

# trangia

## Multi-fuel burner

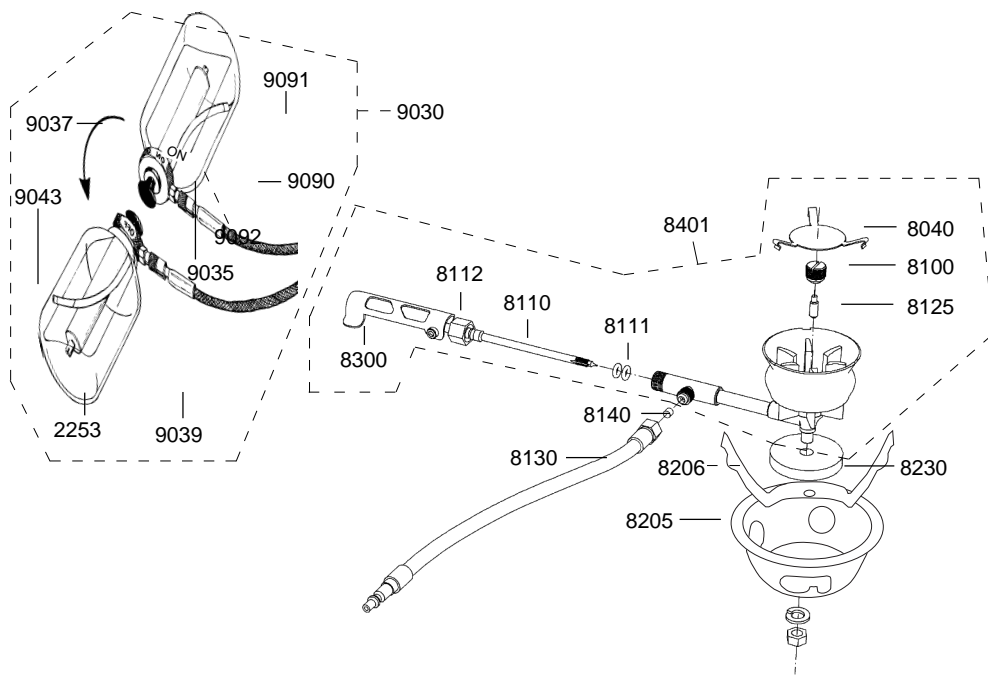
### INSTRUCTIONS MANUAL FOR USE



Art. No.:780001

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## PARTS OF THE BURNER

Art.No.	Description
781406	Fuel bottle 0.6 liter
782253	Pump valve with packing
788040	Burner plate
788100	Jet
788110	Valve spindle
788111	O-ring for valve spindle
788112	Nut for spindle
788125	Magic™ cleaning needle
788130	Fuel hose
788140	Fuel filter
788205	Burner cup Trangia
788206	Spring
788230	Priming wick
788300	Control handle
788401	Burner complete with spindle, control handle and burner plate
788415	Magic™ combi tool
602707	Stuff bag
789030	Pump unit complete
789035	Pump seal packing
789037	Pump rod complete with leather cup
789039	Fuel feed hose with strainer
789043	Pump leather cup
789090	Quick coupling, female
789091	Protection lid for quick coupling
789092	Rubber O-ring for quick coupling

## - IMPORTANT - SAFETY - WARNING -

### READ THIS PRIOR TO USING THE STOVE

To avoid injury, it is extremely important that you read, understand and follow all instructions and warnings in this manual before using the stove. Make certain that you comply with all instructions and warnings before you light the stove.

A. Study and understand the entire manual prior to using the stove. Get acquainted with all parts and functions of the stove before using it. Retain this manual for future reference. Review this manual regularly to maintain awareness of instructions and warnings. **Failure to follow the warnings and instructions in this manual could result in fire, property damage, serious injury or death!** Contact the place of purchase if you have any questions. Practice using and maintaining the stove prior to taking it on a trip.

B. **WARNING:** This stove consumes air (oxygen) and produces carbon dioxide. **DO NOT light or use the stove in unventilated areas** or indoors (e.g. in a tent, vehicle, boat, house or other enclosed area).

C. **WARNING:** The stove produces open flames. **DO NOT light or use the stove near flammable materials**, e.g., dry grass, leaves or pine needles. Always light and use the stove with caution. Minimum distance to flammable materials must be 1000 mm / 40" from side of stove and 1500 mm / 60" above stove.

D. **NEVER cover the stove and fuel bottle** with wind shields, rocks or similar which may cause overheating and damage the stove and fuel bottle. To avoid overheating, **NEVER use the stove near other lit stoves**, open fire or other heat sources.

