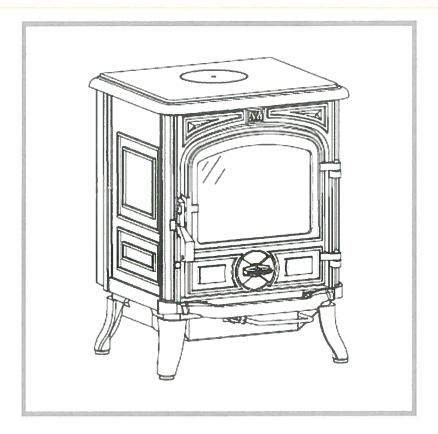
BELFORT

Oil fired stove

Réf 174 05 05

Norme EN1

CAN/CSA approved / AINS/UL approved



Description of the appliance
Installation instructions
Operating instructions
Spare parts
Warranty certificate

Document nº979-11 ~ 31/05/2006



Technical manual

to be saved

by the user

for future reference

FRANCO BELGE

"La chaleur en toute confiance"

127^{ième} RIF,15 BE 5660 MARIEMBOURG

Subject to modifications.

FRANCO BELGE congratulates you on your choice.

FRANCO BELGE, guarantees the quality of its appliances and is committed to meet its customers' needs.

FRANCO BELGE, which can boast a 80-year experience in the industry of heating devices, uses state-of-the-art technologies

to design and manufacture its whole range of products.

This document contains instructions on how to install your appliance and make full use of its functions, both for your comfort and safety.

CONTENTS Package p. 3 Description p. 3 Optional equipment p. 3 Operating principle. p. 4 Specifications p. 3 Installation instructions p. 5 Position of the unit p. 5 External tank p. 7 Levelling p. 7 Mounting the levelling feet p. 5 Pre-utilisation check p. 7 Oil flow adjustment p. 8 Top flue outlet p. 6 Rear flue outlet. p. 6 Chimney draught. p. 8 Chimney connector p. 6 Door closing pressure p. 8 Connection to a L.VENT chimney . . . p. 7 Maintenance of the Chimney p. 8 Fuel....p. 9 Maintenance of the stove p. 10 Lighting procedure p. 9 Recommendation p. 10 Operating procedure. p. 9 Trouble shooting p. 11 Shutting down p. 9

1. Description of the unit

1.1. Package

• 1 package. The stove is supplied completely assembled except the four levelling feet that are placed on the burner.

1.2. Optional equipment

Glow-plug ignitor

1.3. Specifications

Model	174 05 05
Nominal heat output kW	5
	18.000
Oil consumption at :	
- maximum speed litre/h	0,58
US gal/hr	0,16
- minimum speed litre/h	0,17
US gal/hr	0,045
Chimney draught required at :	Í
- maximum speed Pa	15
in.w.g.	0,06
- minimum speed Pa	8
in.w.g.	0,032
Weightkg	67,6
	149

1.4. Description

Flued oil stove with vaporizing burner (Norm EN 1).

