

## Instructions LPG Conversion Kit E-Series

### Introduction

These conversion instructions are to be used together with the installation instructions for the standard unit. The subjects mentioned in these instructions deviates from the standard installation manual. This means that these subjects in the standard manual are not relevant.

These instructions belongs to the LPG Conversion Kit and describes the following subjects:

- LPG installation in general
- Converting a natural gas boiler to a LPG boiler
- Adjustment specifications



**Installing, converting, taking into operation and adjusting should be done by a registered installer.**

### Scope of the delivery:

- Restriction gas supply + gasket (black rubber)
- Gasket gas line-gas valve (yellow rubber)
- EE-Prom key with programmed parameters
- Boiler type plate LPG
- Instructions LPG Conversion Kit

### LPG installation in general

The LPG installation has to comply with:

- GB: - British Standard 813 and Domestic Gas Installations
- IRL: - Irish Standard 813 and Domestic Gas Installations



**Installing of a LPG installation should only be done by a registered LPG installer who is known by the gas supplier.**

The tank must be provided with a high pressure regulator with a minimal capacity of 24 kg/h to reduce the tank pressure from 5 to 1,5 bar. The 1,5 bar high pressure gas line should have a minimal diameter of 15mm. In the high pressure gas line a house pressure regulator must be installed.

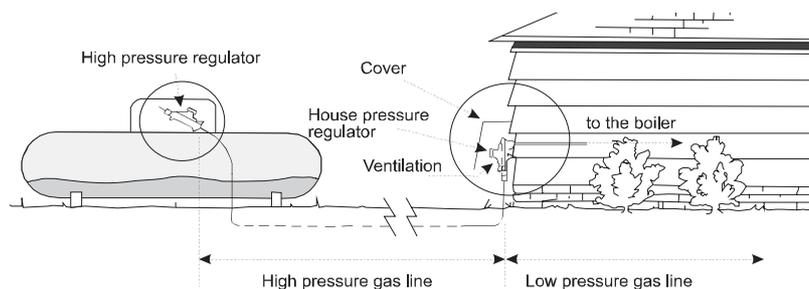


figure 1

## House pressure regulator



**Each gas appliance which is connected to the propane installation must be provided with its own house pressure regulator. The house pressure regulator is a third party delivery.**

De house pressure regulator must have a minimal capacity of 10 kg/h / 30 mbar and a CE certification.

ATAG advices to install the house pressure regulator as close as possible to the boiler. When placing the regulator in house a discharge drain of  $\varnothing 6\text{mm}$  must be installed. The discharge drain must be directed outdoor . In case of a discharge the gasses will go outside.

In case of placing the regulator outside the regulator should be protected against influences of the weather. The (de-)aeration must be positioned downwards (see figure 1).

ATAG advices to install measure points on all gas line parts to have the possibility to check for pressure loss.



**Pre-pressure must be adjusted to 30 mbar by means of the house pressure regulator. The maximal permitted closing pressure may be 5 mbar higher than the maximal pre-pressure.**

A too high closing pressure in de low pressure gas line can be caused by a high resistance or jam in this gas line. When the closing pressure keeps increasing the valve in the regulator is not closing well. In this case the regulator should be replaced.

## Dimensioning of the low pressure gas line

The gas line from the house pressure regulator to the boiler must have the dimensions according table 1.

boiler type	maximal length gas line from house pressure regulator to boiler	
	E22S / E22C	E26S / E26C E32S / E32C
diameter gas line	m	m
$\varnothing 15 \text{ mm}$	3	-
$\varnothing 22 \text{ mm}$	30	18
$\varnothing 28 \text{ mm}$	-	30

table 1

## De-aerating the LPG tank



**When placing a new or revised LPG tank the tank must always be de-aerated.**

ATAG advices to inform the gas supplier that a central heating boiler is connected to the LPG tank. For the boiler it is absolutely necessary that the tank is free of air. When not the boiler will give ignition problems and will not function.

ATAG advices to measure the content of  $\text{O}_2$ . This value should be lower than 1,3%. Contact the gas supplier in case of doubt.