E. **NEVER use other fuel kinds than those the stove is designed for. AVOID use of automobile (car) gasoline** as fuel for a stove. Automobile gasoline contains a lot of additives that are needed as lubricants etc. in a car engine. These additives are not burnt properly in a stove. Instead they escape as extremely health hazardous fuel vapor and exhaust fumes that may cause cancer. Furthermore, unleaded automobile gasoline may in some cases damage rubber components in seals, o-rings etc which could lead to fuel leaks on the stove. Use white gasoline, heptane and similar instead of car gasoline. Please note that any fuel containing benzene and other additives is extremely health hazardous and should be used only for short times.

F. **NEVER mix different kinds of fuel.** When changing fuels, empty the fuel bottle first.

G. **USE ONLY Trangia fuel bottles** with the stove. Non-Trangia fuel bottles may not seal the pump properly causing fuel leaks.

H. **NEVER fill fuel near a lit stove**, an open flame, a lit cigarette or any other source of ignition.

I. **NEVER keep a fuel bottle or flammable materials near a stove in use.**

J. **ALWAYS check for spilled fuel and fuel leaks** before lighting the stove. **DO NOT light or use the stove if leaks are found.** Leaks must be repaired prior to lighting or using a stove.

K. **NEVER leave a stove in use unattended. NEVER let children use the stove. ALWAYS supervise children** in the vicinity of the stove.

L. The stove is intended for outdoor cooking only. The stove is not designed for use with large capacity cookware. Maximum pot diameter is 220 mm / 9". Maximum pot weight including food/water/drink is 4 kgs / 8 lbs. **NEVER use the stove in any way other than as described in this manual.**

M. **ALWAYS place the stove on a flat, firm surface when using it. NEVER move or shake a lit stove.**

N. **NEVER relight a hot stove.** Let the stove cool off prior to priming and lighting again. A hot stove may vaporize liquid fuel and cause a dangerous fireball when relighted.

O. **ALWAYS let the stove cool off completely** before moving, disassembling or packing it.

P. **NEVER disconnect the quick coupling**, burner, fuel hose, pump and/or the fuel bottle when the stove is hot or lit, or in the vicinity of any spark, fire or heat source.

Q. **NEVER release air pressure by unscrewing the pump from the fuel bottle**, to avoid fuel spillage. Air pressure is released by flipping the fuel bottle over (when it is connected to the burner), see diagram. OFF should then be visible on the pump from above. During this operation, the fuel feed hose of the pump will start to feed air instead of fuel. Consequently, the stove will automatically turn off after a while and air pressure will escape through the burner jet.

R. **ALWAYS release air pressure by using Flipstop feature (see section V) prior to disconnecting**, packing or disassembling the stove.

## ABOUT FUEL TYPES

In order to avoid frequent clogging, we strongly advise the use of clean, fresh fuel of best quality. Due to its unique and patented burner the Trangia multi-fuel burner can use a widevariety of liquid fuels. We recommend the following with respect to choice of fuel:

### White gasoline (and similar)

We recommend white gasoline, heptane or chemically clean gasoline free of benzene, additives and cracked components for your stove. White gasoline is NOT the same as unleaded auto fuel.

A great alternative to white gasoline is environmental unleaded 4-stroke petrol. Please note that this is NOT the same as automobile gasoline / petrol. The environmental unleaded 4-stroke petrol is sold as a special fuel for garden machines e.g., lawn mowers. It is free of benzene, additives and cracked components.

White gasoline and similar fuels are clean and require very little priming, and is therefore easy to use. These fuels are however volatile and can ignite explosively. Handle with care and caution.

### Kerosene (Paraffin)

Kerosene is generally available world wide. It is less volatile than white gasoline, and therefore slightly safer to use. It does however require more priming, and is therefore slightly more difficult to use than white gasoline.

Bad quality kerosene may gel in cold climate. Therefore when using kerosene in winter climate, ensure it is good quality kerosene intended for stove and heater use. Refrain from using lamp oil and charcoal grill starters. Kerosene causes more clogging than white gasoline. Consequently, the stove may need frequent cleaning when using kerosene.

### Diesel fuels

Diesel for automobiles is normally inexpensive and widely available. It is less volatile than gasoline fuels, and therefore slightly safer to use. It is hard to prime, and is therefore more difficult to use than both white gasoline and kerosene. Diesel causes frequent clogging, and requires frequent cleaning. We therefore recommend that diesel is used for short periods only when no other fuel is available.

