

TRAVELMate

Owner-refillable compressed gas cylinder with multi valve and removable shroud

Operating instructions



Imprint

Translation of the original operating instructions

ALUGAS TravelMate

Compressed gas cylinder with multi valve

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Changes

We are working continually on the further development of our products. Please understand that no claims may be derived from the information, illustrations, and descriptions contained in this documentation. Subject to errors and technical changes.

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1 Safety

1.1 Intended use

The intended use is the storage of liquefied petroleum gas (LPG/GPL) of fluid class 1 within the permissible operating range. Gas is extracted from the gas phase in order to power gas-consuming equipment in vehicles. The compressed gas cylinder has been designed, built and tested in accordance with, among other standards, EN 13110 in conjunction with AD 2000 and Directive 2014/68/EU (DGRL). It is installed in a cylinder compartment in accordance with EN 1949. It is filled exclusively via an external fill connector (flush-mounted Dutch Bayonet fill point refuelling) with LPG in accordance with EN 589.

1.2 Improper use

Improper use is prohibited and can cause injury and damage. The following is not permitted in particular:

1. Operation as a loose liquefied gas bottle outdoors/outside the cylinder compartment.
2. Filling while removed (prohibited in the EU).
3. Direct filling at the cylinder without an external fill connector.
4. Using natural gas/CNG or exceeding the 80% fill level.
5. Lubricating/removing the multi valve or replacing it without consulting the manufacturer.

1.3 Qualifications

1.3.1 Owner/operator

Responsible for safe operation, organisation of periodic testing (e.g. G 607) and documentation.

1.3.2 User

Performs routine tasks in accordance with these operating instructions (refuelling, on/off, visual inspection).

1.4 Documentation and test records

All documents and test records belonging to the product must be handed over if the product is sold on. These also include:

- Operating instructions
- Certificate of last gas system inspection
- CE Declaration of Conformity for the tank

Please also observe the information in chapter Maintenance, testing & schedule on page 21.

1.5 Warning structure

Classification of warnings is based on ISO 3864-2 and ANSI Z535.6 using the key words:

- “Danger”, “Warning” and “Caution” for injury
- “Attention” for damage
- “Note” to convey general information

In this documentation, safety notices are categorised and shown as follows:



DANGER!

Indicates a hazardous situation with **high risk**, which will lead to serious injury or death if not avoided.



WARNING!

Indicates a hazardous situation with **moderate risk**, which may result in serious injury or death if not avoided.



CAUTION!

Indicates a hazardous situation with **low risk**, which may result in minor to moderate injury if not avoided.



ATTENTION!

Indicates a possibly hazardous situation, where the product or surrounding objects could be damaged if the situation is not avoided.



NOTE!

Non-compliance with the measures described could possibly lead to damage to machinery or the product.

1.6 Mandatory, prohibitory and warning signs used

Symbol (placeholder)	Meaning
	General hazard symbol
	Warning of low temperature
	Warning of explosive substances
	General mandatory sign
	Follow the instructions for use
	Use hand protection
	Use eye protection
	NOTE

1.7 Safety notices

1.7.1 Safety notices for avoiding injury

If gas/air mixtures are ignited through ignition sources, this may result in death or serious injury caused by explosion or fire.

- Avoid ignition sources (fire, sparks, smoking).
- Ensure intensive ventilation of the area.
- Clear away any flammable substances.
- Secure the area.
- Notify emergency services if the situation requires.

Incorrect refuelling with natural gas/CNG will produce unacceptable pressures, which could lead to death or serious injury as a result of component failure.

- Always use LPG in accordance with EN 589.
- Do not confuse LPG with CNG. Check the labelling on the filling pump and adapter.
- If in doubt, stop refuelling immediately.

If unauthorised persons actuate valves or change settings, this may lead to serious injury as a result of uncontrolled gas discharge.

- Cordon off the work area to prevent access by unauthorised persons.
- Close equipment valves before testing/inspection or refuelling work.

1.7.2 Safety notices for avoiding damage

If LPG is confused with CNG or other media, this could lead to system damage due to overpressure or incompatibility and result in damage to the vehicle and refuelling station.

- Always use LPG in accordance with EN 589.
- Check the labelling on the filling pump, adapter and vehicle connection before connecting up.
- Stop the process if the labelling or connection is not correct.

If dirt, swarf, oil or grease gets into connectors and fittings, this can cause leaks, valve blockages or malfunctioning of the overfill prevention device.

