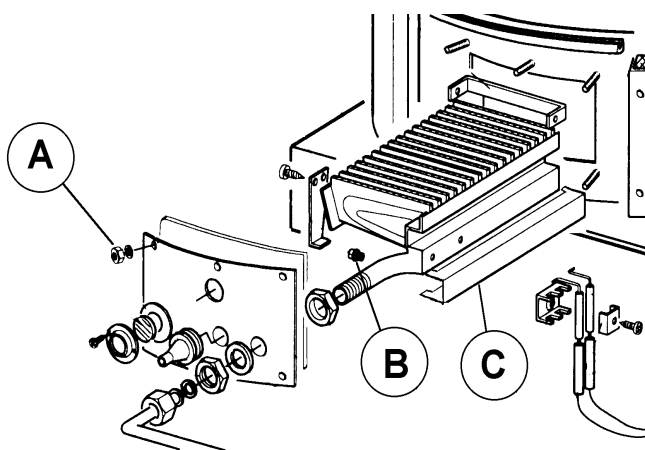
Changeover from LPG gas to natural gas

1. Check that the diameter of the injector contained in the kit is 2 mm
2. Close the gas isolating cock and isolate the electrical supply.
3. Set the pressure governor by adjusting the screw below the plug **A**.

1. Slacken the nozzle holder **C** with a suitable hexagonal spanner.
2. Undo the nozzle **D** and replace it with the one in the kit. Fully tighten in order to ensure gas soundness.
3. Start up the heater and check that the pressure is 30 mbar (utilise the pressure take-off **B** on the gas outlet of the valve)
4. Stick the label on the valve, in order to indicate that it has been set for LPG gas.

Changeover from natural gas to LPG gas

1. Check that the diameter of the injectors contained in the kit is 0.72 mm for mod. 220, 0,75 mm for mod. 300-400.
2. Close the gas isolating cock and isolate the electrical supply.
3. Extract the burner from its housing slackening the six support fixing nuts **A**, after having detached the gas supply pipe and the electrode cables.
4. Undo the nozzles **B** and replace them with ones contained in the kit. Fully tighten in order to ensure gas soundness.
5. Insert the air regulator **C** in the burner collector.
6. Exclude the pressure governor placing the screw RP of picture 18 to the end of its travel.
7. Start up the heater and check that the pressure is 30 mbar (utilise the pressure take-off **B** of picture 18)
8. Stick the label on the valve, on the screw RP in order to seal it, to indicate that it has been set for LPG gas.



IMPORTANT

For operating with LPG gas is essential to fit a “first stage” pressure reducer in the vicinity of the cylinder in order to reduce pressure to 1.5 bar. A “second stage” pressure governor of adequate capacity should be installed in the vicinity of each heater in order to reduce the supply pressure to 30 mbar.

Changeover from LPG gas to natural gas

1. Check that the diameter of the injector contained in the kit is 1.25 mm
2. Check the gas isolating cock and isolate the electrical supply.
3. Extract the burner from its housing slackening the six support fixing nuts **A**, after having detached the gas supply pipe and the electrode cables.
4. Undo the nozzles **B** and replace them with ones contained in the kit. Fully tighten in order to ensure gas soundness.
5. Remove the air regulator **C** in the burner collector.
6. Set the pressure governor by mean the screw RP of picture 18.
7. Start up the heater and check that the pressure is 10 mbar for mod. 220, 12,2 mbar for mod. 300-400 (utilise the pressure take-off **B** of picture 18)
8. Stick the label on the valve, on the screw RP in order to seal it, to indicate that it has been set for natural gas.

Test for gas soundness and inspect all joints with leak detection fluid.

2.8 ELECTRICAL CONNECTIONS

The appliance has to be connected electrically to a 220V single-phase supply mains with an efficient earth.

A double pole switch should be fitted in the vicinity of the equipment to allow for isolation of mains supply. Connect the equipment supply cable, taking care to comply with the CEI Electrical standards.

