TF 65/20 E · TF-W 65/20 E

DIN EN ISO 9001:2008

Instruction Manual

iGEBA®

Thermal Fog Generator

DIN EN ISO 9001:2008

Manufacturer and Distributor:

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Mode of operation

The Fog Generator operates on the principle of the one-sided open jet-tube (Schmidt-Argus-Tube) with a valve at the inlet side (carburetor) and an open outlet. This system with carburetor, mixer tube, combustion chamber and resonator constitutes an acoustical oscillation system at a certain frequency. This Fog Generator works at an operating frequency of approx. 100 cycles/second. Liquids (chemical formulations, oils, etc.) can be fed into the pulsating gas stream of the resonator at the outlet end. The high frequency of the gas allows the application and break up of solutions, otherwise susceptible to combustion or decomposition, due to the very short time they are exposed to the hot gas stream. The high gas temperature results in visible fog by means of evaporation of a certain component of the fog solution, e.g. oils.

CE marking

CE

The shipped version of this device complies with the requirements of the EEC directives 89/336/EEC “Electromagnetic compatibility” and the machine directive 2006/95/EG.

IGEBA Fog Generators and ULV Aerosol Generators are in Germany solely manufactured by IGEBA Geraetebau GmbH. Original IGEBA products are marked with a hologram.

Table of Content **Page**

1. Notes on the instruction manual

This manual is for the user of the high-performance fog generator TF-65/20 E essential for proper operation.

The fog generator is in this manual referred to as TF-65.

The instruction manual must be read, understood and observed by the responsible operating personnel. Only with knowledge of this instruction manual, mistakes, damages and injuries can be prevented and a proper operation can be guaranteed.

The instruction manual should be stored near the TF 65 and be accessible for the operating and maintenance personnel.

IGEBA Geraetebau GmbH assumes no liability or any warranty for damages and malfunction due to non-observance of this instruction manual.

Special notes are defined as follows:

Operation procedures that need to be strictly observed to prevent risk and damage to persons.

Beware of heating on the fog generator! Do not touch the hot parts of the fog generator; it may result in injuries and burns.

Explosion hazards / life threatening injuries - Gasoline and any other material marked with it.

NOTE

Operating procedures that need to be strictly observed to prevent damages or destruction of the fog generator.

Read the instruction manual!!

Technical information which needs to be particular observed by the user of the fog generator.

DIN EN ISO 9001:2008

Wear ear protection!

The operation of the fog generator without ear protection may damage your hearing.

Wear respiratory protection!

A face mask with respective filter may be required depending on the applied active agent. Further information may be obtained from the attached data sheet of the active agent.

Wear protective clothing! Protective clothing must be worn without any exception if required by guidelines and notes of the manufacturer of the active agent.

Please observe the notes regarding active agents that may cause burns and take all necessary measures.

The user must ensure that used substances will not be inhaled nor swallowed nor in contact with skin, in particular for children and persons who are not familiar with it.

Persons with cardiac pacemakers may not operate / touch the device. (See product liability)

Fire hazard

A fire extinguisher must be in reach to immediately take measures in case of fire.

Used batteries must be disposed separately. Never dispose of used batteries or electronic parts with household waste.

In order to reduce the risk of stumbling, no objects may lay or stand in the vicinity of the machine.

The First-Aid-Kit must be in reach to ensure first aid in case of injuries.

The pictures are numbered per chapter consecutively. Some pictures are provided with legends. References to pictures in the text e.g. (Picture 3 Pos. 2) stand for:

Picture 3 = Picture 3

Pos. 2 = Position 2 in the legend of picture

SP list = Spare part list page….

For technical problems that are not part of this manual, you may contact the customer service at +49(0)8375/9200-0 as well as your local distributor.

2. Safety instructions - product liability

General

The TF-65 employs state of the art technology and complies with accepted safety standards. However, inappropriate operation may cause danger to life and limb of the user or third parties or damage the fog generator and other assets.

The TF-65 may only be used in proper technical condition as well as for its intended use and in compliance with safety notes and the instruction manual! In particular, malfunctions that may affect the safety must be repaired immediately or be reported to IGEBA Geraetebau GmbH.

The TF-65 is intended exclusively for fogging suitable solutions. Another use is not intended.

IGEBA Geraetebau GmbH is not responsible for damages due to inappropriate use.

The user solely bears any risk.

The intended use includes also the compliance with the instruction manual and care and maintenance conditions.

The instruction manual needs to be ready to hand at the work location of the fog generator!

In addition to the instruction manual, the local regulations and other mandatory rules for accident prevention and environmental protection must be applied and observed!

Any personnel on the fog generator must read the instruction manual and, in particular, this chapter "Safety instructions" prior to start of their work. This applies especially for the users of the machine.

No modifications or alterations are permitted unless it is clearly indicated in this instruction manual. This applies also for the mounting and set up of safety devices.

Spare parts must comply with technical requirement as specified by the manufacturer. This is only guaranteed with original spare parts from IGEBA-Geraetebau GmbH.

Only employ trained, instructed and appointed personnel. **Clearly define the responsibilities of the personnel for the operation!**

Safety instructions for the operation

Refrain from any risky operation method.

Stop and secure the fog generator in case of any malfunction! Malfunction must be repaired immediately.

Observe switch on and off procedures and control indicators according to the instruction manual!

Smoking is strictly prohibited in areas where gasoline is handled. Open flame or other heat sources shall not be in close proximity.

Never refuel if the machine is hot nor place the machine near flammable materials/ media. There is a fire and explosion hazard / danger of life threatening injuries.

Do not spill gasoline during filling of petrol tank. Only use IGEBA funnel with strainer to refuel. Wipe spilled gasoline immediately.