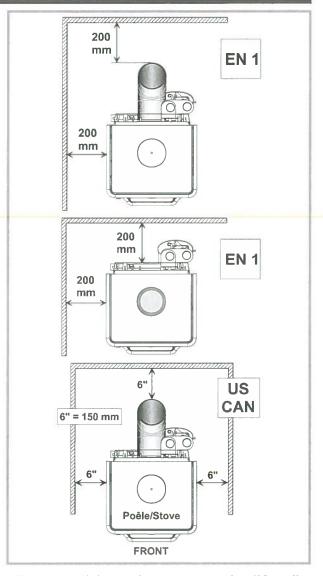


Figure 1 - Minimum clearances to combustible walls

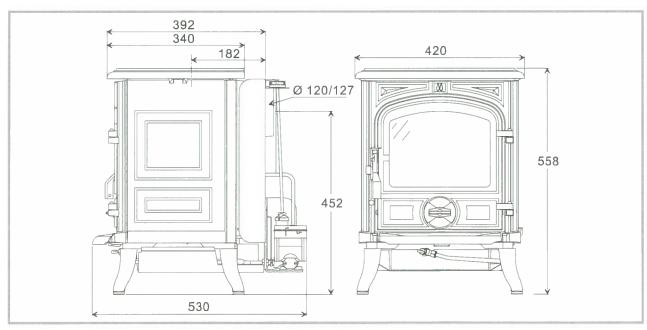


Figure 2 - Dimensions in mm

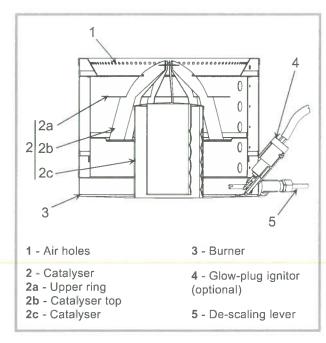


Figure 3 - Burner

Figure 4 - Regulator

1.5. Operating principle

Furnace oil is fed to the burner floor (fig. 3) where is it ignited by means of a firestarter (or the Glow-plug ignitor rep. 4). The heat produced by this flame brings the burner temperature to the required level to vaporize the fuel. Oil will only burn as a vapour not a liquid.

Room combustion air enters the burner through the air inlet holes.

In the center of the burner is the catalyser (rep. 2, fig. 3) which aids in vaporizing the fuel. When the stove is operation, the catalyser glows red. The stove should not be used with out both the catalyser (rep. 2c, fig. 3), catalyser top (rep. 2b) and ring (rep. 2a).

A de-scaling lever (rep. 5, fig.3) can be pushed and pulled in and out as well as turning slightly at the same time to keep the inlet pipe clear of carbon buildup.

The stove float regulator contains a filter to trap impurities.

The stove float regulator (fig. 4) contains a filter (rep. E) to trap impurities.

A safety lever (rep. D) controls fuel flow. Oil can only enter the float chamber when the safety lever is depressed.

Oil temperature variations will affect the oil flow into the float chamber. A float in the chamber raises the fuel level available to the burner.

The float regulator is also controlled by a control knob which turns from "0" (off) to "6" (high setting).

A draught regulator (rep. 1, fig. 14, p. 8) ensures a constant air intake to the burner regardless of external factors.

2. Installation instructions

SAFETY NOTICE: Read carefully all instructions before starting the installation. If the stove is not properly installed, a house fire may result. For your safety, follow the installation directions. Contact local building or fire officials about restrictions and installation inspection in your area.

USA / CANADA: The installation of this stove must comply with state and local requirements and the standard CSA B139.

A remote acting fire valve must be fitted on the oil supply line.

Flexible oil lines must not be used to make connections between oil supply line and oil regulator valve.

2.1. Position of the unit

- The position of the appliance must be chosen very carefully in order to obtain the best possible results for heat distribution.
- Position the unit to comply with the minimum clearances to combustible material. Minimum clearances are shown from the vertical portion of the chimney connector. Check that no overhead cross members in the ceiling will be cut. Reposition unit if necessary, being careful not to move closer than the minimum clearances.
- Outside air: For the oil stove to function properly, an adequate supply of combustion air is required.

2.2. Chimney

- Ensure that the flue has sufficient draught (refer to technical details).
- Minimum flue diameter, 10 cm (4" I.D).
- The chimney must be at least 4.5 m (15 ft high).
- The flue must not be shared with any other appliance.
- Downdraughts caused by obstacles close to the chimney top may sometimes be prevented by fitting an anti-downdraught cap to the top of the chimney.
- The chimney must have a constant cross section. Too large a flue could affect the chimney draught.
- The chimney must be soundly constructed, in order to prevent cold air infiltration.
- The flue must be well insulated, water and air tight. A chimney with a cold internal surface can prevent a good chimney draught and condensation will occur.
- The flue must be swept at least once a year.

2.3. Mounting the levelling feet

Fit the 4 screws and the 4 caps supplied (on the burner) into each leg of the stove (fig. 9, p.6).