- Keep connections, sealing surfaces and threads clean and free from grease and oil.

If warning labels or notices are missing or illegible, this can lead to incorrect operation, incorrect refuelling or damage to the station or vehicle.

- Affix warnings and multi-language labels/signs in a visible place on the cylinder compartment, interior and fill connector.
- Clean and degrease surfaces before affixing labels.
- Check adhesion and visibility.
- Replace damaged labels.

If unapproved adapters, hoses or fittings are used, this may result in incompatibility, premature wear or damage to the system.

- Always use approved components and ALUGAS recommendations.
- Use adapters with a sintered filter to avoid dirt.

1.8 Normative references/legal bases (excerpt)

- EN 1949 – LPG systems in leisure vehicles and accommodation purposes in other vehicles
- EN 589 – Fuels – LPG
- DVGW Worksheet G 607 – LPG systems in vehicles (expertise)
- StVZO §35c – LPG systems. Operation of shut-off devices in transit
- Directive 2014/68/EU – Pressure Equipment Directive (DGRL)
- ANSI Z535 – Series for Safety Signs and Color (Signal Words/Layouts)

1.9 Disclaimer of liability and warranty

1.9.1 Disclaimer

Please be aware that ALUGAS accepts no liability for damage resulting from improper operation or from failure to observe this documentation or relevant regulations.

Do not carry out unauthorised work on compressed gas cylinders, valves, safety devices and coupling mechanisms. Non-compliance voids any liability.

Do not perform hot work (welding/grinding) on LPG components. We accept no liability for any damage resulting from this.

1.9.2 Warranty disclaimer and limitation

Warranty claims are valid only in the case of non-conformances that can be proven to be due to material or manufacturing faults, and only within the statutory or agreed period.

Please note that wearing parts (e.g. hoses, seals, regulators) are subject to ageing. Normal wear and tear does not constitute grounds for a warranty claim.

Always use the product solely for its intended use. Improper use will void the warranty.

Consult ALUGAS before replacing a valve. Unauthorised spare parts or work will void the warranty.

2 Transportation, storage and disposal

Transportation of the compressed gas cylinder in its removed state is only permissible with valve protection (shroud) fitted and in an empty state. Otherwise, this should be carried out by a specialist contractor in accordance with applicable regulations.

3 Description

ALUGAS TravelMate is a refillable compressed gas cylinder in the form of a bottle with a multi valve and 80% overfill prevention device for use in vehicles with LPG systems for combustion purposes. Extraction occurs from the gas phase.

3.1 Area of application/medium

- Medium: Liquefied gas (LPG/GPL) in accordance with EN 589 (fuel).
- Equipment type: Pressure device for self-filling at public refuelling stations (with 80% fill limit).

