Manual for

Himalaya MultiFuel

(MFS)

Himalaya VariFuel

(LFS)

PRIMUS

CONTENTS

What does MFS and LFS mean?

MFS means “Multi Fuel System” because the Primus Himalaya MultiFuel stove is the only stove in the world that is able to burn gas from cartridges and liquid fuel. LFS means “Liquid Fuel System“ because the Primus Himalaya VariFuel stove can only burn liquid fuel and not gas from cartridges. Both stoves are basically identical and the handling is exactly the same when burning liquid fuel. The difference between the two stoves is the pump 15 and the fuel pipe 10 which comes with pump swivel connection 11 for the fuel bottles and the cartridges for the MFS. The guidelines for using gas cartridges only refer to the MFS.

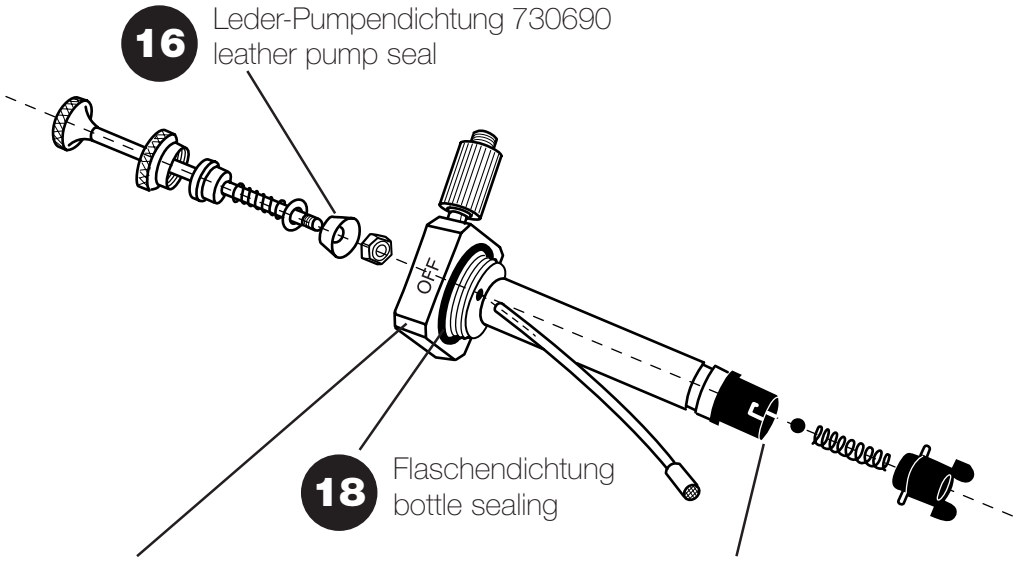
These drawings show the names of the most important parts of the Primus Himalaya MultiFuel (MFS) and the Himalaya VariFuel (LFS) stoves (and the number of the spare parts that are needed most frequently).

Attention: In the drawings you see the burner and the pump of Primus MFS. The LFS pump 15 and pump swivel connection 11 are designed in a different way than on the MFS. On the LFS, you find the control valve 12 on the pump 15 and not on the pump swivel connection.