### Jet (aviation) fuel

Jet fuel can normally be used. Jet fuel may however contain health hazardous additives, and should therefore only be used when other fuels are not available. Avoid inhaling fuel vapor and avoid skin contact.

### Auto fuel

Avoid using automobile gasoline since it is health hazardous and extremely volatile. Also note that automobile gasoline contains additives that lead to frequent clogging of the jet. Use auto fuel only for short times.

### Rape (colza) seed fuel

Rape seed fuel is in some countries sold as an 'environmental alternative' to diesel fuel. The behaviour of rape seed fuel is similar to diesel fuel. We therefore recommend that rape seed fuel is used for short periods only when no other fuel is available.

## FUEL USAGE

Plan for 4 oz of fuel per person per day for cooking. 8 oz per person per day for melting water and cooking in winter.

## FILLING OF FUEL

Use only Trangia fuel bottles. When the stove is not in use, fuel is carried in the fuel bottle with the pump fitted (air pressure released) and the burner disconnected. Store the pump in an empty fuel bottle.

1. Fill the fuel bottle to 3/4 with fuel. Do not fill the fuel bottle completely. There must be room left in the bottle for the pump and for the air that is going to be pressurized by pumping. Wipe off fuel from the bottle if you should spill. We recommend that you use a funnel with filter when filling.

2. Keep the bottle upright and fit the pump tightly.

**TURN THE PAGE FOR FURTHER USER INSTRUCTIONS**

## I. SETTING UP THE STOVE

1. Unfold the burner control handle.

2. Slide the Magic™ Combi Tool under the burner back and forth a couple of times with the magnets facing the bottom nut. This will force the Magic™ Cleaning Needle to clear the burner jet.

3. Make sure the burner control handle is fully closed, turned fully clockwise towards (-). Ensure that the burner plate is fitted snugly in its position.

4. Connect the burner to the pump by connecting the fuel hose coupling into the quick coupling of the pump. Make sure that the quick coupling locks properly (usually noticed by a clicking sound), see diagram VII. Make sure that the bottle is laying down flat with the pump knob facing the same direction as the burner control handle. ON should now be read on the pump from above.

## II. PRIMING (PREHEATING) THE BURNER (PATENTED DESIGN)

In order to vaporize (gasify) the fuel, the burner must be primed (preheated). Trangia multi-fuel burner has a patented burner technology that radically reduces the priming time. The conductor ribs of the burner will quickly conduct heat from a priming flame to the valve house of the burner where fuel is vaporized. Insufficient priming will result in high, surging, yellowish flames. Please note that in cold and windy weather conditions, priming takes longer time than when it is hot and calm. Similarly, the priming time varies with fuel type. White gasoline needs shorter priming time (due to earlier vaporization) than kerosene and diesel.

1. Make sure that the control handle is fully closed (-).

2. Pump some 20-25 full strokes with the pump to build up air pressure in the fuel bottle. If the bottle is less than half full, it is necessary to pump another 20-25 full strokes.

3. Open the control handle ½ turn by turning it counter clock wise (+), close fully again after about two seconds. There will now be a small amount of fuel that has poured out of the burner jet and down on the priming wick. In cold and windy climate, and when using kerosene, diesel or rape seed fuel, it is necessary to keep the control handle open for about four seconds in order to release more priming fuel.

4. Check for fuel leaks on fuel bottle, pump, fuel hose, control handle and burner. NEVER prime or light the stove if a leak should occur.

5. Keep your head and body away from above the stove. Light the wick. The fuel contained in the wick will now burn and prime the burner.

Hint!: You can also use methylated spirit as priming fuel. Follow paragraphs 1-2 above. Then squeeze out some spirit onto the wick. Continue as described in paragraphs 4-5 above.

## III. LIGHTING THE STOVE

1. Keep your head and body away from above the stove. When the priming flame is down to a small flame (normally after about 15-30 seconds of priming, longer in cold and windy climate and when using kerosene, diesel or rape seed fuel) slowly open the control handle ¼ of a turn (+). The burner should now release fuel vapor that will ignite.

2. The stove should produce a controlled, blueish flame. If the burner is releasing liquid fuel that is burning with high, surging and yellowish flames, the burner is not sufficiently primed. Immediately close the control handle fully (-) and let the priming continue. When the priming flame is down to a small flame again, reopen the control handle ¼ of a turn (+). The burner should now release fuel vapor that will ignite.

3. When priming is sufficient, and the stove is producing a blue, steady flame, you can slowly open the control handle (+) until desired output is reached. If the burner starts to surge, turn down the control handle (-) until flame is blue and steady. Let it burn like this for about 20 seconds prior to increasing output again.