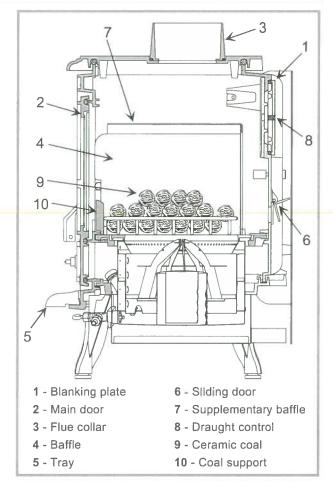


Figure 5 - Description

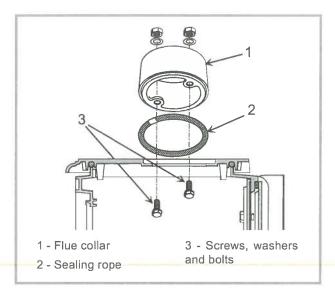


Figure 6 - Top flue outlet

2.4. Top flue outlet

Figure 6

- Open the main door, remove the ceramic coal grate with theirs coal (rep. 9 and 10, fig. 5, p. 5) and remove the internal baffle (rep. 4 and 7, fig. 5, p. 5).
- Fix the sealing rope in the groove on the top and fit the flue spigot using the two bolts and washers supplied, ensuring there is a good seal.
- Replace the internal baffles.

The cut-out of the rear heat shield must not be remove in the case.

2.5. Rear flue outlet

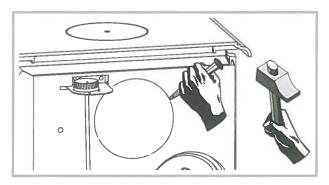
Figure 8

6

- Open the main door, remove the ceramic coal grate with theirs coal (rep. 9 and 10, fig. 5, p. 5) and remove the internal baffle (rep. 4 and 7, fig. 5, p. 5).
- Remove the rear heat shield and the cut-out on it (fig. 7).
- Remove the blanking plate 5 and the clamp 4 from the back and refit them on the top with the 2 screws and washers supplied 7, ensuring there is a good seal 2.
- Set the ceramic rope in the groove and fix the flue collar at rear with 2 bolts and washers supplied.
- Reinstall the internal baffles.
- Replace the rear heat shield.

2.6. Chimney connector

- The appliance must be as close as possible to the chimney. Avoid horizontal flue connection pipes which can dangerously restrain functioning of the appliance.
- The connector pipe must be either 24 ga. black painted or blued steel or 316 grade 20 ga. stainless steel or 1 mm vitreous enamelled steel, with a maximum diameter of 127 mm (5" O.D.). Single wall pipe may be utilized being careful to maintain clearances to any combustible surface.
- Once the stove has been properly installed the chimney draught must be checked with a draught meter.



Installation instructions

Figure 7 - Back panel

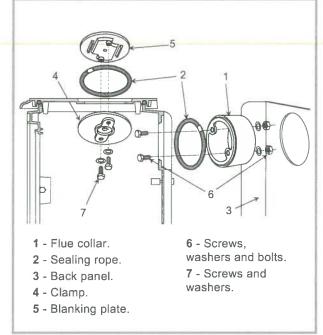


Figure 8 - Rear flue outlet

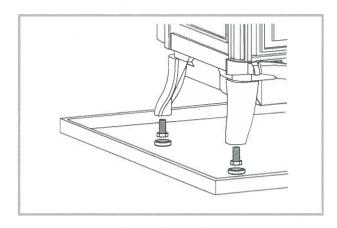


Figure 9 - Levelling

 If the chimney draught is excessive or irregular, a draught stabilizer (barometric damper) must be installed to the connector pipe.

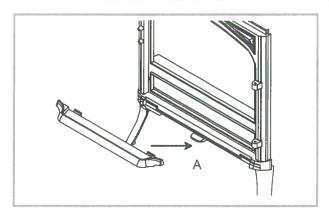


Figure 10 - Fitting the tray

2.7. Connection to a L.VENT chimney

USA / Canada: The 174 10 44 appliance is certified to be connected to a 5" L.VENT chimney.

2.8. External tank

When the stove is connected to an external or remote tank, it must be secured to the floor. The bracket is included (rep. 2, fig. 9)

A barometric fuel tank should not be positioned where it will be in the direct rays of the sun or adjacent to a source of intense heat.