14 Gaskartusche 450 gr Gas 2202
gas cartridge 225 gr gas 2207

21 Reinigungsnadel
cleaning pin

19 Brennstoffflasche „1000“ 721960
fuel bottle „600“ 721950

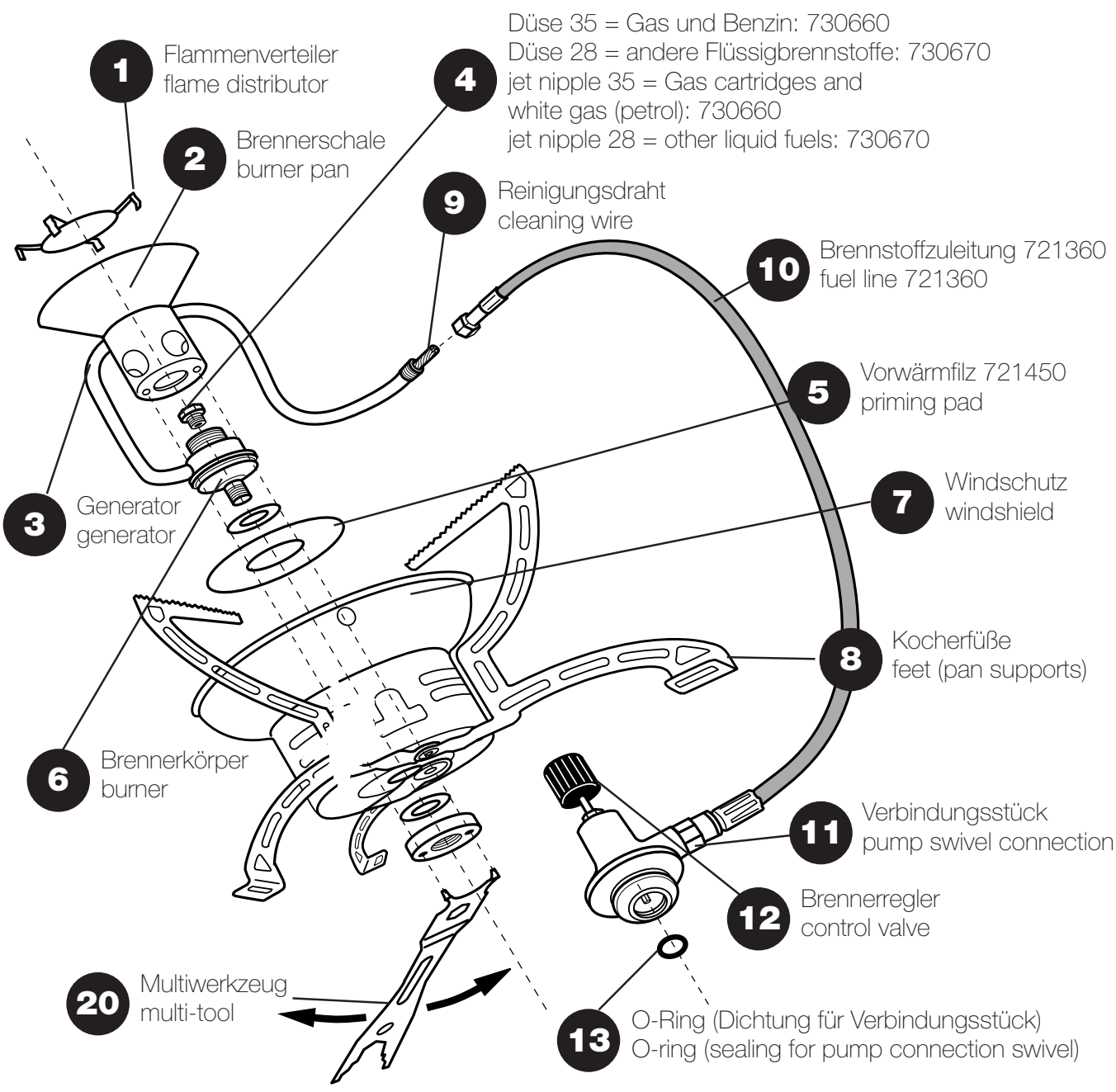


16 Leder-Pumpendichtung 730690
leather pump seal

18 Flaschendichtung
bottle sealing

15 Pumpe 721260 MFS
pump 721550 LFS

17 Rückschlagventil
one way valve


1 Flammenverteiler
flame distributor
2 Brennerschale
burner pan
4 Düse 35 = Gas und Benzin: 730660
Düse 28 = andere Flüssigbrennstoffe: 730670
jet nipple 35 = Gas cartridges and
white gas (petrol): 730660
jet nipple 28 = other liquid fuels: 730670
9 Reinigungsdraht
cleaning wire
10 Brennstoffzuleitung 721360
fuel line 721360
5 Vorwärmfilz 721450
priming pad
3 Generator
generator
7 Windschutz
windshield
8 Kocherfüße
feet (pan supports)
6 Brennerkörper
burner
11 Verbindungsstück
pump swivel connection
12 Brennerregler
control valve
20 Multiwerkzeug
multi-tool
13 O-Ring (Dichtung für Verbindungsstück)
O-ring (sealing for pump connection swivel)

Safety First

Yes, I know, everyone who buys a new stove or a similar product, will play around with it at first – they will use the stove before they read the manual. If you do this with a toaster, you may just burn yourself, but with a stove it's different – it can be dangerous. In the worst case it can cause major injuries or even death. A stove is a potentially dangerous appliance, especially when it is operated with liquid fuel. So now, please, do me a favour:

Read the manual first!

- **Read this booklet carefully!**
- **Never hold your head or body above the stove!**
- **Don't cook inside your tent or your house**
- **Be very careful when you change from white gas (petrol) to gas cartridges!**
- **Be careful when you reignite a still hot stove!**
- **If you use a windshield, never put the fuel bottle or the gas cartridge inside the windshield. Overheating may cause an explosion.**
- **Practice, practice, practice - before you set out.**

INTRODUCTION

"When you travel to Australia, you must try the new MFS", Andreas Ruhs from Primus suggested to me. I did as he said – and was impressed. When Andreas asked me what I would suggest improving, I remembered the manual, an unattractive and complicated leaflet which was enclosed to the stove. Background: there are EC guidelines for stoves covering everything from content to layout. Primus agreed to my (and other people's) suggestion to supplement the original instructions. We believed they should be interesting, written comprehensively and be practical and useful. We hope you find this supplement helpful in getting the best out of your Primus stove.

The Primus Team with Till Gottbrath

Editorial
publisher: Primus AB, Solna, Sweden, info@primus.se
idea & text: KernoGottbrathoLang Kommunikation, München
layout & production: Werner Bauer, Esslingen, Germany
drawings: Primus AB, Brigitte Pega
english edition: Elena Cacavas, Murray Ferguson, Alan Hallberg

What fuel is the best?

Gas (→ jet nipple 35)

Gas cartridges are great. It's my favourite fuel! I don't need to pump while lighting the stove, nor do I need to pre-heat the stove (this is also known as priming). It burns without leaving residues (stove and dishes/pots don't get soiled and only steam and CO_2 remain). The cartridges are leak-proof and the ratio of fuel weight to energy is very high, making it one of the most efficient fuels. It leaves no aftertaste or smell in your food or equipment. Special gas mixtures like Primus Liquid Gas works well, even at high altitudes. There is only one problem: gas cartridges are not allowed on airplanes, and it may occasionally be difficult to find the right cartridge in some parts of the world.