THE MANUFACTURER CANNOT BE HELD

ELECTRICAL CHARACTERISTICS	ATI 80-120	ATI 220-300-400
Voltage Supply	220-240 v 50 Hz	220-240 v 50 Hz
Power consumption of the gas valve	10 watts	15 watts
Power consumption of the fan motor	16 watts	47 watts
Total power consumption of the appliance	26 watts	62 watts

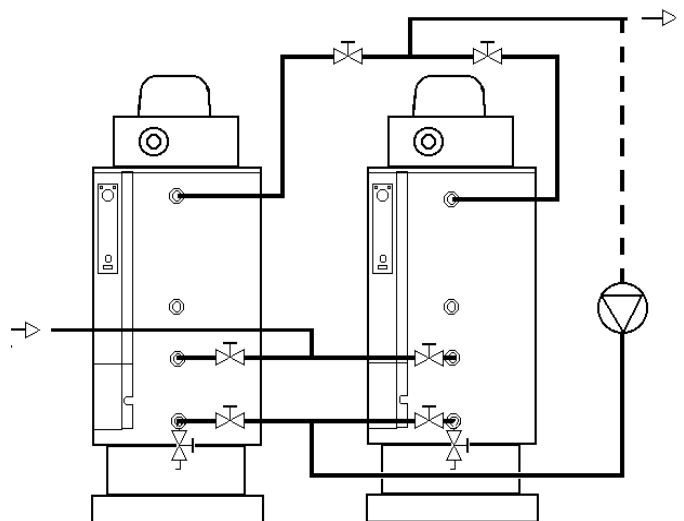
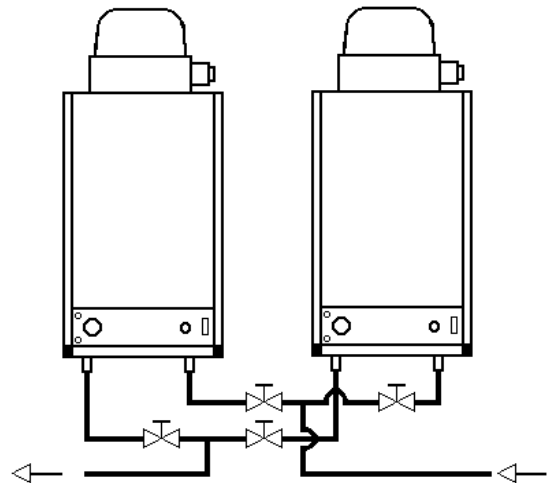
RESPONSIBLE FOR ANY DAMAGES OR INJURY CAUSED BY FAILURE TO EARTH THE INSTALLATION TO THE REQUIRED STANDARD.

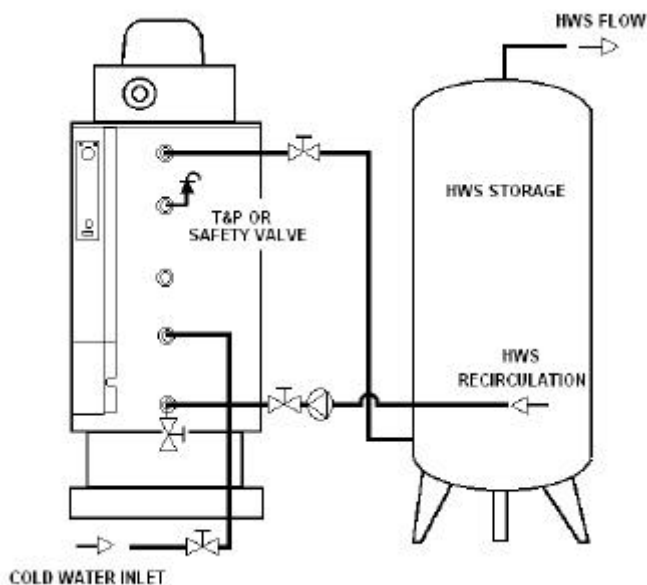
IMPORTANT : when electrical connection is carried out, make sure the Live and Neutral supply to the unit is correct. If not the polarity will be wrong and the appliance will not operate.