3.2 Components

3.2.1 Coupling kit components

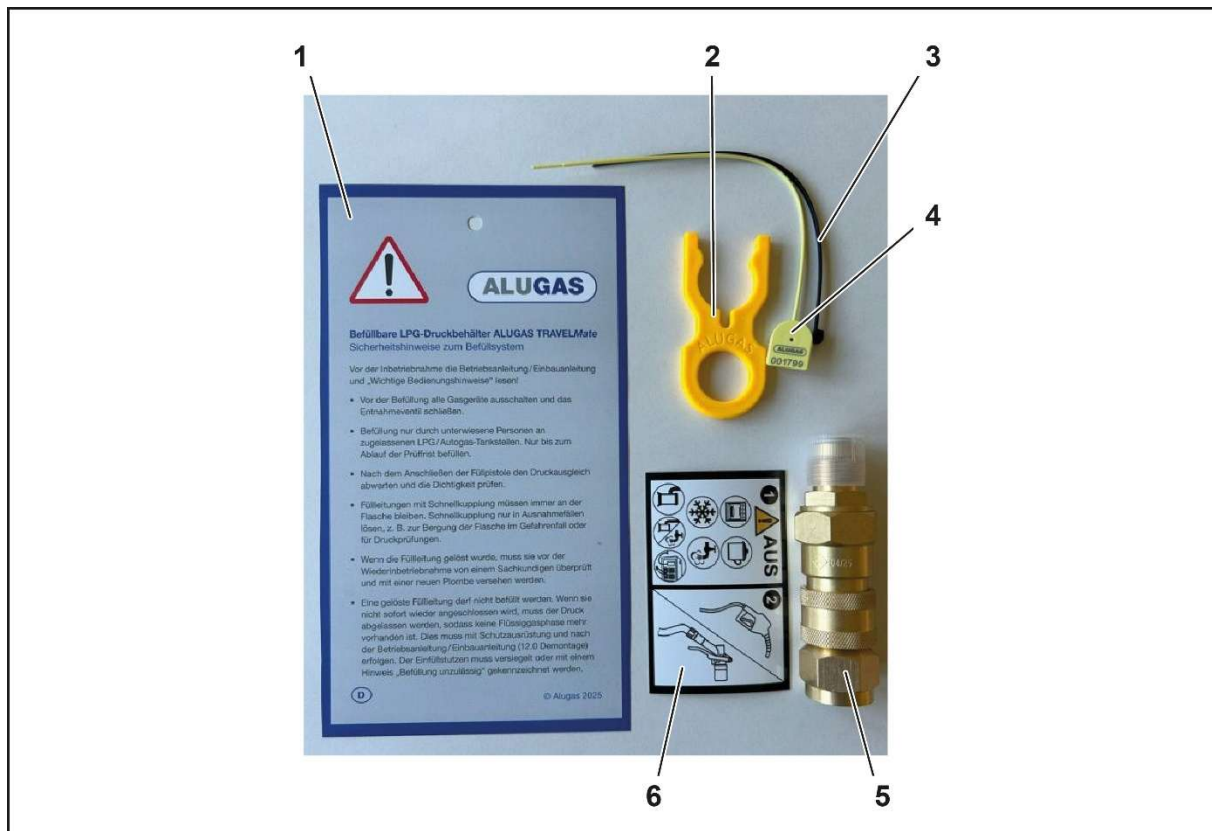


Illustration 1

- | | |
|---------------------|--|
| 1. Coupling warning | 4. Tamper-proof pull-through seal |
| 2. Guard clip | 5. ALUGAS quick-connect coupling for LPG |
| 3. Cable tie | 6. Refuelling label |