The Primus jet nipples

Your stove comes complete with several different jet nipples. The jet nipple ❹ is the little, circular brass part which is screwed into the center of the stove. You must use the appropriate jet nipple for the kind of fuel you will be using.

The jet nipple marked 35 (= 0.35 mm) is for gas and all lead-free petrol types.

The jet nipple marked 28 (= 0.28 mm) is for all other liquid fuels.

Please check that the right jet nipple has been installed. Use the multi-tool ⓴ which is provided with the stove to switch nipples (see p.35 on how to clean the jet nipple).

White gas (petrol) (→ jet nipple 35)

Where there are cars there is fuel, and cars are almost everywhere. Petrol is the most inflammable of all liquid fuels. This means both advantages and dis-advantages. Advantage: priming of the stove takes only a short while. Disadvantage: petrol vapours are highly explosive (that's why it is forbidden to smoke at petrol stations). It is the most hazardous of all fuels.

Other disadvantages are the varying qualities and types of petrol. There is a so called catalytic gas / white gas (called lighter fluid gas at the chemist's drugstore, stove gas in the outdoor shop, or cleaning gas in the home and in the pharmacy). These are all varieties of petrol with just a few additives. That's why they burn without any problems. Car petrol, on the other hand, always contains additives for the protection of the engine. These additives may cause health problems (they are highly carcinogenic) and may also harm the stoves by blocking fuel lines or leaving ugly residue on the burner and the pots. If you have the choice between leaded and unleaded petrol, always use unleaded. Finally, we have the problem of residuals clogging up the flow of the fuel – i.e. dirt from the tanks in which the fuel has been transported. On our expedition to Pik Lenin in the Pamirs, this drove us almost to despair. A filter (if necessary a piece of cloth with a fine mesh or a coffee filter) often helps.

How does a stove work?

Unlike a paraffin lamp with a wick, a stove does not burn liquid fuel, but only gas. This means that liquid fuel has to vaporise first.

All chemical compounds are found in solid, liquid or gaseous states (for example water as ice, liquid and steam). This depends on the compound, the ambient temperature and the prevailing pressure. Liquid gas for a stove or spirit will vaporise if you let it stream out (at normal temperature). Other liquid fuels (petrol, paraffin, etc.) must be heated before they will vaporise.

If you operate a stove with liquid fuel, you must first prime (pre-heat) it. The higher the vaporising temperature, the longer the priming will take (see table at page 50). The various fuels vary in volatility (i.e. how fast they evaporate). Stoves which accept multiple fuels (like MFS and LFS) need differently sized jet nipples ❹ . To tell them apart, we have given them the numbers 35 and 28.

As soon as the stove burns, the generator ❸ (that is the pipe that goes through the flame) assures free burning of the stove. If it starts "spitting", there might be too much pressure in the bottle or not primed enough. Let out some of the pressure (outdoors, with no naked open flame nearby). More priming: See page 19.

Kerosene (USA) / Paraffin (UK) (→ jet nipple 28)

This “rock oil” is being used all over the world as fuel for stoves and lamps. For this reason, you will find it in places where you dont find white gas (petrol). Its energy content is almost as high as that of white gas (petrol), but priming takes longer (you should use priming paste since paraffin produces a lot of soot). Also, note that you should clean the jet regularly. Another disadvantage: it smells disgustingly. Spill just a few drops on your backpack, and you’ll have to do some serious washing! On the other hand, there is no danger of explosion.

Jet Fuel (→ jet nipple 28)

Jet fuel is closely related to paraffin (UK) or kerosene (North America and Australia). It is used for the jet engines of large aircrafts. You can use it for your Primus stove too, but if you have the choice between jet fuel and paraffin/kerosene, we would recommend the latter.

Diesel

Diesel is chemically related to paraffin and has two more disadvantages than the latter: the energy content is lower, and the temperature needed to vaporise is even higher. For the new model of the Himalaya Varifuel (LFS) we have therefore developed a new burner pan ❷ (”bell”). The new burner pan makes it possible to run the varifuel (LFS) on diesel. However, I cannot recommend diesel as the fuel of first choice. One advantage is evident: you find it everywhere around the world.

Alcohol / Spirits (do not use them)

The energy balance of alcohol is good enough for a solid beer belly but as stove fuel it will try the patience of a saint... The cooking performance index of spirits (see table on page 50) is scarcely half that of Primus Liquid Gas.

You should choose other fuels. The MFS or LFS burner would function with spirits. At the moment, however, there is no sealing compound that is resistant against both alcohol and benzole (components of gas or paraffin). Primus is doing research on a new material, but right now it doesn't exist. So for now: **hands off spirits!**

Please notice the table "Fuel in comparison" on page 50.

Where do you cook?

Outdoors

Sunset, calm weather, warm air – you lean back, breathe the mouth-watering smell of dinner on your stove which is placed on a beautiful, big, flat rock. These are ideal conditions – but not very frequent, I'm afraid… Look for a flat spot that is protected from the wind or build one of stones. In the dry season, be careful not to set the vegetation on fire. And please remember to put any rocks that you have moved back to where you found them.