4. If necessary, pump a few times to increase output. The fuel bottle pressure is crucial for the output of the stove. There should be a firm resistance in the pumping when the operating pressure is reached. Do not over-pressurize since this will only lead to surging, yellowish flare-ups. Too low pressure causes low output and long boil times.

5. Maximum output is reached when the control handle has been opened (+) approximately 2 turns. Never open the control handle more than 2 turns. If the control handle is opened more than necessary, burner flames can turn yellowish which may lead to a loss in capacity to vaporize fuel.

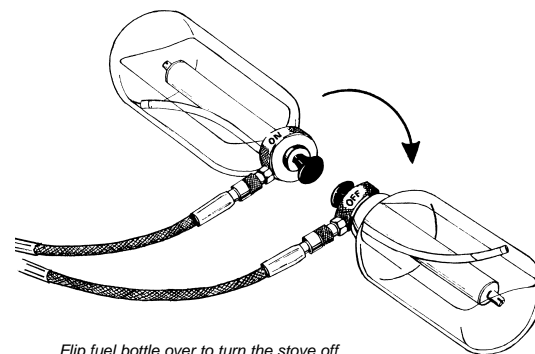
6. If burner flame ever starts to surge or flare up, always turn down the control handle (-) until a steady blue flame is obtained. Let the stove burn in this position for about 15 seconds prior to slowly increasing output (+) again.

7. Please note that the stove runs better with a pan or pot on top, then without. The burner is designed for cooking, not air heating.

## IV. TURNING OFF THE STOVE (FLIPSTOP)

If the stove is to be disconnected and not to be used for a while, air pressure should be released from the fuel bottle as described below. Wait until all pressure has been released. Let the stove cool off prior to disconnecting it. The Flipstop pump is designed to prevent fuel spillage.

1. Flip the fuel bottle over so that the bottle lays flat with the pump knob pointing in the opposite direction of the burner control handle. OFF should now be read on the pump from above, see diagram. During this operation, the fuel feed hose of the pump will start to feed air instead of fuel. All fuel that is left in the pump and burner units will be burnt and used, and after a short time (at full output, longer time on simmer) the stove will automatically turn off. When the flame has gone out, air pressure is automatically released through the burner jet, helping to clean the jet.



Flip fuel bottle over to turn the stove off and to release air pressure.

2. If the stove is to be used again within short (i.e. stove is not to be transported nor disconnected), you can turn the stove off by closing the control handle fully (-). Note that when turning the stove off in this manner, air pressure is still kept in the fuel bottle and fuel line. Consequently, the moment the control handle is opened (+) again, fuel will escape through the burner jet.

## V. CLEANING THE BURNER JET AND BURNER MAINTENANCE (MAGIC NEEDLE)

1. All kinds of fuel may contain impurities which may clog the jet. This is generally noticed by poor burner performance despite adequate pressure in fuel bottle. The burner is equipped with the Magic™ Cleaning Needle which can be used to clear the jet by sliding the Magic™ Combi Tool below the base of the burner. Hold the tool with the magnet bulb upwards, and slide it back and forth facing the base nut of the burner. Make a habit of cleaning the burner jet prior to setting it up, and prior to packing it. Do not keep the Magic Combi Tool below a hot burner or near other heat sources for long periods of time. Exposing the magnets on the Magic Combi tool to heat for more than 30 seconds at a time will reduce the magnetic force of the tool. The magnetic force is normally regained once the tool has cooled off.

2. If output still is poor, it may be necessary to clean both the jet and the cleaning needle. Remove the burner plate. Use the combi tool to unscrew the jet. Carefully remove the cleaning needle. Wipe off cleaning needle and the interior of the jet. Carefully prick the jet orifice using the cleaning needle. Reassemble cleaning needle, jet and burner plate.

3. If output is poor despite cleaning the needle and jet as described above, the grooves of the valve spindle may need cleaning and the fuel filter may need to be replaced. Open the control handle (+) as much as possible. Use the combi tool to unscrew the nut for the valve spindle. Unscrew and pull out the valve spindle. Carefully clean the grooves at the end of the valve spindle using a finger nail. Be careful not to damage the threads of the valve spindle.

4. The fuel filter is fitted at the fuel inlet of the burner where the fuel hose connects to the burner. Unscrew the fuel hose using the combi tool. Remove old fuel filter by puncturing it with e.g. a safety pin and levering it out. Fit new fuel filter by pushing it firmly into place. Tighten the fuel hose using the combi tool when refitting it. Carefully check for fuel leaks prior to lighting and using the stove again.