Never operate the fog generator near flammable materials or gases. There is a risk of fire and explosion as the fog generator operates with an open flame in the resonator. Prevent the contact of the hot fog tube with other objects as these may be damaged or burn due to the intense heat.

The fog generator **must not be used** in spaces/ rooms with flammable particular matter (e.g. grain silos) as there is a hazard of dust explosions.

The use in closed rooms with open flames, candles, hot machines or electronic devices is prohibited. Fire hazard.

If used in closed rooms with an overdose of active agent, an ignitable mixture may occur.

The dosage of flammable parts of deposited fog amount must not exceed the following limits per 1.000 m³.

a.) Fog additives:		**b.) Fuels, white oils**	
Nebol	3.0 l	Vegetable oils	2.5 l
Glycerine	2.5 l	Diesel/heating oil	2.0 l
Ekomist	2.0 l	Kerosene	2.0 l
Ethylene glycol	2.0 l	Petropal	2.0 l
Diethylene glycol	2.0 l	Shell Risela 15	1.5 l
VK 2 special	2.0 l		

The here quoted limits are sufficiently below non-flammability, however, higher than limits quoted in dosage tables. We recommend that only the volume of fog solution calculated to be required for the enclosed area to be treated should be placed in the solution tank of a machine.

The fog generator is generally to be operated under supervision.

In particular, information on dosage and safety measures by the solution manufacturer must be observed. Wipe spilled solution immediately. The user must wear protective glasses and gloves when handling acid solutions. Dispose solution residuals always properly. Thereby, legal regulations regarding storage and disposal of active agents must be observed and required body safety measures be taken.

Always wear ear protection for any work with the fog generator. The fog generator produces a noise level of < 99 db(A).

Persons with cardiac pacemakers may not operate / touch the device.

Always wear appropriate respiratory protection and protective clothing during operation. Use in closed rooms a full mask with combined filter against organic vapours and active agents. A full mask, protective clothing and gloves must be worn as well as any other body protective measures are taken when handling acidic active agents.

In stationary operation the fog generator must be placed horizontally, on solid underground, in a tilt and slip resistant manner.

Do not touch the hot parts of the fog generator as this may cause serious skin burns. The fog tube, carburetor assembly and adjacent parts will become extremely hot. Also the protection against accidental contact heats up by radiation (Picture 1 Page 15). Contact with theses parts must also be avoided.

Repairs and maintenance should only be carried out with the fog generator cooled down and switched off. Removed safety devices must be reinstalled after completion of repair works.

Never use the fog generator if not in proper condition.

Never orient the fog tube directly to walls or objects. Keep a distance of at least 3 m.

In case the fog generator stops due to malfunction or lack of fuel, close the solution tap immediately (tap shows horizontal – see page 30 „Note“). Incline the fog tube slightly down so that the remaining solution can escape.

Solution may ignite. Prepare an appropriate container to collect the solution.

Never start the fog generator if the swirl vane is detached from the mixing chamber (carburetor - Picture 1 page 15) but still connected to the ignition coil. If fuel tank is open, ignition sparks could inflame fuel vapour. Danger of explosion!

Rooms that will be fogged must be marked as forbidden areas and must be protected against access by unauthorized persons, especially children. Prior to fogging it must be ensured that the room is empty of people and animals.

Make sure that a fire extinguisher is available, before you start working.

Release the remaining gasoline and solution from the cooled machine and remove the batteries from the fog generator for prolonged disuse.

Containers with solution, gasoline cans und the fog generator must be stored out of reach of children and unauthorized parties.

Regard the unit as your personal fog generator that is your responsibility. Read and observe the instructions of this manual.

Instructions of the manufacturer regarding mixing of active agents must be strictly observed to prevent undesired chemical reactions.

Instructions of the manufacturer regarding transport, storage, etc. must be observed for filled solutions tanks.

Danger of burns / fire by stumble.

The walking direction should be contrary to the fogging direction and sufficient visibility must be ensured.

Other and not permitted applications and modifications of the unit beside the official guidelines.

No modifications of the unit are permitted without technical clarification with IGEBA Geraetebau GmbH and/or their briefing.

The unit must no be used as flame thrower and must not be modified in such way. The device must never be used against people and animals.

The device must not be operated under the influence of alcohol, medicine or drugs.

Furthermore, objects, body parts, animals etc. must not be inserted in the openings or leaned on hot parts of the running or cooled unit.

Restricted fields of application

The model TF 65 is intended for the application of formulations as finest aerosol fog. The device is intended exclusively for the following applications:

Pest and vector control

Plant protection

Stored product protection (food, tobacco, cotton)

Hygiene and disinfection

Another use is not intended.

The instruction manual belongs in the hand of the user as it contains important safety instructions. The device must only be passed on or sold together with the instruction manual.

The unit must only be operated if the user read the instruction manual carefully and familiarized himself with all details, in particular, the risks and safety measures.

Faulty operation or unintended use of the device may constitute dangers for the user and environment. IGEBA Geraetebau GmbH is **not** responsible for damages due to inappropriate use.

Warranty

IGEBA Geraetebau GmbH guarantees the proper manufacturing for all delivered IGEBA products according to the General Terms and Conditions of Delivery.

The warranty does not applies for damages due to normal wear, improper handling, negligent use, installation of non-original spare parts, insufficient care and/or non-compliance with this instruction manual.