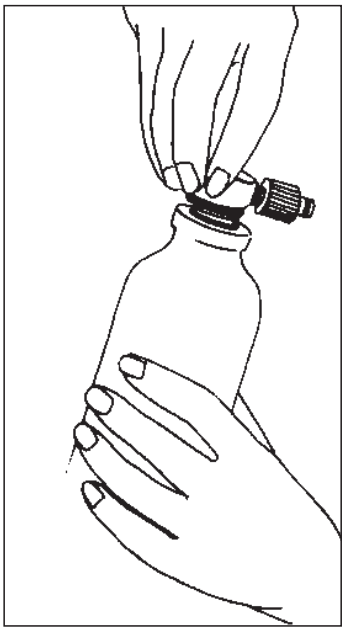
Indoors

Never use your Primus stove indoors (this includes all buildings, tents, trailers, campers, cars etc.). For safety reasons it is strictly forbidden!

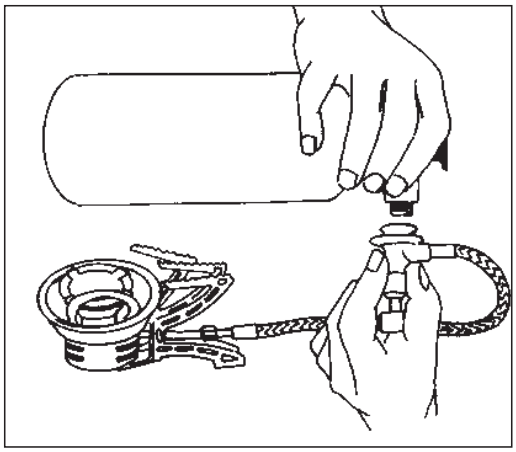
In the snow

A hole in the snow offers an ideal spot where to place your stove because it will serve as a shelter for the wind. Do not forget to build an air supply pipe from the side or below, to provide a flow of fresh oxygen. You should also use a small wooden board to prevent the 'hothead' from melting down into the snow.

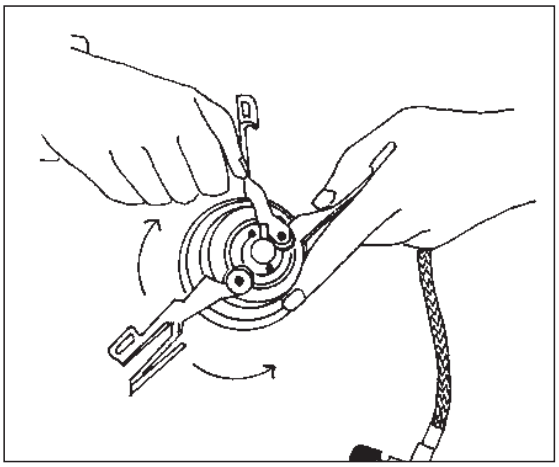
To repeat what we said earlier: Did you read this booklet from start to finish? Are you outdoors? Have you found a place where the stove can be placed safely? Did you make sure that the control valve 12 is turned off (= turned fully clockwise)? Did you install the correct jet nipple 4 for the fuel you are using?



1. Screw the pump 15 onto the fuel bottle 19 (only if you are using liquid fuel). Be careful not to fit it cross threaded!



2. Connect the stove to the pump 15 (or gas cartridge). Screw the pump swivel connection 11 onto the thread (cartridge valve). Do not screw it cross threaded, and do not use force when you tighten it (or you may damage the sealing).



3. Pull out (rotate) legs 8 (we are very proud of the legs, they are very solid!) Now you are ready to cook.

1 Cooking with gas (only for MFS)

Gas is my favourite fuel: just arrange the stove, hold a burning lighter or match over the burner, open control valve 12 on hose swivel connection 11, and there it goes!

2 Liquid fuel

Fill the bottle to the fill line (not higher).

2.1 Building up pressure (= pump)

If you are using a freshly filled fuel bottle 19 you need to pump 10 - 15 strokes. If the bottle is not completely full up to the fill line, pump a few more times. Place the fuel bottle (never to close to the burner!) so that the inscription 'ON' on the pump 15 shows upright.

2.2 Priming (pre-heating)

Open the control valve 12, some fuel will run into the priming pad 5 below the burner. Then close the control valve. If you are using petrol, the pad doesn't need to be soaking wet. If you are using another liquid fuel, it has to be quite soaked through. Check again to make sure that the system is not leaking, then light the fuel for priming.

Attention: do not place your head or other bodyparts above the stove!

Priming will take 1 minute at the most for petrol. For diesel (only the Vari-fuel/LFS) and kerosene/paraffin, prime for approximately 2 minutes – the lower the temperature, the longer you must prime. (Hint: these fuels just mentioned all soot quite a lot. Hence, we recommend you to use priming paste, especially when it is very cold). As soon as the generator 3 is sufficiently hot, it will give a hissing sound. Wait until there is almost nothing left of the priming liquid, then open the control valve 12 (= turn it anti-clock-wise carefully).If priming is done correctly the stove will after a few seconds burn with a steady flame and not flicker. See further page 31.

If priming is not done correctly (unsteady flame, “spitting” burner), you will have to wait for a moment. Usually the burner will soon reach the required temperature for operation (in about 10-20 seconds). If that doesn’t work, repeat priming once more. First wait for a moment, and let the burner cool a little.