If the tank is more than 8 ft (2,5 m) higher than the stove a pressure reducer must be installed on the oil line (max. working pressure : 300 mbar).

If the tank is lower than the stove a lift pump will have to be utilized.

A clearance of 6 " (15 cm) must be maintained between the external/remote tank and the stove.

2.9. Levelling

It is essential to ensure that the appliance sits level on the floor. Adjust the levelling feet (fig. 9).

Use a spirit level across the burner pot to check the level (fig. 11).

2.10. Pre-utilisation check

Check the condition of the filler seals, that the door closes correctly, that the window is not damaged, that the smoke passages are not obstructed by packaging or removable parts. All removable parts, fuel retainer, baffle, must be correctly installed.

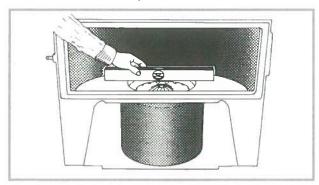


Figure 11 - Burner level check

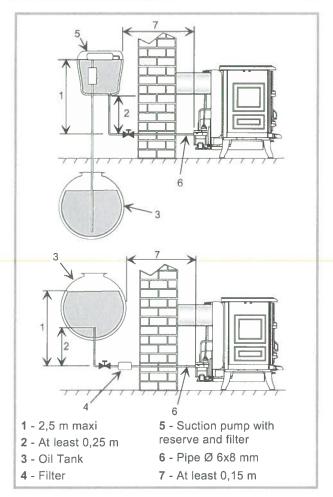


Figure 12 - Gravity or pumped oil supply

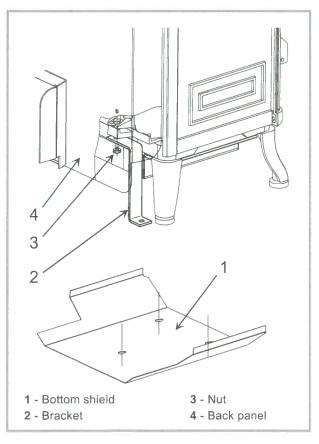


Figure 13 - Bracket

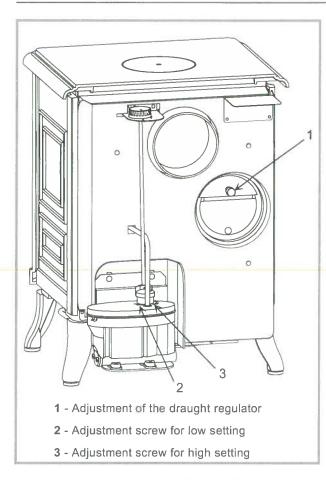


Figure 14 - Adjustment devices

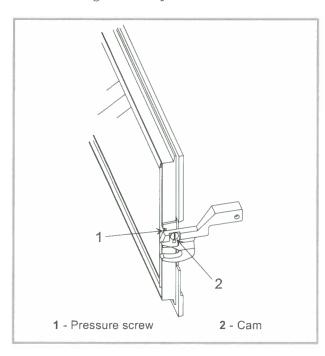


Figure 15 - Door closing pressure

2.11. Oil flow adjustment

The float regulator has been adjusted at the factory and should not need further adjustment. If the burner does not work correctly, check possible causes before readjusting the settings:

- Chimney draught
- Fresh air inlet
- Oil supply.

Low setting (Refer to rep. 2, fig. 14):

- set the regulating knob on "1" and let the burner run for a few minutes. The flame must completely cover the bottom of the burner and the catalyser body must be glowing red hot.
- if the flame is too small, the stove will soot up quickly; increase the flame by turning the setting screw (rep. 2) clockwise.
- if the flame is too high, reduce the flame by turning the setting screw (rep. 2) counter clockwise.

High setting (Refer to rep. 3, fig. 14):

- set the regulating knob on "6" and let the burner run for a few minutes. The flame must be shaped like a cone and reach the upper part of the door.
- if the flame is too low, increase the flame by turning the setting screw counter clock wise.
- if the flame is too high, reduce the flame by turning the setting screw clockwise.