NOTE

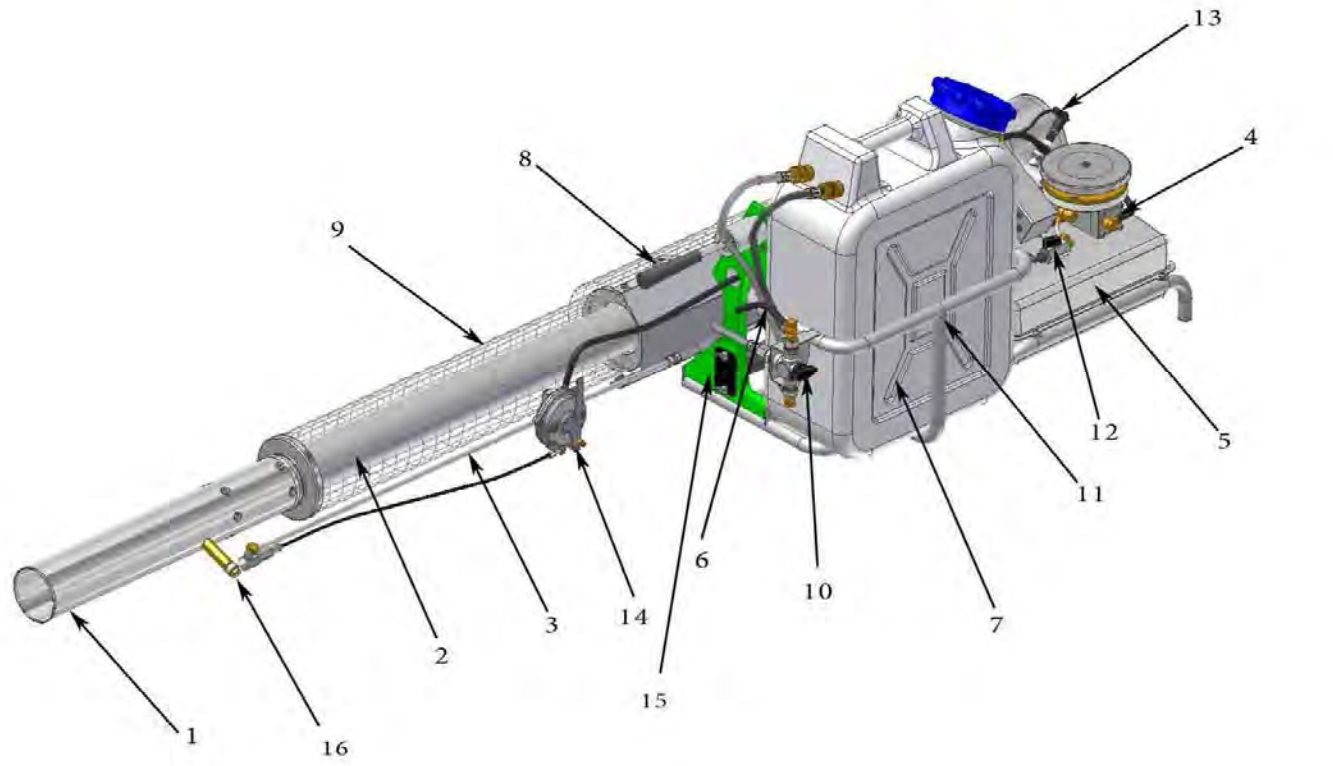
The fog generator may only be operated by trained and skilled personnel. Otherwise any warranty expires according to the condition of delivery.

Fog generator identification

The type plate is located at the front of the fuel tank. The type plate includes the following data:

Manufacturer's data - fog generator model - serial number.

3. Overview fog generator TF 65/20 E



Picture 1

1. Fog tube
2. Cooling jacket
3. Solution line
4. Carburetor assembly
5. Fuel tank
6. Air tube
7. Solution tank
8. Start air pump
9. Protective Guard
10. Solution tap
11. Frame
12. Fuel tap
13. Spark plug
14. Emergency Cut-off-Device
15. Battery holder (Alkaline 1.5 V.LR20) 4 pcs.
16. Fog solution socket with dosage nozzle

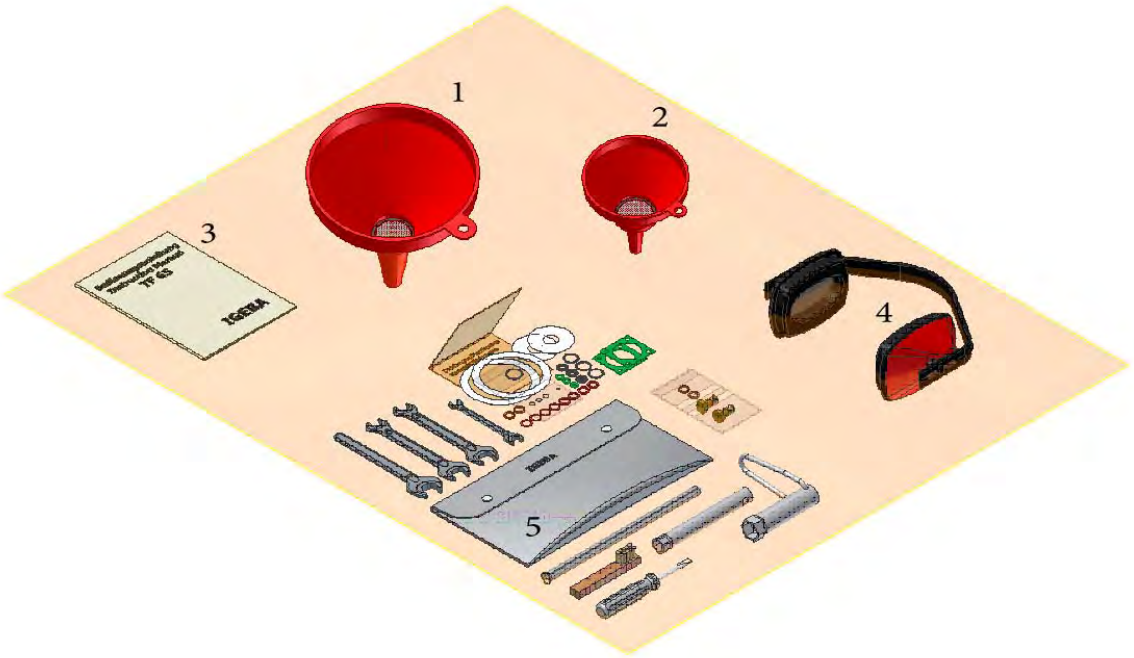
3.1 Models

The series TF-65 includes the following fog generators:

TF 65/20 E	**For all oil-containing solutions with mechanic/pneumatic emergency solution cut-off.**
TF–W 65/20 E	**For all watery solutions, with mechanic/pneumatic emergency solution cut-off.**
TF-W 65/20 E-L	**like TF-W 65/20 E, but acid-resistant execution.**
65-36-000-00	**Conversion kit from oil to water.**
65-37-000-00	**Conversion kit from water to oil.**

The instruction manual applies to all models.