3.2.2 Components of the multi valve and shroud (capacitive fill level indicator)

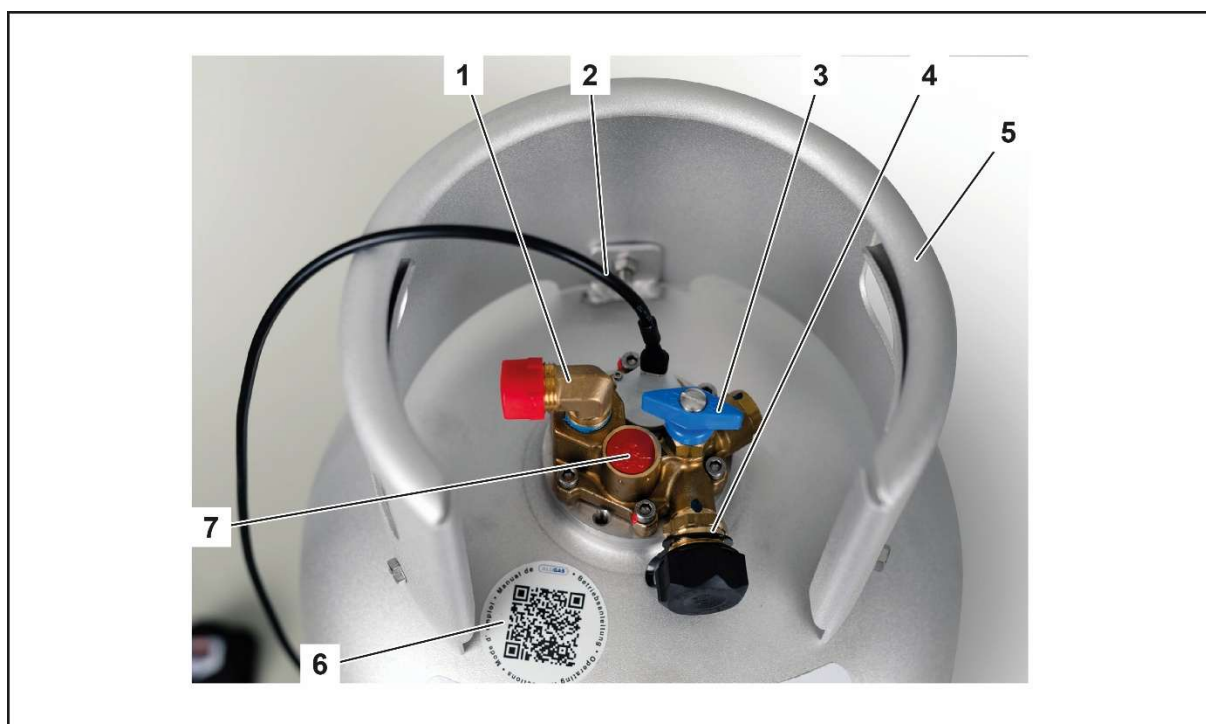


Illustration 2

- | | |
|--|------------------------------|
| 1. Fill valve | 5. Valve protection (shroud) |
| 2. Cable for capacitive fill level measurement | 6. QR code |
| 3. Gas shut-off valve | 7. Safety valve |
| 4. Outlet connector | |

3.2.3 Components of the multi valve and shroud (analogue fill level indicator)

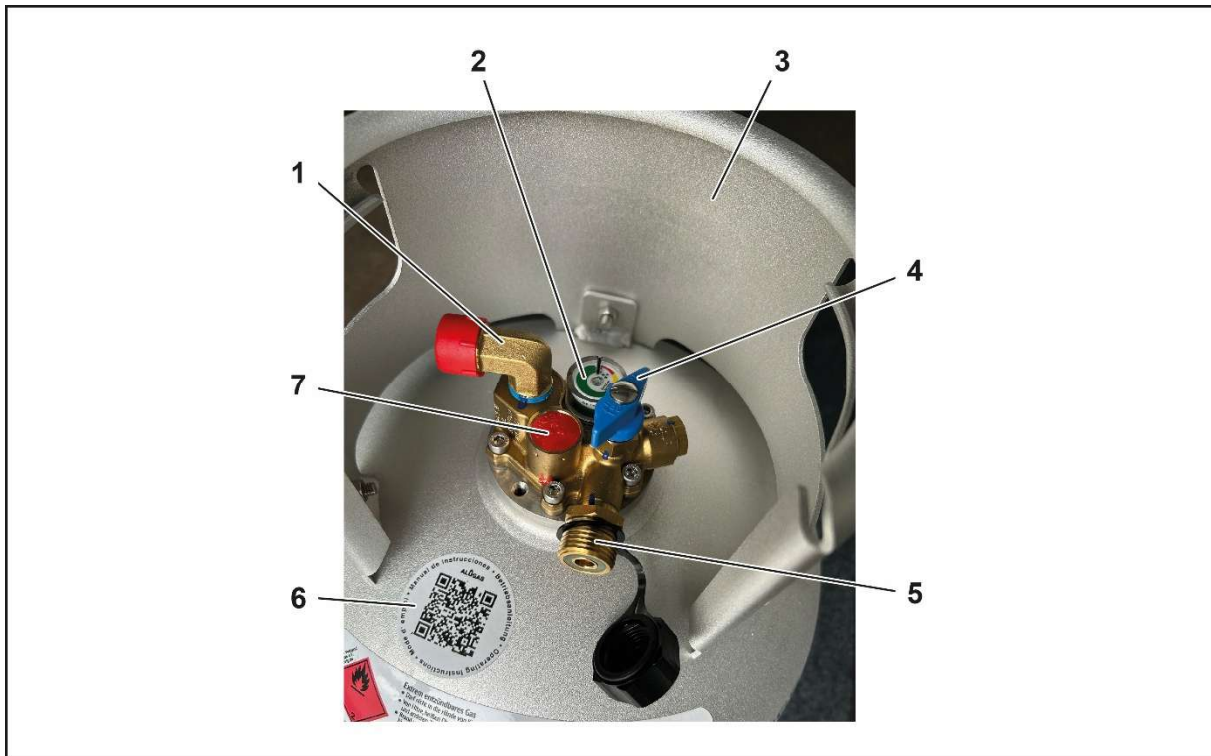


Illustration 3

- | | |
|------------------------------|---------------------|
| 1. Fill valve | 5. Outlet connector |
| 2. Fill level indicator | 6. QR code |
| 3. Valve protection (shroud) | 7. Safety valve |
| 4. Gas shut-off valve | |

3.3 Valve protection (shroud)

The valve protection (shroud) (Illustration 2/5) and (Illustration 3/3) protects the valves during removal, transportation, storage and disposal of the compressed gas cylinder. While installed, the compressed gas cylinder can be operated without the valve protection (shroud) fitted.