Please note - Very important: The adjustments of the float regulator are very sensitive. The high and the low setting screws must never be turned more than a 1/4 of a turn at a time in any direction from their initial setting.

When making any adjustments, allow 3 to 5 minutes between adjustments to allow burner to stabilize to previous adjustment before proceeding, if necessary.

2.12. Chimney draught

Once the stove has been properly installed, the chimney draught must be checked.

The adjustment of the draught will be made with the barometric damper located at the back of the stove (rep. 1, fig. 14).

The reading of the draught must be done once the unit is hot (minimum 30 minutes of use).

Refer to the specifications p. 3 for minimum draught requirement on low setting and on high setting.

2.13. Door closing pressure

The closing latch rotates around a pressure screw positioned cam (fig. 15).

- Loosen pressure screw 1.
- Turn cam to desired position 2.
- Tighten pressure screw 1.

2.14. Maintenance of the Chimney

Chimney and chimney connector should be inspected at least once every three months during the heating season to determine if a soot build up has occurred. If soot has accumulated, it should be removed to reduce the risk of a chimney fire.

3. Operating instructions

3.1. Fuel

Warning: Your stove is fitted with a specific float regulator for a specific oil.

Kerosene 28 sec. (1,8 cst at 25°C)

The fuel oil must be free from any dirt and water which could disturb the stove in operation.

3.2. Lighting procedure

- Be sure the control knob is to "0" (rep. 1, fig. 16).
- Turn on oil supply,
- Push down gently on the safety lever (rep. 2, fig. 16). This will allow the oil to flow into the float regulator.
- Open the front door, and remove the catalyser from burner (rep. 2, 3 and 4, fig. 3, p. 4). Make sure the inside of the pot is clean thoroughly, and there is no oil accumulation.
- Place 2 tablespoons of methylated spirit or gelled alcohol in the bottom of the pot. Light the starter gel or methylated spirit with a fireplace match or long butane lighter. Place the catalyser back into the burner, being sure it is centered in the burner. Shut the main door.
- Allow the catalyser to heat approximately 30 to 45 sec. Turn dail to "1" position.
- Allow 10 to 15 minutes for oil fire and draught to stabilize. The catalyser should glow red before adjusting the control knob to a higher setting.

When the fire is lit for the first time, the appliance may give off fumes from the new paint. This is normal but ensure the room is well ventilated during the first few hours operation.

3.3. Operating procedure

Allow 10 to 15 minutes after lighting to adjust the control knob to a higher setting, usually between a "2" and "4" setting.

When increasing the heat output, move the control knob only 1 number at a time, allowing 5 minutes between moves for the flame to re-adjust to new setting.

If the burner stops during operating, immediately turn off the control knob (position "0") and wait until the burner is completely cool before repeating the lighting procedure.

3.4. Shutting down

- Set dial to the "0" position (rep. 1, fig. 16).
- -Raise the safety lever of the float regulator (rep. 2, fig. 16).
- Allow the flame to burn out completely before opening the door.

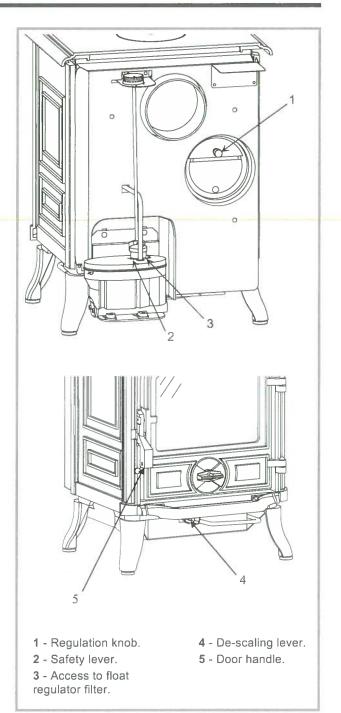


Figure 16 - Operating devices

3.5. Maintenance of the stove

Every week: operate the de scaling lever (rep. 4, fig. 16, p.9).