3.2 Scope of delivery/ accessories



Picture 2

1. Solution funnel incl. strainer
2. Fuel funnel incl. strainer
3. Instruction manual
4. Ear protection

5. **Tool bag, complete with**
   Open end wrench SW 13
   Double open end spanner; piece SW 8, 10, (2x 14-17)
   Tool bag
   Gaskets, 1 set
   Solution nozzle; 1 set
   Membranes for air valves; 2 set
   Tube cleaner
   Socket spanner SW 14
   Reversible screwdriver
   Spark plug spanner

3.3 Special accessories

The following optional special accessories, which may be installed as required, are available for TF 65. For Information on their function and potential applications please contact IGEBA Geraetebau GmbH.

Part number: **65-36-000-00**

Conversion kit for water solutions, including fog tube, dosage nozzle set, fog solution socket.

Part number: **65-37-000-00**

Conversion kit from water to oil, including fog tube, dosage nozzle set, fog solution socket.

Part number: **65-33-000-00**

Pressure gauge, 0 - 0.6 bar for the pressure monitoring of solution tank.

Part number: **11-40-000-00**

Pressure gauge, 0 - 0.25 bar, for the pressure monitoring of the fuel tank.

Part number: **65-15-000-00**

Mounting device – see chapter 11.1 and 11.2 pages 49-50-51.

3.4 Technical data

Weight, empty.....approx. 17.7 kg

Dimensions in operational state without filter

- Length.....185 cm
- Width.....45 cm
- Height .....51 cm

Performance of Combustion chamber ..... 36.8 kW (50 PS)

Ignition(electr. ignition spark generator,supplied from 4x1,5V batteries Type LR20/6V.)

Fuel tank capacity .....5.5 Litre

Operating time with full fuel tank..... approx. 80 minutes

Pressure in fuel tank..... 0.1 bar

Solution tank capacity ..... 20 litres PE

Pressure in solution tank ..... 0.3 bar

Solution output, approx.

- Oil-based .....30 – 75 litre/hour
- Water-based ..... 20 - 40 litre/hour

Solution dosage nozzles

Flow rate with water at 15° C air temperature

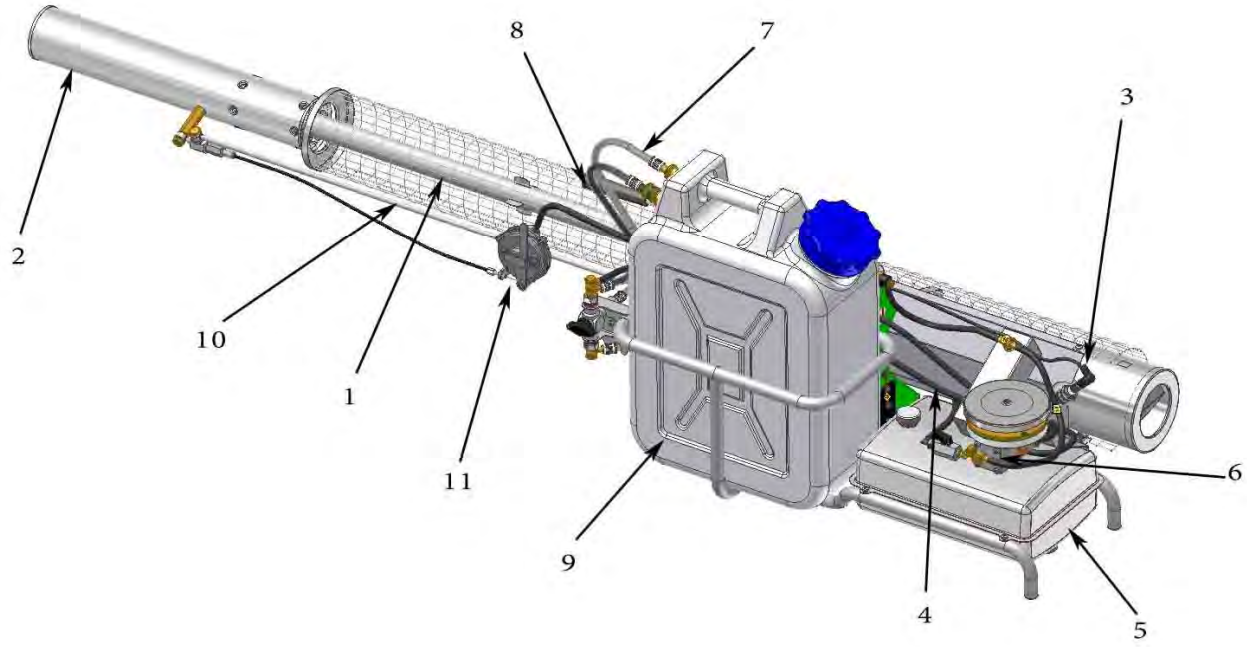
- **TF 65/20 E**
  Ø 1.4 .....approx. 30 litre/hour
  Ø 2.0 .....approx. 50 litre/hour
  Ø 2.7 .....approx. 70 litre/hour

- **TF-W 65/ 20 E**
  Ø 1.2 .....approx. 20 litre/hour
  Ø 1.4 .....approx. 30 litre/hour
  Ø 1.6 .....approx. 40 litre/hour

Noise level during operation of the fog generator
at a distance of 1 m…… 99 db(A)

DIN EN ISO 9001:2008

4. Overview - Technical functions TF65/20 E



Picture 3

1. Resonator (covered by cooling jacket)
2. Fog tube
3. Spark plug
4. Starting air line
5. Fuel tank
6. Carburetor assembly
7. Solution line
8. Start air pump
9. Solution tank
10. Solution line
11. Solution emergency cut-off

4.1 Technical description

4.2 Intended purpose

The model TF 65 is intended for the application of solutions as finest aerosol fog.