5. In order to avoid fuel leaks it is important to ensure that the O-rings sealing the valve spindle are free of cracks and/or damages. Periodically unscrew the valve spindle (as described in 3 above) and check O-rings. Replace the O-rings if they are cracked, worn or damaged.

## VI. GENERAL MAINTENANCE HINTS

1. Make a habit of keeping your stove clean. Wipe off dirty components with a cloth. If necessary, use a few drips of methylated alcohol/spirits for cleaning.

2. Should the pump leather cup get dry it may become stiff, crack and cause pump malfunction. Lubricate the leather cup from time to time, and especially when the stove has not been in use for a period of time. A dry leather cup is usually noticed by lack of resistance and/or lack of pressure build up when pumping. Unscrew the pump rod, pull it out and lubricate the leather cup with mineral oil. Carefully stretch out the cup in order to soften the leather cup.

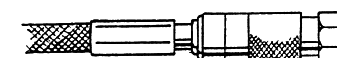
3. In very cold weather, rubber components and leather may stiffen and become fragile. If using the stove in cold weather, pay extra attention checking that seals, O-rings, packings and leather cups are free of damages that may cause fuel leaks. If cracked, or damaged, replace prior to lighting and using the stove.

4. Always ensure that the check valve of the quick coupling functions when connecting and disconnecting the pump and the burner. When disconnected, the metal ring of the quick coupling should lock in position towards the pump house. If the metal ring does not lock in the correct position, the quick coupling may leak fuel. To remedy, try to lubricate the quick coupling. Apply a few drips of oil into the quick coupling (see diagram). Then connect/disconnect the quick coupling a couple of times until function is normal. If lubricating the quick coupling does not help, the quick coupling must be replaced prior to lighting/using the stove again.



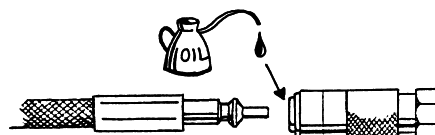
### **CORRECT**

Metal locking ring locks towards pump when burner and pump are disconnected.



### **CORRECT**

Metal locking ring should lock towards fuel hose and burner when burner and pump are connected.



### **MALFUNCTION!**

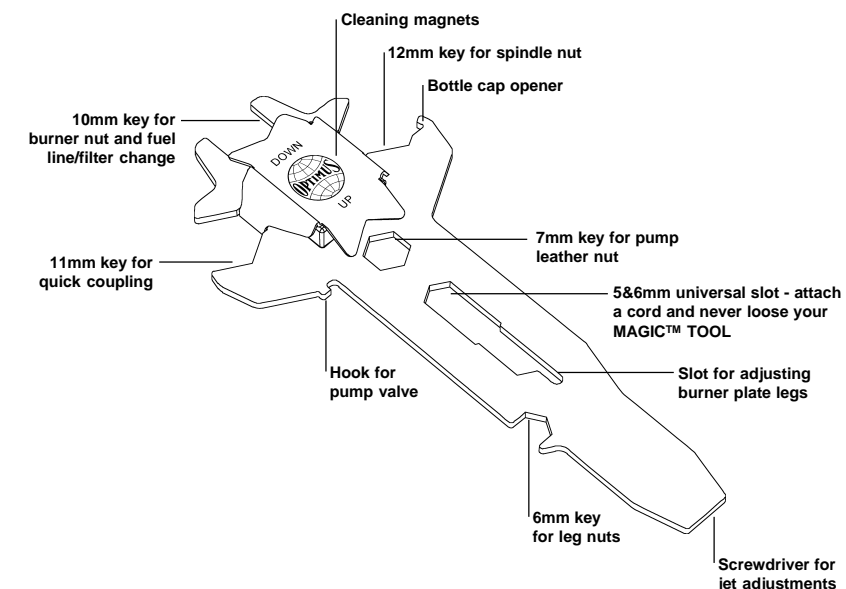
Metal ring does not lock in position when burner and pump are disconnected. **Remedy:** Oil the female part of the quick coupling.

5. Always apply the protective hood on the quick coupling of the pump when the stove is disconnected. Always protect the quick coupling ends from dirt.

6. Use only Trangia parts when replacing parts and repairing the stove. Never modify the stove.

## VII. THE MAGIC™ COMBI TOOL

The MAGIC™ COMBI TOOL has a number of features to meet your in-field service needs.



### **CAUTION:**

Keep the tool away from compasses, credit cards and other equipment sensitive to magnetic fields. The magnets in the tool are very powerful!

*Trangia wishes You Happy Trails!*