’Opening it right up’

Regulate the size of the flame with the control valve 12: clockwise = smaller; anti-clockwise = bigger.

You don’t need to open the valve all the way to cook at maximum. The flame does not get any bigger from a certain point on, regardless of how far you turn the valve. This is the best point for maximum heating. If you continue to turn the control valve 12, you will only use up more fuel, but you won’t get your tea any faster.

Hint : As the bottle slowly gets empty while you use it, re-pumping during cooking is necessary.

Simmering – cooking on a low flame

If you use gas, cooking on a low flame is no problem at all. If you use liquid fuel, it’s a bit more difficult. To achieve simmering with liquid fuel you must reduce pressure or pump less. If you set the burner at a low level, please note that there will be a difference of 2-3 seconds between the time you turn the control valve 12 and the change of the flame.

If you turn the valve down too far, the temperature in the generator 3 will not be hot enough for evaporating the fuel, and the stove won’t function anymore. You will have to turn it up again.

With a little practice you will get the hang of it and will know at which point the flame is the smallest possible.

1. Turning off: gas

As always with gas cartridges: everything is easy! Just turn off the valve (= clockwise), and that's it. The rest of the gas in the fuel line 10 will evaporate without residue.

2. Turning off: liquid fuel

- Turn over the bottle (the inscription OFF on the pump 15 should be upwards).
- It will take 45–60 seconds until the last remains of fuel in the fuel line 10 has burned.
- After a while there will be only a little flame left (small, candle-like). Just blow it out and turn off the valve 12.

Turning the bottle to OFF will bleed the fuel line 10 which is very important. In the fuel line there will be no fuel left that might leave residues. This will save you a lot of cleaning and maintenance. And that's very practical.

Bottle or cartridge empty = change it

Fuel changes or the filling of bottles must be done outdoors. Turn off the control valve 12 (= clockwise). Make sure that the flame is out and that there is no other flame nearby. Unscrew the control valve 11 from the gas cartridge or from the connection on the pump 15.

Let out the rest of the pressure from the bottle before you open it for filling. Important: never fill it above the filling line (marked on the bottle)!

Before you fit on the new cartridge or the refilled bottle, always check the O-ring 13 (= seal) in the control valve 11.

Removing, unpacking and storing the stove

Gas cartridge: Just unscrew the connection swivel from the valve of the cartridge 11. The cartridge has a built-in, one-way valve which shuts automatically.

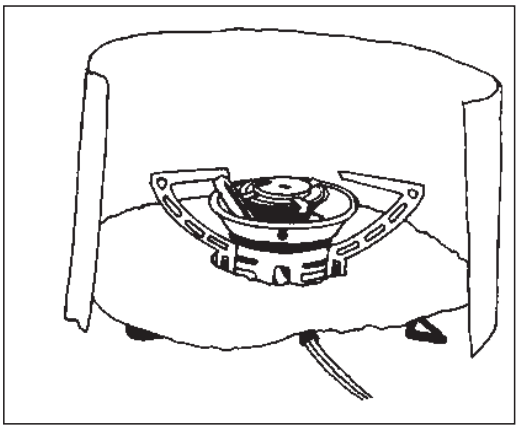
Liquid fuel bottle: To release the pressure in the bottle, just let the valve 12 stay open after burning the remaining fuel in the hose, you will hear a hissing sound coming from the burner 6. The remaining pressure flows out of the bottle. When the hissing stops, turn off the valve. Now you can unscrew the pump 15. This is not always necessary, though. You can leave the pump 15 inside the fuel bottle 19. It won't get dirty there, and it is protected from damage.

More hints & safety information

- Never let pots cook dry.
- Never leave your operating stove unattended - not even for a moment.
- Remember: a stove can get very, very hot. Grab a leg if you must move the stove.
- Transport your stove and food separately, if you don't want your food to taste of petrol or paraffin.
- Do not drop your stove or use force on it, which goes without saying. Be careful with stones if you build a windshield.
- The fuel line 10 is the most stable you can get. Still, you should not fold or twist it more than necessary.
- Clean the storage sack regularly. There's always dirt and sand in it!
- Never keep fuel near a source of heat.
- Separate the stove from the gas cartridge or fuel bottle for storage.

Save fuel

- Always put a lid on the pot.
- Cook in a wind protected spot.
- Use a heat reflector and an external windshield – especially if it is windy!



If you use the heat reflector you will need about 17% less fuel. With an external windshield this value will improve.

- Fold the windshield so that it becomes smaller if you use a smaller pot.
- Use pots that conduct heat well (aluminum or aluminum-steel).
- Don't turn the flame higher than necessary (see page 21).
- If you are using liquid fuel, priming will consume some of it (depending on your skill, fuel and the air temperature). You might save more fuel by leaving the stove burning on a low flame, before you brew your tea after the meal, instead of reigniting it.
- A black or sooty pot absorbs more heat than a polished one.