3.4 Gas shut-off valve

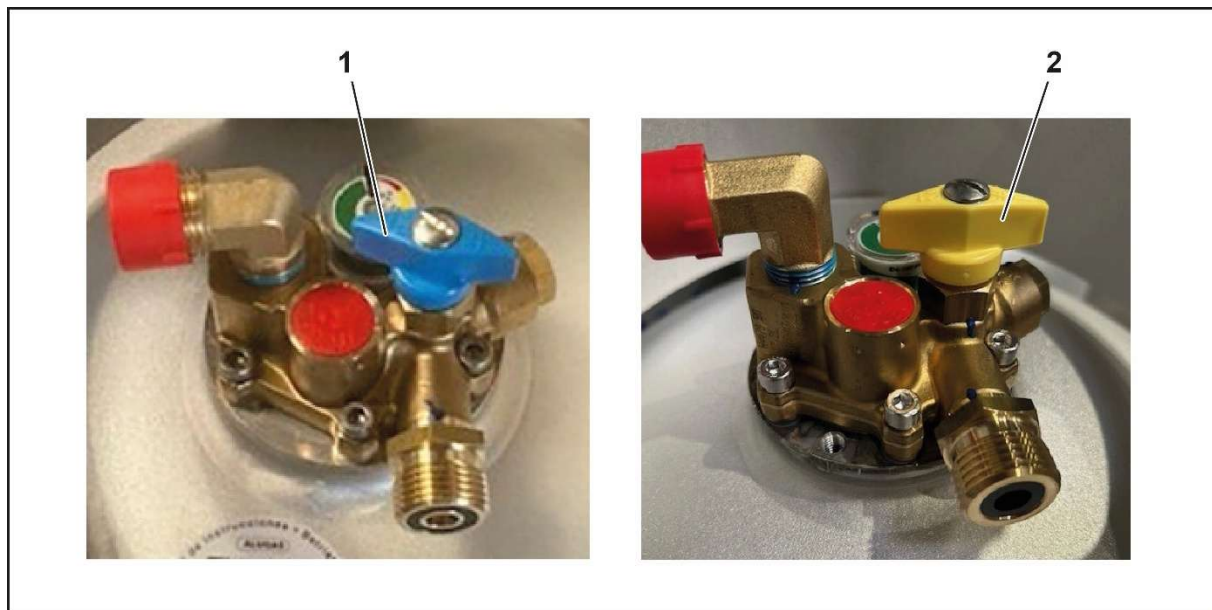


Illustration 4

1. Blue valve:
Used in Germany
Outlet connector thread 21.8 mm

2. Yellow valve:
Used, for example, in Switzerland,
France and Belgium
Outlet connector thread 21.7 mm

3.5 Technical data

Designation:		“TRAVELMate” pressure device for self-filling in cylinder form		
Main dimension:		Ø 300 mm		
Participating notified body:		TÜV Süd Industrie Service GmbH (0036)		
Dimensions				
Volume (litres)	Height (mm)	Weight incl. valve (kg)	Part no.	Serial no. (manufacturer code)
27.2 l	599	6.6	TF272-MV	See ID certificate for declaration of conformity
33.3 l	690	7.5	TF333-MV	See ID certificate for declaration of conformity
Pressure chamber				
Fluid designation:	LPG			
Fluid group:	1			
Max. allowable temperature (TS): °C	65			
Min. allowable temperature (TS): °C	-40			
Allowable pressure (PS) bar	20			

3.6 Labelling

1. Warning label in cylinder compartment (Illustration 5/1)
2. Multi-language label (Illustration 5/2)
3. Warning - Caution flammable (Illustration 5/3) on the compressed gas cylinder shoulder
4. Coupling warning (Illustration 5/4)
5. Labelling on base ring (Illustration 5/5).