The fog generator is intended exclusively for the following applications:

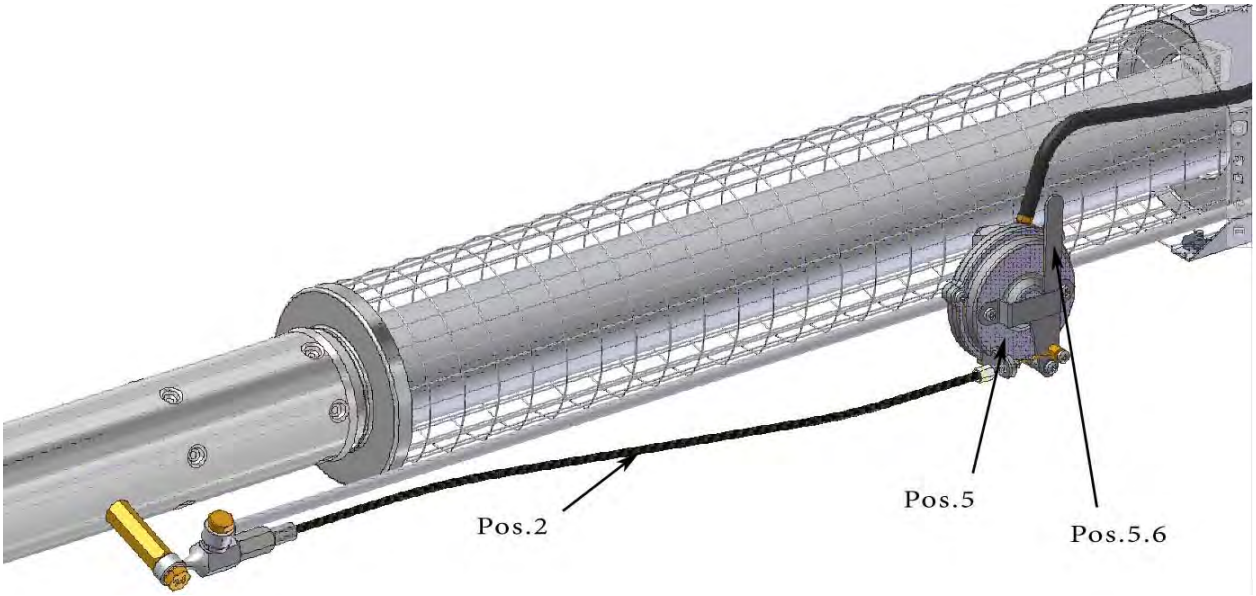
- **Hygiene, disinfection,**
- **Plant protection,**
- **Pest and vector control,**
- **Stored product protection (food, tobacco, cotton, etc.).**

The TF 65 is particularly suitable for fogging of large outdoor areas **(follow local regulations)**, large store houses and factory halls, stables etc.

The use of water-based solutions also permits the application in large greenhouses.

4.3 Mechanic/pneumatic emergency solution cut-off

The fog generators TF-65/20E and TF-W65/20E are provided with a mechanic/ pneumatic emergency solution cut-off.



Picture 4

(SP list page 12)

TF 65/20 E and TF-W 65/20 E

The cut-off-device interrupts the solution flow in case of failure/idleness of the resonator.

This is carried out by a pneumatic pressure monitoring of the carburetor system at the pressure sensor (Picture 4 Pos.5) that actuates the mechanic closing of the solution flow by means of lever (Picture 4 Pos.5.6) and Bowden cable (Picture 4 Pos. 2).

5. Transport and storage

5.1 Transport

The TF 65 is generally delivered in a carton box.

For transport and mobile operation, the TF 65 must be fixed on the platform of a transport vehicle in a tilt and slip resistant manner. The unit must not be modified or damaged for the fastening.

NOTE

The optional available mounting device ensures a safe fastening and operation. (Chapter 11 see page 49)

The fog generator must not be transported in a closed vehicle at operating temperature. Allow the fog generator to cool "down".

Empty the fuel and solution tank and weatherproof the cooled fog generator with film material prior to longer, unattended transports.

5.2 Storage

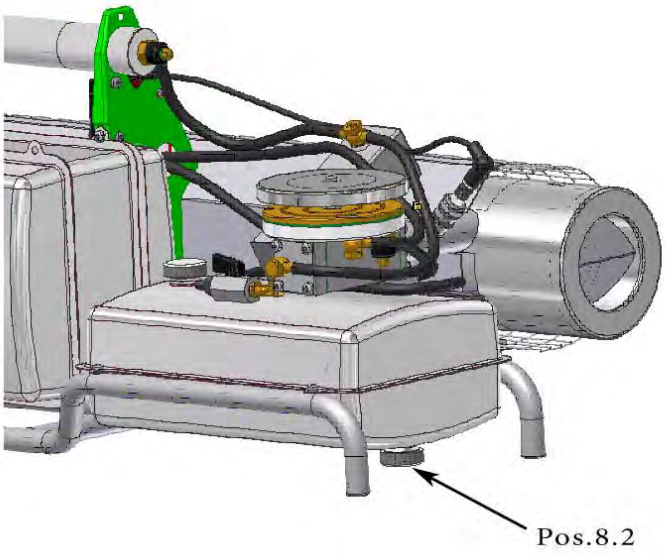
When storing the unit over a longer period the following must be observed:

Generally, the solution tank must be emptied after every use and the solution lines must be cleaned by means of fogging water. (See page 35 chapter 8.2)

Completely empty the fuel tank via the cleaning outlet (Picture 5 Pos. 8.2). Collect the fuel in an appropriate container. Not for hot fog generators! Danger of explosion/ life threatening injuries - Immediately clean spilled gasoline completely!