- Pull the rod, then push the rod in rotating 360 degrees two or three times (CAUTION: The rod is HOT).

Every 3 or 4 months: Clean the burner completely.

- -Remove all the parts of the catalyser (rep. 2, 3 and 4, fig. 3, p. 4)
- Using a soft bristle brush (a small clean paint brush), carefully brush off the catalyser. Loosen any carbon soot from the bottom of the burner with a putty knife, and vacuum clean. Ensure that the small air holes in burner are free of carbon.

At least once a year / End of heating season: Clean or replace the oil filters, the oil supply line and to change the joint of the de-scaling lever (rep. A, fig. 17, code 142889) by a professional installer.

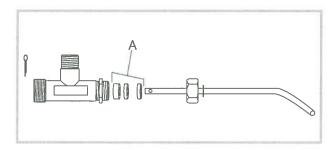


Figure 17 - The joint of the de-scaling lever

To clean the filter of the float regulator:

- -set the regulation knob in closed position "0" (rep. 1, fig. 16, p.9),
- turn off the tankvalve or the valve of the oil supply ligne.
- -raise the safety lever of the float regulator (rep. 2, fig. 16),
- place a small container (or a small rag) under the float regulator filter opening in order to collect the oil contained in the float regulator,

- remove the filter cover plate located under the float regulator (rep. 3, fig. 16) with a screwdriver,
- remove the tubular filter from the float regulator. Clean it with oil using a soft brush, never a wire-brush,
- replace the filter in the float regulator, install the cover plate and secure with the screw.

Clean all the enamelled panels of the stove with a dry or slightly damp soft cloth.

Use a soft clean cloth to wipe the front glass when the unit is running at a low burning rate. When the main door is opened for cleaning, the flame will be disturb, and turn to a yellow flame. Clean quickly, but gently. Close the door, the flame will return to a normal burning position.

N.B.: The appearance of cracks when burning the enamelled units is quite usual and tends to disappear when the appliance is cooling down. It should not be considered as a defect but rather as a patina of the enamel which does not affect its quality nor its service ability.

3.6. Recommendation

The adjustment of the stove has been made at the factory and checked by your installer. Any anomaly of operation should be reported to him at once.

This room heater is a high heat producing appliance and may cause severe burns if touched on the glass front door, or on top directly over the burner - keep children away - Do not use for drying wet clothing.

CAUTION: Never light the burner if there is oil in the burner pot. Clean out oil before lighting.

Racing: An audible fluttering sound is an indication that there is too much oil in the pot burner and/or a lack adequate draught.

- turn off oil supply and set the control knob in closed position "0" (rep. 1, fig. 16, p. 8).
- until fire has decreased to proper burn rate.

Do not overfire: If the stove or chimney connector starts to glow, you are overfiring.

3.7. Trouble shooting



☑ : This sign means that you should asked for a qualified engineer to do the work.

SYMPTOM	PROBLEM	+	- TEST SOLUTION
Flames extinguish during lighting.	Very cold chimney. No draught established.		- Leave door ajar until fire has caught.
ngrung.	established.		- Check air supply in the room.
Fire extinguishes once firestarter has burnt off.	Fuel tank is empty.		- Fill tank.
	Fuel valve is closed.		- Open valve.
	Main regulator float not engaging.		- De-press the safety lever.
	Control knob is set on "0"		- Adjust control knob to "1".
Fire extinguishes during use.	Fuel tank is empty.		- Fill tank.
	Insufficient draught.		- Call your installer.
Flame is excessively large, smoky and sooty.	Fuel adjustment made too quickly.		 Return control knob to "1"; wait for normal combustion, (catalyser should glow red) Wait 5 to 15 minutes between each adjustment.
Stove burns noisily, extinguishes and relights itself.	Burner contains excess fuel.	Ø	 Adjust to lower setting. If problem persists call your installer.
	Insufficient fuel.		- Check that the de-scaler, the float regulator filter and burner pot are cleaned.
Fire smokes. Soot build up noticed. Flame imbalance	Insufficient air supply.		 Increase fresh air supply (open door, window, add make up air supply).
	Downdraught or blockage in chimney.	V	- Check Chimney for Soot build up. clean if necessary.
			 Ensure chimney height is sufficient and cap is not affected by any nearby obstructions.
			 Room is in negative pressure. Increase fresh air supply. Check draught with draught meter and adjust if not to requirements. See page 4.
	Oil flow is too low on 1 setting.	Ø	- Adjust low flow rate while control is set on "1", call your installer.
	Stove is not level, Flame imbalance.		- Check level. Adjust if necessary.
	Catalyser not centered. Uneven fuel distribution resulting in secondary air shortage.		- Center catalyser assembly
	Insufficient fuel.		- Check that the de-scaler, the float regulator filter and burner pot are cleaned.
	The draught regulator is blocked in open position	V	- Unlock the draught regulator.
			 Check the float regulator adjustment and refit, if necessary.
Coke build up noticed.	Excessive air supply.		- Adjust draught.