Cooking in cold weather

1. Using gas in cold weather

Gas does not evaporate, if it is very cold (at sea level: propane at –42°C, isobutane at –12°C, butane 0°C). You may believe that 100% propane is the best gas for cold temperatures. Unfortunately 100% propane gas cartridge contents are prohibited due to the high pressure of propane. The gas must be mixed with butane and iso-butane. Propane does not mix properly with butane, though. If you light the stove when it is cold, only the propane will

flow out, the butane will remain at the bottom of the cartridge. As the contents of the cartridge decrease, it will be gradually more difficult to light the stove, due to the higher portion of butane in the mix. We have optimised the mixing ratio of these three gases for Primus gas cartridges.

What can you do to make gas evaporate even in a cold climate?

From –15°C and colder you must warm the cartridge by:

- Putting it under your jacket for 10 minutes before cooking.
- Warming it in some warm water that you have left in your thermos bottle.
- Put it inside your sleeping bag at night (brrrr!).
- Pee on it, (well, we admit that's kind of a strange tip, but in rough times...).
- Use a Primus Heat Pad. This is a 90 gr. pad that is activated with a 'click'. Put it under the cartridge. There, it will develop a temperature of about 50°C for 15 minutes. To charge it again, let it boil for 5 min. You can put it in your soup, the plastic cover is food proof.
- Turn down the control valve as low as possible. Now hold the gas cartridge and turn it upside down slowly and very carefully. While doing so, you must never lift the cartridge higher than the stove itself to avoid a sudden burst of flames.

2. Using liquid fuel in cold weather

- Below –20°C, wax and other substances, that are contained in most of the liquid fuels, will turn thick or solid. Also the leather 16 of the pump 15 will get stiff. Stuff the fuel bottle under your jacket or in your (partner's) sleeping bag before you light the stove.
- Be careful that your skin does not contact the fuel. Danger of frost bite by fuel evaporating on your skin!

- If the burner (stove) is not hot enough, the fuel will not burn with the small, blue flame that it should do, but with a yellow flame – like a fire and also with the occasional high flames you have in a fire. Reason: the fuel has not yet vaporised, but comes to the burner in liquid phase. It actually burns like an open fire. The intuitive thing to do is to close the control valve 12. With white gas/petrol that is ok. Then simply wait until the flames become sufficiently small and then open the control valve more. However, if you do it in the same manner with kerosene/paraffin or diesel you will most likely have a problem because these fuels will create soot that will clog the jet nipple 4 and often the generator 3 which in turn means that you must clean these. My hint here for kerosene/paraffin or diesel is: do not close the control valve fully but leave it open just a little bit. Close it only so much that you do not nourish the big, yellow flames but still some fuel flows through- and by doing this no soot sediments will develop in the generator, nor in the jet nipple.

Cooking at high altitudes

1. Gas

Most expedition mountaineers use gas at very high altitudes. Why?

1. It's the safest fuel.
2. Gas has the highest energy content.
3. It needs no priming.
4. It leaves almost no residue or toxic substances.

2. Liquid fuel

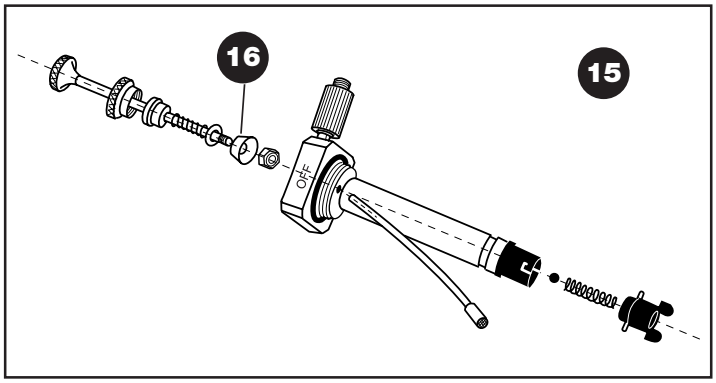
Liquid fuel is not as good for very high altitudes as gas cartridges, although it works well enough in base camps. Since stoves are used a lot there, one might choose to use kerosene/paraffin. White gas/petrol has a higher energy content, but for safety reasons I would prefer kerosene/paraffin.

Basic rule: “Hands off if it’s burning”

I know many enthusiasts who love their equipment more than anything else. They fiddle around with it until, eventually, they damage their gear (e.g. sand gets into the burner when they are cleaning it).

Do it regularly: grease the leather seal in the pump

The pump 15 for the stove functions like a bicycle pump. On the lower end of the pump rod there is a leather seal. If it gets dry, pumping will become difficult, and you will find it hard to build up pressure in the bottle. You must grease it. In the maintenance and service set for MFS and LFS (721290) and in the maintenance set for the pump (721460) you will find a special grease for the leather seal 16. If you don’t bring this special grease, you can also use vaseline, sun protection paste, olive oil or something similar.



How you get access to the leather seal 16 of the pump 15 to grease it: unscrew and pull.

1. Unscrew the cover under the pump handle, and pull the handle with the pump rod carefully out of its casing.
2. Now you see the leather sealing at the lower end of the pole. Rub the leather until it gets soft, and rub the grease into it. If the sealing leather gasket is completely worn out, replace it. Off you go to your Primus dealer!
3. Re-install the pump.

...and what about cleaning...?

The way the pump 15 is constructed makes it possible to let the stove burn until the fuel line 10 is empty (see page 23). This will save you a lot of cleaning and black fingers. However, it might be necessary to clean it occasionally, especially if you often use liquid fuel.