# Converting a natural gas boiler to LPG boiler

PARA	Waarde Wert Value Valore Değer
02	
31 (Solo)	
01*	
05*	
06*	
07*	
14*	

\* Write these values here in case PARA 02 is set to 0 (Code 123, see installation manual)

Check before converting if the conversion set is suitable for the boiler. The type mentioned on the package sticker must be the same as the type mentioned on the type plate on the boiler.

**Before converting write down the parameters in the table beside here. These can be specific adjustments for the installation (see installation manual).**

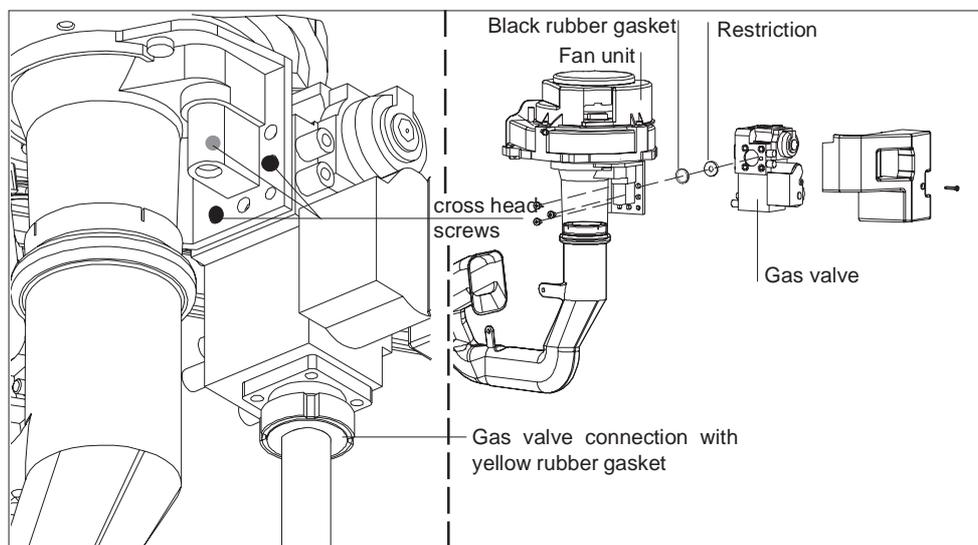
Converting the boiler to LPG should be done in the following steps:

## Placing the restriction

The restriction has a mark on the edge. This mark indicates the diameter of the restriction. Check this mark with the diameter mentioned in table 2.

- Switch off the programs CH, DHW and pump and switch off the power supply;
- Close the gas valve;
- Take off the black cover of the gas valve and disconnect the electrical wiring from the gas valve;
- Unscrew the connection of the gasline to the gas valve and take out the yellow gasket;
- Unscrew the 3 cross head screws of the venturi and the gas valve and take out the gas valve (see figure 2);
- Take the black gasket from the gas valve and replace it by a new one;
- Position the restriction on the new black rubber gasket;
- Refit the gas valve against the fan unit and take note that the rubber gasket and restriction remain in its place;
- Refit the removed parts in reverse order (with the exception of the black gas valve cover) and use a new yellow rubber gasket in the gas valve connection;

  
Following maintenance or other activities; always check the installation of all parts through which gas flows (using leak-search spray).



Placing restriction plate

figure 2

## Replacing the EE-Prom key with LPG parameters on the MCBA PCB

The EE-Prom key must be replaced as follows:

- Turn the Control Tower to the left;
- Remove the ignition cable from the back side of the MCBA;
- Take away the black plastic backside of the Control Tower;
- Remove the EE-Prom key and place the new EE-Prom key from the kit on its place (see figure 3);
- Replace the backside of the Control Tower;
- Insert the ignition cable to the back side of the MCBA;
- Turn back the Control Tower.