Notes

4. Spare parts

When ordering spare parts, specify the stove type and serial number, including the colour index (on the guarantee or identification plate), the name of the part and the part number.

Example: Stove Belfort, reference 174 05 05, color Y, base 352155 EF

N° Code	Description
1 100917 2 104708	Plug
3 905328	Complete burner
4 109552	
5 109718	
6 110105	1 39 Vr. 12 Vr. 22 32 32 32 32 32 32 32 32 32 32 32 32
7 110404	9-1
8 119215	
9 122204	9-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1
10 134258	
11 134601	Pin
12 181632	
13 142316	Gasket
14 142327	
15 149868	
17 162550	The state of the s
18 164205	Oil-tight nut
19 165145	Float regulator
20 179617	Regulator shaft
21 181614	Ceramic rope Ø 9,5 1,42 m
22 181615	Ceramic rope Ø 12 1,35 m
23 188818 24 189118	Glass
25 199204	
26 198204	Regulator filter
27 194401	Catalyser ring
28 194403	Catalyser body
30 905327	Basic burner
31 205389	Back panel
32 209916	Protector
33 222560	Flue baffle
34 222611	Suppl. flue baffle
35 236708	94 Bracket
36 239715	60 Carburettor support
37 259015	Fixing plate
38 260583	60 Heat shield
39 446302	Shield
40 300118	EF Leg
41 300483	Base
42 301526	EF Door lock
43 303301	EF Bearing
44 303726	EF Blanking plate
45 303829	EF Flue collar
46 909401	Sliding door