1. Cleaning the jet nipple

Before you start fiddling around with the jet nipple 4, turn off the control valve 12 (= clockwise), and unscrew the stove from the cartridge or fuel bottle 19.

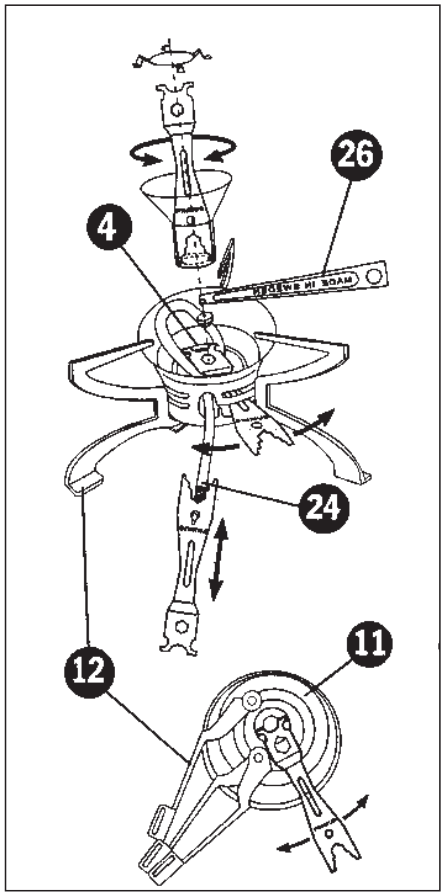
1. Lift off the flame distributor 1 and unscrew the burner 2 with the multi-tool 20.
2. Now you see the jet nipple open in front of you. You can unscrew it with the multi-tool 20 or clean it with the cleaning needle 21.
3. If you have unscrewed the jet nipple 4, you have to pull it tight again and re-install the burner.

2. Cleaning the generator

If the generator 3 is blocked, clean it by using the cleaning wire 9. You do not have to look for the wire among your accessories: it is stored within the generator 3 during usage.

1. Remove the fuel line 10 from the generator 3 with the multi-tool 20 (see drawing on the next page in English).

2. Pull the cleaning wire 9 out of the generator 3. In most cases you can do this by only using your hands but if that is not possible, use the multi-tool 20. Put the cleaning wire 9 through the circular hole in the multi-tool 20 and slant the tool a little so that the wire sticks in the hole.



Here you see how to get to access the jet nipple or the cleaning wire.

3. Then push the cleaning wire into the fuel line 10 and move it back and forth a few times.
4. There may remain small pieces of dirt in the fuel line which you must flush out: screw the fuel line 10 onto the generator 3 again but without the cleaning wire 9 , then unsrew the jet nipple 4 from the burner, build up pressure in the bottle with the pump 15 and let the fuel flow through (control valve open, half a cup of fuel is sufficient). Do not throw away the fuel but filter it through a coffee filter or something similar and pour it back into the bottle. In most cases the cleaning is easier if you blow through the fuel line. Certainly, you will get a terrible taste in your mouth and it is probably not good for your health, but it is the quickest procedure (faster than the one just described).
5. Fasten the jet nipple 4 in the burner and put the cleaning wire 9 into the generator 3 .

Safety

Keep away from fire, heat and open flames! Go outdoors!
Don’t breathe the fumes!

Tip: Check the whole system for leaks with soapy water. If it leaks, beautiful bubbles will foam out of your stove, don’t forget to pump up a pressure first.

When you have finished reading this manual, you will know so many things about stoves, that you should be able to solve all possible problems with the use of a little logic. The two Primus stoves Himalaya MutliFuel and VariFuel are constructed in such a way that you can make them work and run again with only a few tools, even in the wilderness.

Problem: the stove does not heat sufficiently

Reason & solution: there are many possible reasons: out of fuel (⏵ new cartridge or refill bottle); bottle is not full (⏵ you have to pump more); bad priming (too short) (⏵ pre-heat again); wrong fuel (⏵ use right fuel); fuel bottle 19 does not hold the pressure (⏵ see below); jet nipple 4 or fuel line 10 blocked (⏵ see previous chapter); gas cartridge too cold (⏵ warm it up, see page 29 “cooking in a cold weather”); burner gets too little oxygen (⏵ increase oxygen flow).

Problem: there’s a leak somewhere

Attention: Dangerous problem! Turn off the stove immediately and extinguish all open flames.

Reason: a seal is leaking or is torn/broken.

Solution: you can normally hear where the pressure is being released. If not, fill the fuel bottle 19 with soapy water, increase the pressure and open the control valve 12. Now you should see soap bubbles somewhere if there is a leak . A seal is probably torn. If so, change it. It is also possible that a screw or the pump in the bottle needs to be tightened.

Problem: the fuel bottle does not keep the pressure, or it leaks

Reason: the one way valve 17 of the pump 15 is broken or dirty.

Solution: unscrew the pump 15 from the bottle, take out the one way valve 17

(on the lower end of pump 15 , inside the pump), clean rubber seal of valve, and re-install.

Problem: you can not build up pressure in the fuel bottle

Reason: leather seal 16 in pump 15 is worn, ripped or dry

Solution: ◗ see page 33 “grease the leather seal in the pump”.