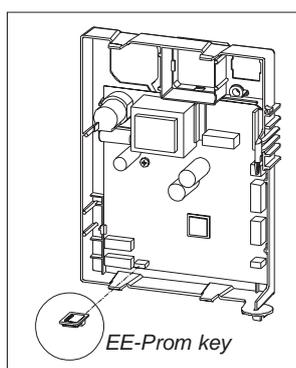


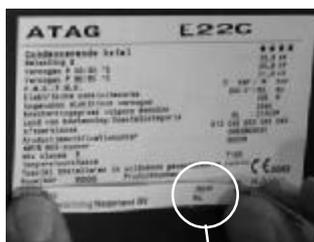
figure 3

## Type plate

Select the correct type plate sticker according to the land code (UK = United Kingdom, IRL = Ireland)

Stick on this sticker on the type plate of the boiler.

The conversion of the boiler is now completed.



Type plate

Land code

## Putting into operation and adjusting the boiler

**d--A**

- Switch on the power supply. The text **d--A** will now show on the display which means that the LPG data in the display can be copied to the boiler control;
- Press the "Store" button for 2 sec. to activate the copy function. The LPG parameters will now be copied to the boiler control;

**Good**

- The display will show **Good**;

Example:

**25.1P**



- **Press the reset button once and check the boiler type indication extended with a "P" on the display during starting up. This indication should be similar as shown in table 2;**

- **Adjust, when necessary, the parameters which are written on previous page again;**

- Put the boiler into operation.

The boiler is ready to be adjusted.

Check the CO<sub>2</sub> adjustment and adjust, when necessary, according to the specifications in table 2 and according to the procedure described in the installation manual of the boiler. Finally refit the black cover over the gas valve.

### CO<sub>2</sub> adjustments

Use only LPG. Specifications can be obtained from your gas supplier.

To get a better indication of the content of the tank and the filling frequency see the following example:

1 ltr liquid propane	= 0,264 m <sup>3</sup> propane gas
1 kg propane gas	= 0,510 m <sup>3</sup> propane gas
1 m <sup>3</sup> propane gas	= 99,2 MJ (H <sub>s</sub> / at 1013 mbar and 15°C)
	= 89,4 MJ (H <sub>i</sub> / at 1013 mbar and 15°C)

This example shows a 38 on continuous load at 60% of its full load.

60 % of 38 kW = 22,8 kW continuous load.

$22,8 \text{ kJ/s} : 99,2 \text{ MJ/m}^3 = 0,22 \cdot 10^{-3} \text{ m}^3/\text{s} = 0,22 \cdot 10^{-3} \times 3600 = 0,814 \text{ m}^3/\text{h}$  (propane gas)

Gas consumption at about 2000 running hours per year:

$2000 \times 0,814 = 1628 \text{ m}^3 \text{ propane gas/year}$

A 3000 ltr tank can contain:

$3000 \times 0,264 = 792 \text{ m}^3 \text{ propane gas.}$

Total number of fillings per year =  $1628 : 792 = 2$  fillings a year

**123**

**INFO**

After entering the code **123** you can find in chapter **INFO** under Step 21, 22 and 23 resp. the total gas consumption, gas consumption of CH and gas consumption of DHW in in GJ (..x 11 = ..m<sup>3</sup>).

Boiler type		E22S	E22C	E26S	E26C	E32S	E32C
CO <sub>2</sub>	%	10,5	10,5	10,5	10,5	10,5	10,5
O <sub>2</sub>	%	5,1	5,1	5,1	5,1	5,1	5,1
Restriction diameter	mm	4,15	4,15	5,2	5,2	5,2	5,2
Display indication		22.P	22.tP	26.P	26.tP	32.P	32.tP
Pre pressure	mbar	see type plate propane					
Load (H <sub>i</sub> )	kW	19,8	19.8/22.5	23.4/31.5	23.4/31.5	28,8	28,8/34,2
Gas consumption	kg/h	1,55	1,55	1,84	1,84	2,25	2,25
Gas consumption	m <sup>3</sup> /h	0,79	0,79	0,94	0,94	1,15	1,15
Modulation range(80/60°C)	kW	9.8 - 19.3	9.8 - 19.3	15.6 - 22.9	15.6 - 22.9	15.6 - 28.2	15.6 - 28.2
Modulation range(50/30°C)	kW	11.0 - 21.0	11.0 - 21.0	17.5 - 24.8	17.5 - 24.8	17.5 - 30.6	17.5 - 30.6

table 2