CONNECTION OF SEVERAL WATER HEATERS

When several water heaters have to be connected together it is important to connect them in such a way that they can operate individually or together.

This is possible by means of the use of gate valves, closure or opening of which allows use according to needs (high or low season, peak periods, repair of equipment, etc...). For example, we suggest these types of layouts:





2.10 STARTING THE WATER-HEATER

Before starting the water-heater ensure that:

- the appliance is set to function with the correct gas type.
- the current standard and provisions relating to the installation of these appliances, particularly with regard to correct connection of the combustion product flue line and gas supply line pipe have been observed.
- the electrical supply is on and earthing has been carried out in accordance with current regulations.
- the gas isolating cocks on the meter and in the vicinity of the heater are open.
- the water heater is full of water.

2.11 FAULT FINDING

The control device locks out without ignition.

- the flame detection circuit of the control is faulty and the control self-check prevents the continuation of the cycle
- the flame detection electrode has a loose earth connection

At the end of the pre-purge cycle the ignition electrode does not spark and the control goes to lock-out.

- the ignition transformer inside the control is faulty
- the ignition electrode connection at the terminals of the appliance is broken

At the end of the pre-purge cycle the ignition electrode provides a spark, but the flame does not form and the control goes to lock-out.

- gas supply is off or air is present inside the line
- the gas valve does not open because the solenoids are faulty or their electrical connection are broken
- only for mod. 80 and 120: the safety limit thermostat has tripped

At the end of the pre-purge cycle the ignition electrode provides a spark, but the flame forms but the control goes to lock-out.

- the flame is not establishing correctly owing to lack of gas pressure
- the detection electrode is not correctly positioned and is not in contact with the flame
- the electrical connection of the detection electrode is broken
- Live and Neutral connections may be reversed.

The control goes into lock-out during normal functioning.

- the gas supply has been interrupted, even temporarily: the control box has not detected the presence of flame and it has gone to lock-out
- one of the cases in preceding points has occurred during an intermittent functioning cycle
- Live and Neutral connections may be reversed.

The heater functions for brief intermittent periods, even though the thermostat is functioning correctly and is in the heat requirement position.

- the adjustable control thermostat is defective and is not detecting the correct temperature
- the pressure switch stops the burner because the flow from the fan is not correct owing to an obstruction in the flue system or excessive length
- Live and Neutral connections may be reversed.

The control box is not in lock-out but the cycle remain in pre-purge.

- the pressure switch does not allow for continuation of the cycle because the flue system is obstructed
- the pressure switch does not allow for continuation of the cycle because the fan is not functioning correctly or does not exert sufficient pressure
- the pressure switch does not allow functioning because it is faulty or its electrical connections are broken
- the pressure switch does not allow functioning because the pressure line is obstructed or the silicon tube is detached or broken

The control box is not in lock-out but the cycle doesn't start.

- during the initial check of the control the pressure switch contacts have been found in the closed position (because they are stuck or owing to incorrect setting of the pressure switch) and accordingly do not enable the continuation of the cycle.

For safety and warranty validity original components and spare parts should be used for replacement

3 - USER INSTRUCTIONS

3.1 RECOMMENDATIONS FOR THE USER

- The following instructions book is an integral and essential part of the appliance, and it has to be kept with care near the appliance, for any further consultation.
- The appliance, as it is turned on, has to be checked from the nearest Authorised Assistance Centre.
- Installation has to be made by professional qualified people, which are responsible in the respect of the safety regulations in force.
- An incorrect installation, caused by not observing of the manufacturer's instructions can cause damages to people, animals or things for which the manufacturer can not be considered responsible.
- The appliance has been manufactured for hot water production: any other else use of it has to be considered dangerous and not suitable.
- The appliance has not to be installed in damp rooms, it has to be protected from water splashes or other liquids, to avoid anomalies to electric and thermal devices.
- Packaging parts (i.e. plastic bags, polystyrene, wood, clips, nails, etc.) can be harmful to children and should be carefully disposed of immediately.
- Read carefully the instructions and the advise contained in this booklet, concerning safety, installation, use and maintenance.
- If the appliance is sold or transferred to a new owner, make sure that this booklet stays with the appliance, so that the new owner and installer can consult it.
- Do not place anything upon the appliance.
- To avoid damages caused by low temperatures, if the appliance has to be left unused for a long period in a non-heated room, it is recommended the unit is emptied completely.
- The manufacturer is not responsible for faults, break-downs or for water leakage from the plant caused by low temperature.