Problem: stove hisses briefly and goes out again

Reason: too much pressure in the bottle.

Solution: ◗ let out some of the pressure (outside, with no naked open flame nearby).

Problem: stove hisses sometimes or “spits”

Reason: too much pressure in the bottle or not primed enough.

Solution: ◗ let out some of the pressure (outdoors, with no naked open flame nearby). More priming: see page 19.

Problem: irregular yellow flame

Reason: there may here also be different reasons: too much pressure in the bottle (◗ see above), jet nipple 4 or fuel line 10 are blocked (◗ see maintenance and cleaning, page 35).

If you can’t solve your problems and your Primus stove refuses to perform, contact your dealer. If there is no Primus dealer at hand, call the Primus representative.

Compatibility of fuel bottles and gas cartridges

All stove manufacturers recommend that their customers exclusively use fuel bottles and cartridges of their own brand. Of course, you believe that this is a marketing stunt, which is quite understandable. But there is a safety reason too! If the cartridge or the bottle and stove fit exactly together, very little can go wrong. That's why we recommend the use of Primus stoves only with Primus fuel bottles or gas cartridges!

During my travels around the world, I have made the distressing experience that you can't always and everywhere get the right cartridges and fuel bottles (if the fuel bottle has been lost or broken). If you have no other choice, you may make an exception and try to screw the Primus pump into fuel bottles from other manufacturers. It will work with most other bottles because the Primus pump is made of aluminium. (But don't try it the opposite way: pumps made of plastic will usually not fit into other brands' fuel bottles!)
Important:

1. All plastic bottles are out of the question – no matter, if the threads fit or not – since they will not endure the pressure.
2. Fill the bottle up only by three quarters full! This is due to the construction of the Primus pump. The fill line on orginal Primus fuel bottles is the only appropriate line. All other marked lines on other bottles are not valid!

Gas cartridges

There are four connection systems that are distributed widely. Good news: The Primus system that you are using is the most widely distributed system, and it provides the highest safety standards thanks to the automatically closing security valve. You will find this system on the cartridges of most other well known brands (though not on all). When you buy your stock of cartridges, bring the stove with you, and try it out right in the shop. Note: we are using the optimum gas mixture in Primus Gas cartridges. It may happen that although the connection to cartridges from other producers fits the Primus stove, the performance is much lower.

Where do I buy fuel?

If you drive, fly, walk or cycle to the end of the world, you will naturally ask if you will find the right fuel when you get there. As an owner of the Primus Himalaya MultiFuel, you have the most versatile stove on the market.

You have better buy your fuel in outdoor stores. If you cannot find one, try hardware shops, ironmongers', petrol stations, pharmacies, drugstores (medical gas). If that doesn't work eather, try to contact local mountaineering clubs etc. via tourist authorities or agencies. They may be able to help.

Brennstoffe im Vergleich

Brennstoff	Energiegehalt (kcal/kg)	Kochleistungs-index	Vorheizzeit
Primus-Flüssiggas	≈ 11900	100	keine
Propan-Gas	≈ 12000	101	keine
Butan-Gas	≈ 11800	99	keine
Benzin	≈ 10200	86	kurz
Petroleum	≈ 10100	85	lang
Kerosin	≈ 10100	85	lang
Diesel	≈ 9800	82	lang
Kohle (ca.-Wert)	≈ 8400	71	nicht möglich
Brennspritus	≈ 6300	53	nicht möglich
Trockenes Holz	≈ 4000	34	nicht möglich

Fuels in comparison

Fuel	Energy (kcal/kg)	Cooking per-formance index	priming time
Primus liquid fuel	≈ 11900	100	none
Propane gas	≈ 12000	101	none
Butane gas	≈ 11800	99	none
Petrol	≈ 10200	86	short
Paraffin	≈ 10100	85	long
Kerosene	≈ 10100	85	long
Diesel	≈ 9800	82	long
Coal (approx.)	≈ 8400	71	not possible
Methylated spirits	≈ 6300	53	not possible
Dry wood	≈ 4000	34	not possible

Country / Land	Fuel / Brennstoffe			
United Kingdom	unleaded petrol	white gas, petrol	paraffin	diesel
USA / Canada	unleaded gas	white gas	kerosene	diesel
Australia	unleaded petrol	Shellite	kerosene	diesel
Germany	bleifreies Benzin	Kocher-, Katalyt-, Rein-, Wasch-, Feuerzeugbenzin	Petroleum	Diesel
Switzerland	bleifreies Benzin	Kocher-, Katalyt-, Rein-, Wasch-, Feuerzeugbenzin	Petrol	Diesel
Spain	gasolina sin plomo gasolina doméstica	gasolina purificada petróleo	kerosén gasoil	diesel
South America	bencina sin plomo bencina doméstica	bencina blanca petroleo	keroseno gasoil	diesel
Portugal / Brasil	gasolina sem chumbo	benzina	petróleo	gasóleo
France	essence sans plomb domestique	essence à l`usage	petrole	gas oil
Italy	benzina sensa piombo benzina pura	benzina trielina	petrolio	gasolio, diesel
Norway	blyfri bensin	ren bensin	parafin	diesel
Sweden	bilbensin, blyfri bensin	kemiskt ren bensin	fotogen	diesel