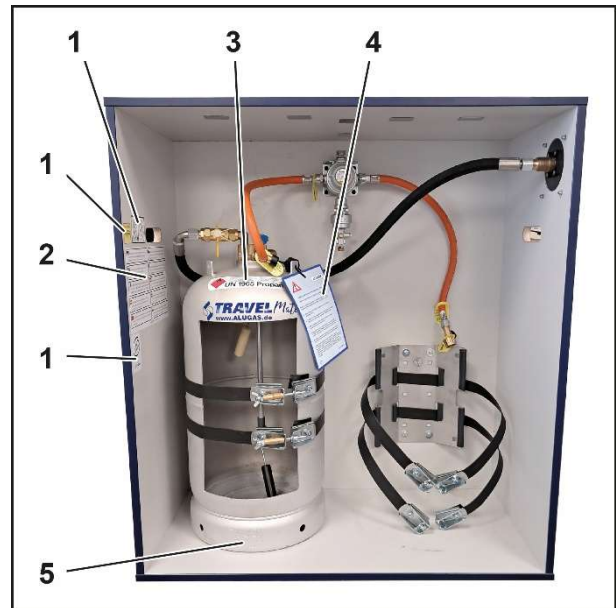


Illustration 5

3.6.1 Warning label in cylinder compartment

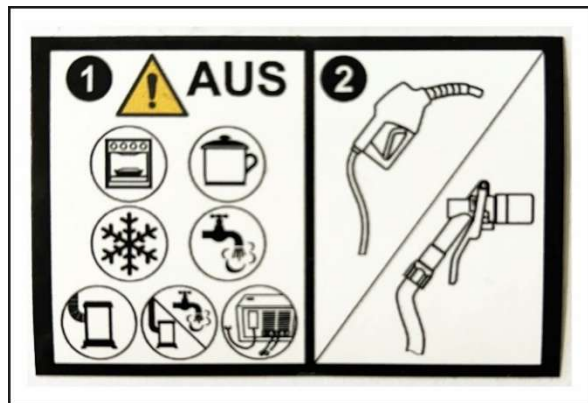


Illustration 6

Description

3.6.2 QR code



Illustration 7

3.6.3 Coupling warning



Illustration 8

3.6.4 Multi-language label

 Unsere TRAVELMate ist ausgestattet mit einem 80% Füllstop-ventil, d. h. der Befüllvorgang wird automatisch beendet, wenn ein Füllstand von 11 kg (≈22 l) / 14 kg (≈28 l) erreicht ist.	 Naše TRAVELMate je vybavena 80 % uzavíracím ventilem, to znamená, že proces plnění se automaticky ukončí při dosažení úrovně naplnění 80 %. 11 kg (≈22 l) / 14 kg (≈28 l).
 Our TRAVELMate comes with an 80% fill stop valve; this means filling is automatically ended when a fill level of 11 kg (≈22 l) or 14 kg (≈28 l) is reached.	 Notre TRAVELMate est équipé d'une vanne d'arrêt de remplissage 80% : le remplissage s'arrête donc automatiquement quand un niveau de remplissage de 11 kg (≈22 l) / 14 kg (≈28 l) est atteint.
 La nostra TRAVELMate è dotata di una valvola di arresto del riempimento all'80%. Ciò significa che il processo di rifornimento viene automaticamente interrotto al raggiungimento di un livello di riempimento di 11 kg (≈22 l) / 14 kg (≈28 l).	 Nuestro TRAVELMate está equipado con una válvula de parada de llenado del 80%, es decir, el proceso de llenado se detiene automáticamente cuando se alcanza un nivel de llenado de 11 kg (≈22 litros) / 14 kg (≈28 litros).
 Vores TRAVELMate er udstyret med en 80% påfyldningsstopventil, d.v.s. påfyldningsprocessen afsluttes automatisk, når der er nået et påfyldningsniveau på 11 kg (≈22 l) / 14 kg (≈28 l).	 Vår TRAVELMate är utrustad med en 80 % fyllnadsstoppsventil, vilket innebär att påfyllningen avbryta automatiskt när en fyllnadsnivå på 11 kg (≈22 l) / 14 kg (≈28 l) har uppnåtts.
 TRAVELMate ürünümüz %80'lik bir dolum durdurma valfi ile donatılmıştır, yani 11 kg (≈22 l) / 14 kg (≈28 l) oranında bir dolum seviyesine ulaşıldığında, dolum işlemi otomatik olarak sonlandırılır.	 Nasz TRAVELMate jest wyposażony w zawór zatrzymujący napełnienie na poziomie 80%, tzn. proces napełniania jest automatycznie przerywany, gdy osiągnięty zostaje poziom napełnienia 11 kg (≈22 l) / 14 kg (≈28 l).

ALUGAS here i feel confident

Illustration 9

4 Use



DANGER!

Danger caused by non-compliance with safety instructions!

Failure to observe safety instructions can lead to situations with the product that could cause injury and damage.

- Strictly observe all safety measures and instructions, see chapter Safety.
-



DANGER!

Risk of fire and explosion caused by gas/air mixtures!