Picture 5

(SP list page 6)



The fog generator must be enclosed thoroughly and tightly with foil material as described in chapter 8 (Page 34); this protects the fog generator against humidity and dust. The packed fog generator must be stored in a dry, dust free area.

Fog generator parts may corrode due to improper storage and get damaged thereby.

6.Start-up

Strictly observe the safety instructions when operating! Chapter 2 page 9

6.1 Filling Gasoline

TF 65 is designed for regular gasoline. Higher-grade types of gasoline may also be used, but do not increase the performance. High-grade fuels allow a cleaner combustion.

Do not refuel if fog generator is hot! Danger of explosion/ life threatening injuries - Immediately clean spilled gasoline completely!

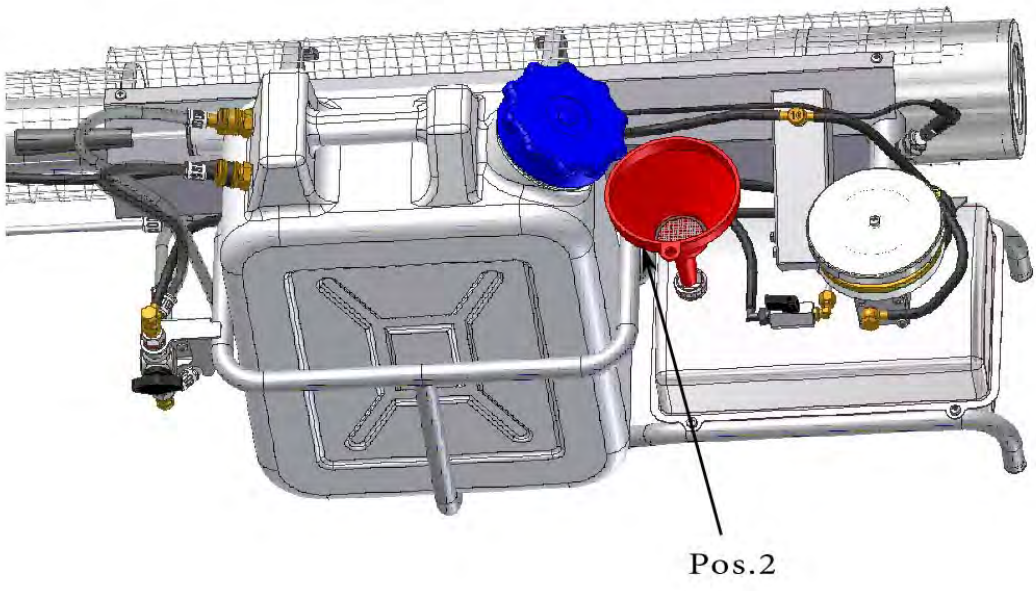
Remove the cap of the fuel tank.

Insert the **small** funnel with strainer (Picture 6 Pos.2) into the inlet and fill the tank with gasoline (max. 5.5 l, if tank is empty).

Close the fuel tank again tightly with the cap.

Picture 6

(SP list page 11)

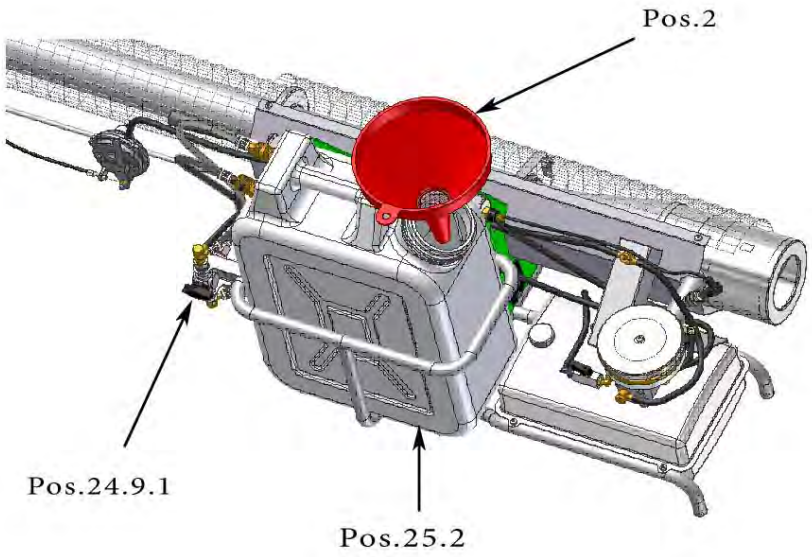


6.2 Filling Solution

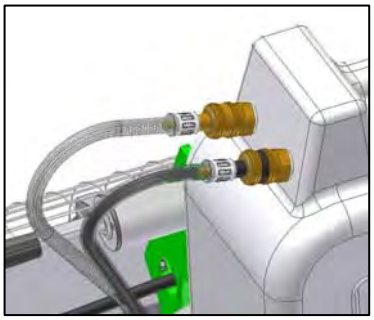
Observe the respective safety instructions when handling a solution. Wear face and hand protection!