3.2 STARTING THE APPLIANCE

1. set the switch to the On position "I"
2. set the control thermostat indicator to the desired temperature
3. check that the lock-out light is off. If not this means that the control box is in a lock-out mode. In this case re-set the control box by pushing the reset button. The lock-out light will go out.

The ignition cycle starts. The pressure drop exerted by the flue fan operation (in correct combustion circuit conditions) closes the differential pressure switch contacts and the control box starts the pre-purge cycle (pre-purge duration: 30 sec.). At the end of the pre-purge cycle the gas valve and the electric spark operates to ignite the burner. These are controlled simultaneously.

When the burner ignites the flame must be detected by the appropriate detection electrode within the safety time (10 sec.), otherwise the control box will go to lock-out which is indicated by the red lock-out light. This can occur easily in a new installation where air is still present in the gas line.

In that case wait for at least a minute, press the reset push-button to reset the control box and a new ignition cycle will start. Repeat the operation until the residual air has been bled and ignition is regular.

IMPORTANT: apart the above case, the turning on of the red lock-out light generally indicates an operating faults or defect. In that case we recommend that you call the nearest Authorised Assistance Centre.

After the burner is ignited, indicated by the green light, the water heating phase begins. The burner will operate until the water temperature set on the control thermostat is reached.

To check the functioning of the thermostat, rotate the knob to the lowest value and check that the burner stops. Repeat the start up to check that the ignition of the burner is normal.

3.3 SWITCHING OFF

To switch off the water heater for a short period :

- rotate the control thermostat knob to the minimum value and press the On/Off switch to the "0" position.

To switch off the water heater for a lengthy period :

- rotate the control thermostat knob to the minimum value
- press the On/Off switch to the "0" position.
- switch off the electrical supply by the main isolating switch
- close the gas isolating valve

3.4 MAINTENANCE

To ensure the safety of the appliance and to extend its working life an annual check/cleaning by an Authorised Assistance Centre is recommended, with consideration to the following:

- magnesium anode replacement
- internal inspection of the water tank, by mean the proper inspection and cleaning flange, and cleaning of possible calcium deposits on the bottom
- checking of the gas soundness.

WARNING :-

The unit should have an internal inspection of the water tank and cleaned at least once a year or the Warranty will be invalidated. However depending on the local water conditions and the usage of the water heater additional inspection may be required. We would recommend that within the first six months of a new installation an internal inspection is undertaken to determine the frequency of future inspections.

WARRANTY

NORMAL STREBEL WARRANTY APPLIES

The warranty is valid provided that the installation standards and everything contained in the booklet are complied with.

ATI	80	120	220	300	400
CAPACITY					
Litre	75	115	220	300	400
NOMINAL INPUT					
Btu/h	17,060	17,060	97,242	105,772	105,772
kW	5.0	5.0	28.5	31.0	31.0
NOMINAL OUTPUT					
Btu/h	16,036	16,036	88,029	95,536	95,536
kW	4.7	4.7	25.8	28.0	28.0
COMBUSTION EFFICIENCY					
	94%	94%	92%	92%	92%
10 MINUTE OUTPUT AT 54° C (Storage Water At 60°C - Cold Water At 10°C)					
Lt/10 mins	91	140	305	401	515
CONTINUOUS OUTPUT WITH A 44° C TEMPERATURE DIFFERENCE					
Lt/h	91	91	502	568	568
TIME TO RECOVER WITH A 44° C TEMPERATURE DIFFERENCE					
min	44	71	26	34	43

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