Gas/air mixtures can ignite, which may result in death or serious injury.

- Avoid all ignition sources (naked flame, sparks, smoking).
 - Ensure intensive ventilation of the work area.
 - Stop work immediately if you smell gas
-



WARNING!

Risk of cold burns!

Escaping liquid gas can cause frostbite, and as a result, lead to serious skin and eye injuries.

- Always wear protective gloves and safety glasses when disconnecting or relieving the pressure
-



WARNING!

Danger when work is carried out by unqualified personnel!

If work is carried out by unqualified personnel, there is a risk of injury or damage.

- Work on the product should only be carried out by trained and certified skilled specialists, who have been trained to work on the product.
 - All work on electrical, liquid and compressed air systems must be carried out in accordance with national and local legislation, regulations and guidelines. Non-compliance may result in death, serious injury or equipment damage
-

4.1 Refuelling/filling

1. Close the gas shut-off valve (Illustration 10/1).

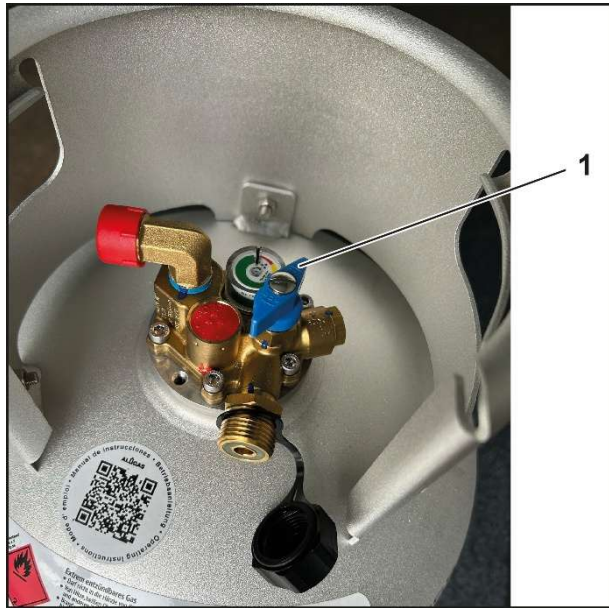


Illustration 10

2. Open the fill connector (Illustration 11/1).



Illustration 11

3. Connect an appropriate adapter (Illustration 13/1) to the fill connector (Illustration 12/1). To prevent contamination entering the system, ALUGAS recommends using an adapter with a sintered filter.
4. Connect the fuel nozzle to the adapter (Illustration 13/1) and lock the fuel nozzle in place. Pressure equalisation can be heard as a short hiss.
5. Activate the deadman's switch and hold it down to fill the compressed gas cylinder. The filling process stops. When the maximum fill level is reached, the filling process ends automatically.

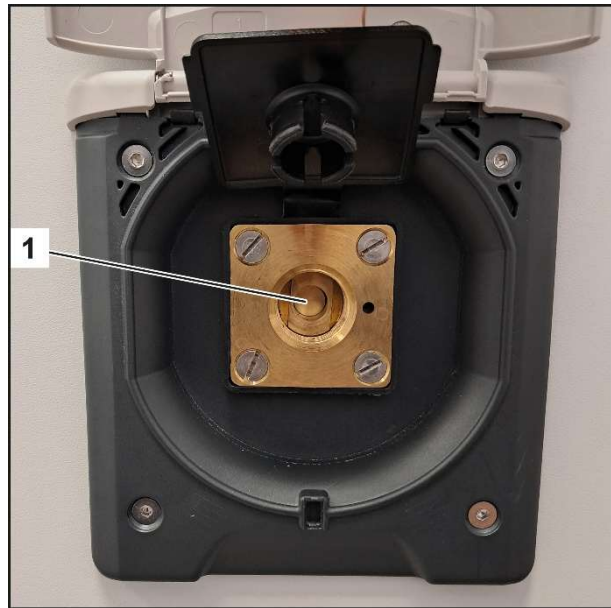


Illustration 12



NOTE!

Please note: there will be a short, sharp, loud hiss!