Picture 7

(SP list page 8-9-11)



Picture 7 a.)



Check position of solution tap (Picture 7 Pos.24.9.1) - this must be in "closed" (horizontal) position. Remove cap of solution tank (Picture 7 Pos.25.2). Insert the large funnel with strainer (Picture 7 Pos.2) into the inlet and fill in the solution. The tank has a capacity of max. 20 litres. Monitor the level indicator. **Close the solution tank again tightly with the cap.**

The refill of solutions is not permitted during operation! For this purpose, the fog generator must be always switched off and cool down. Ensure that the solution and pressure line are connected to the solution tank.

NOTE ***The pressure line and respective coupling at the solution tank are tagged with a black marking.*** **(Picture 7 a.)**

6.3 Setting the solution flow with the dosage nozzle

The dosage nozzle is pressed in hollow screws. The hollow screws are marked according to the nozzle bore.

NOTE

Please note that dosage nozzles must be chosen depending on various solutions.

Five different dosage nozzle are available that are used to set the solution flow.

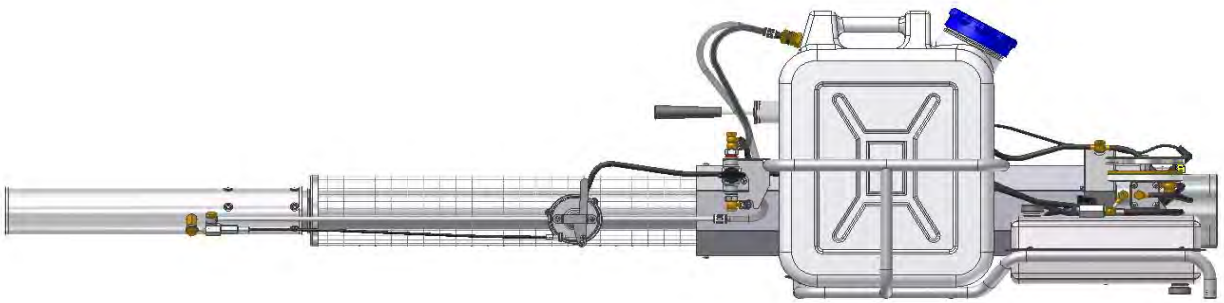
Dosage nozzle - Nozzle bore	**Flow/application rate in l/h solution**
mm	**litre/fluid**
Ø 1,2	20 water
Ø 1,4	30 oil / water
Ø 1,6	40 water
Ø 2,0	50 oil
Ø 2,7	70 oil

The flow rates are approximate that are determined with water at an air temperature of 15 °C.

NOTE

The dosage nozzle Ø 1.2 is only suitable for water-based solutions, the dosage nozzles Ø 2.0, Ø 2.7 must not be used for water-based solutions.

6.4 Set up of TF 65



The location of TF 65 must not be chosen near flammable materials and gases. The fog generator must not be operated in rooms with flammable particular matter! Risk of injuries due to fire and explosion! Set up TF 65 horizontal on solid ground in a tilt and slip resistant manner.

If the fog generator is placed on a mobile platform (e.g. vehicle platform), it must be secured against rolling (by wedges, tighten the handbrake).

Ensure an appropriate safety area in front of the resonator (min. 3 m). The safety area and fogged rooms must not be entered.

The fog generator must not be operated unattended.

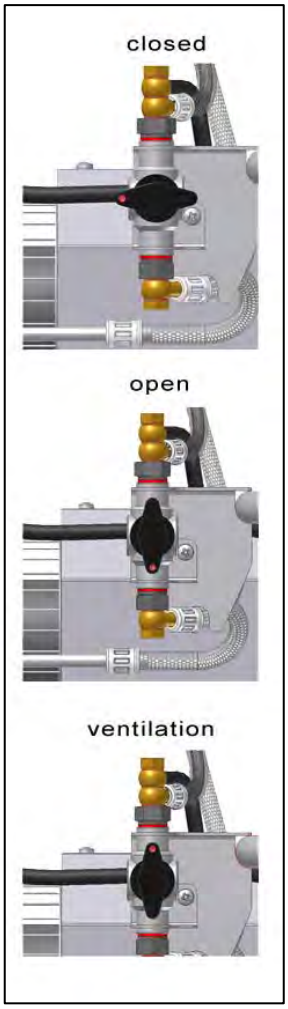
6.5 Start up of TF 65

Wear ear protection !!

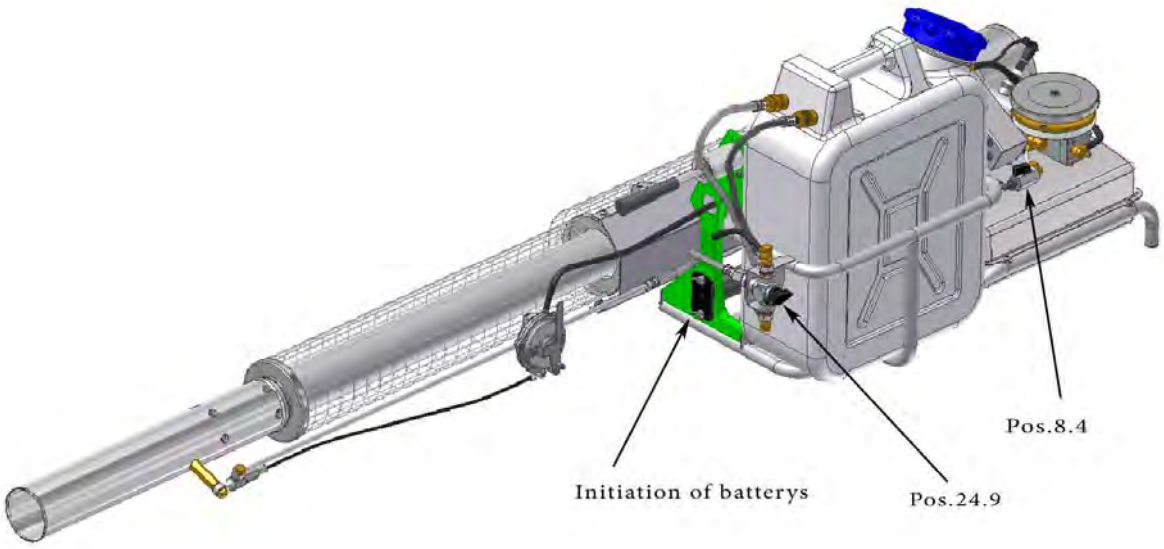
Wear respiratory protection !!