Belfort ref. 174 05 05

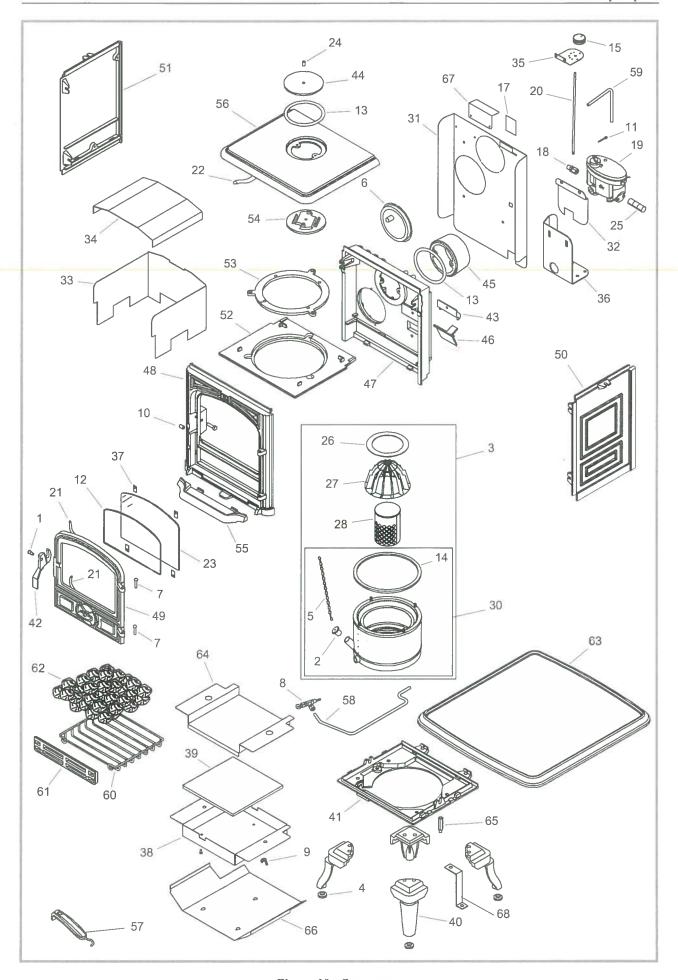


Figure 18 - Spare parts

Belfort ref. 174 05 05 Spare parts

N° Code	Description
47 306279	EF Back wall
48 309898	EF Front plate
49 309997	EF Main door
50 310724	EF R. side panel
51 310822	EF L. side panel
52 312631	Burner support
53 321903	Rim
54 327802	Clamp
55 327902	EF Ash-tray
56 352155	EF Top plate
57 808001	ED Hand tool
58 982629	Feed line regulator-burner
59 182747	Vent-pipe
60 818301	Grate
61 307436	Fuel retainer
62 109722	Ceramic coal
63 332201	60 Ground vat
64 262218	Shield
65 124412	Strut
66 262606	60 Shield
67 202801	Support
68 445910	Bracket
69 142881	Ceramic rope

FRANCO BELGE

"La chaleur en toute confiance"

§ Guarantee certificate §

* Legal guarantee

The specifications, dimensions and information shown on our documents are provided for information purposes only and under no circumstances are binding upon the vendor.

With the aim of constantly improving our equipment, all modifications considered as necessary by our departements may be made without notice..

The provisions of the present guarantee certificate are not excluding or limiting the owner of the equipment's rights, concerning the legal guarantee regarding faults or hidden vices which applies in all circumstances, in the conditions detailed in articles 1641 and following of the civil code, and the country in which the equipment was purchased.

* Contractual guarantee

Our equipment is guaranteed against faults and hidden vices subject to following conditions:

1)Installation and ajustement of the device by a professionnal installer

2) Observance of the instructions provided in our technical documents and our installation/adjustement instructions.

3) The installation, use and maintenance of the device carried out in conformity with the applicable standards and legislation, and with the indications provided in the technical instructions accompanying the device.

This guarantee covers the replacement, in our factory, of parts recognised as being defective from the outset by our "Guarantee Inspection"Department. Carriage and labour is at the user's cost. Moreover, if the repair or replacement of parts covered by the guarantee is found to betoo costly vis-à-vis the price of the appliance, the decision to replace or repair the appliance will be taken by the vendor.

Our guarantee is for 2 (two) years for all appliances, with the exception of closed combustion fireplace and inserts for which our guarantee is 5 (five) years excluding the following:

)Indicator light, fuses, electrical elements and fans.
2Parts subject to wear or in contact with high temperatures namely:
soles and burner grills, bottom plates baffles, ash pans, paintwork
and surface treatments for decorative parts. Also excluse from this
guarantee are seals and windows

3) Any damage which may result from the use of the appliance with a fuel other than that stipulated in our instructions.

4) Damage occuring to parts caused by elements ouside the appliance (down draught, storm damage, damp, abnormal pressure or vacuum, heat shocks etc.).

5) Damage to electrical parts causedby plugging in and using the appliance on a mains system, the voltage of which (measured at the entrance to the appliance) is 10% above or below the nominal voltage of 220 volts.

* Exclusion of liability

In the case of a product manufactured at the client's request, under no circumstances may we, as a subcontractor, be considered liable vis-a-vis the client or third parties for defects arising from the installation or a design fault with the item in question.

➤ Name and adress of the installer: Telephone:
Name and address of the customer:
Date of installation :/
Model of the appliance: 174 05 05
Color: QY
Serial number:
This certificate has to be completed and kept carefully. In case of claims, send a copy of this to :
FRANCO BELGE♦♦
127 items RIF 15 - BE 5660 MARIEMBOLIRG (Relgium)