6. Release the fuel nozzle lock.
7. Remove the fuel nozzle from the adapter (Illustration 13/1).



Illustration 13

8. Remove the adapter (Illustration 13/1) from the fill connector (Illustration 14/1).

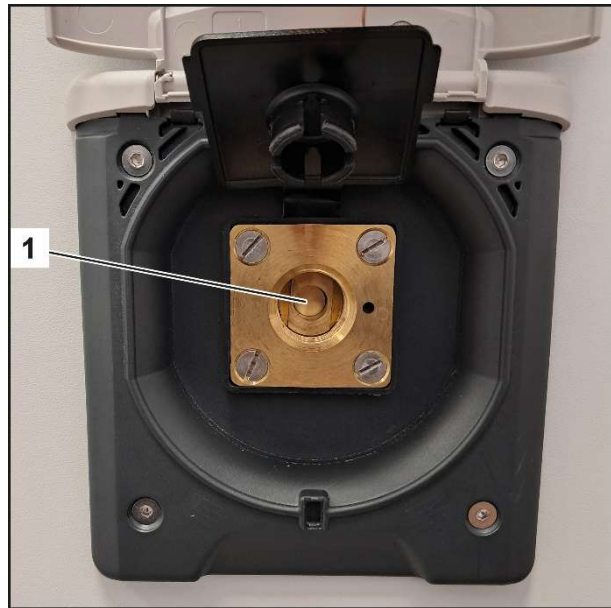


Illustration 14

9. Close the fill connector (Illustration 15/1).



Illustration 15

10. Slowly open the gas shut-off valve (Illustration 16/1).
11. Start appliances as specified by the manufacturer.



Illustration 16

When refuelling or extracting gas, a sudden increase in flow can cause the hose rupture protection mechanism to close.

Use

To shut off the hose rupture protection mechanism, close and open the gas shut-off valve slowly. Opening it too quickly will trigger the protection mechanism again

4.2 What to do in the event of an incident

Incident	What to do
Smell of gas/leak	Turn off consumer equipment, ventilate, avoid ignition sources, secure the area, call emergency services if necessary.
Vent via the safety valve	Check temperature/fill level; after venting, the valve generally closes automatically.
Incorrect refuelling suspected	Stop the process, notify the refuelling station, test the system.

5 Maintenance, testing & schedule

Area	Measure	Interval/reason	Responsibility/standard	Note	Carried out by:
Gas system – periodic testing	Safety/leak-tightness/function testing	Private: every 2 years (generally G 607) Commercial: every 2 years (acc. to BetrSichV)	G 607 BetrSichV Annex 3 section 2 on liquefied gas systems	Keep testing/inspection records	Specialist contractor
TRAVELMate compressed gas cylinder	Regeneration (check, valve system replacement)	Every 10 years	Manufacturing process	Return to manufacturer	Specialist contractor
Equipment (e.g. regulator, hoses)	Replacement	Generally every 10 years	Manufacturer/DVGW specifications	Document age/condition	Specialist contractor
System after work	Visual inspection, leak-tightness check and function testing	After removal/change before recommissioning	G 607 / internal approval	Recommissioning only after passing checks/testing	Specialist contractor
Duty of owner/operator	Keep to schedule & keep records	Continuous	Responsibility of owner/operator	Keep inspection log/records up to date	Owner/operator

For the main inspection, the following documents must be submitted:

- Certificate of the most recent gas system inspection
- CE Declaration of Conformity for the tank

In the commercial sector, inspection records for the main vehicle inspections according to §60 StVZO must be submitted in the form of the templates according to Annex of Principle 310-003 “Test record of the testing of liquefied gas systems for combustion purposes in or on vehicles” of the German Social Accident Insurance e. V. (DGUV).

In the private sector, corresponding test records in accordance with G 607 must be submitted.

6 Troubleshooting

Issue	Possible cause	Measure (user)
Cylinder not filling	Adapter/nozzle not connected correctly	Loosen connection and reconnect; if necessary, switch to a different refuelling station
Fill very slowly	Dirt/filter	Check adapter/FILTER, clean; check position of nozzle
No gas extraction	Hose rupture protection mechanism active	Close shut-off → open slowly
Gas coming from fill connector	Dirt in non-return valve	Fill in bursts; use filter; arrange for testing/inspection by specialist contractor
Vent via the safety valve	Temperature/fill level high	Allow system to cool down or insulate it; generally closes automatically after venting
No display on fill level indicator	Mechanical/electrical components loose/without power supply	Check installation is stable; check connectors/cables

7 Other applicable documents

- EN 1949
- EN 589
- DVGW Worksheet G 607
- UN-R 67
- StVZO § 35c
- DGUV Rule 110-010
- Directive 2014/68/EU (DGRL)
- Manufacturer documents for consumer equipment.