Wear protective clothing !!

NOTE



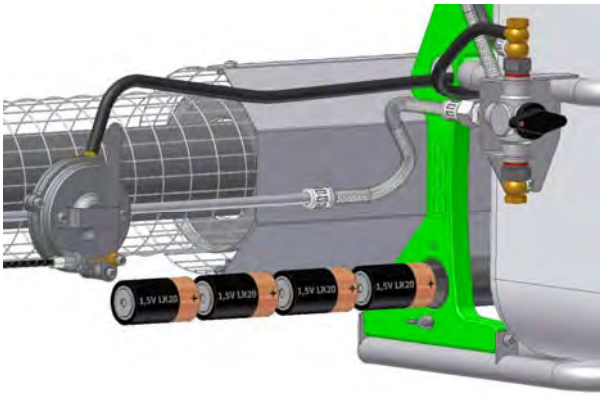
Picture 8 **(SP list page 6-7-8)**



Insert Batteries (Picture 8a.) – fill gasoline – fill solution

Turn fuel tap (Picture 8b.) 90° in longitudinal direction „open“- solution tap horizontal to position „closed“.(Picture 8 Pos.24.9)

Picture 8a.)

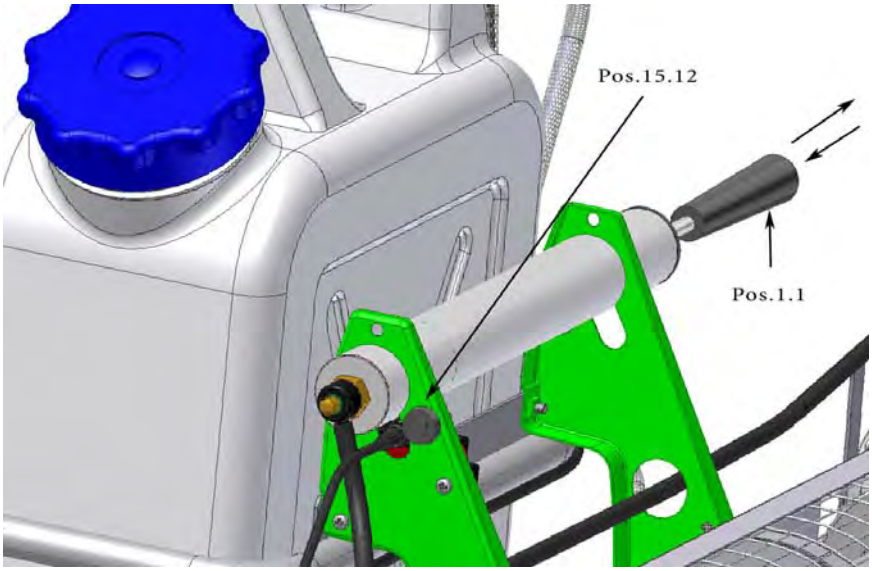


Picture 8b.)

Press and hold the black button (Picture 9 Pos.15.12) and move the pump rod (Picture 9 Pos.1.1) **at the same time** for several times evenly (push and pull) **until the unit starts.** Push the pump rod and release the start button after the unit started.

Picture 9

(SP list page 2-7)



NOTE

Thereby it is important to pump evenly, thus, the pump movement must not remain at both end-stops.

You need to pump faster for cold fog generators as for warm or hot ones.

The required start or conveying air volume respectively for the gasoline, which must be generated by the pump, depends on the tank capacity. We recommend starting with a full fuel tank. Continue pumping evenly for two or three times after the first combustion, so that pressure builds up faster in the carburetor system.

Excessive pumping, in particular with a full fuel tank and a warm or hot fog generator, may cause flooding of the carburetor. This results in black smoke from the fog tube or a flame without audible combustion. Close the fuel tap (Picture 8b. Page 29) and repeat the start procedure as described until combustions are no longer audible. Reopen the fuel tap and restart the fog generator.

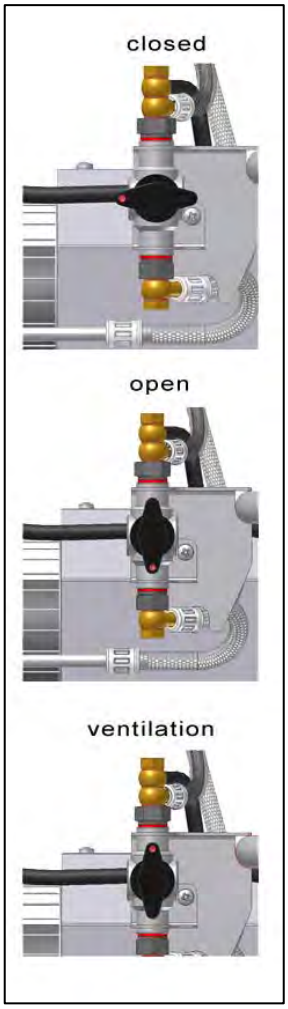
NOTE

The fog generator needs to warm up for about 1-2 minutes until the combustion sound is consistent.

7. Operation

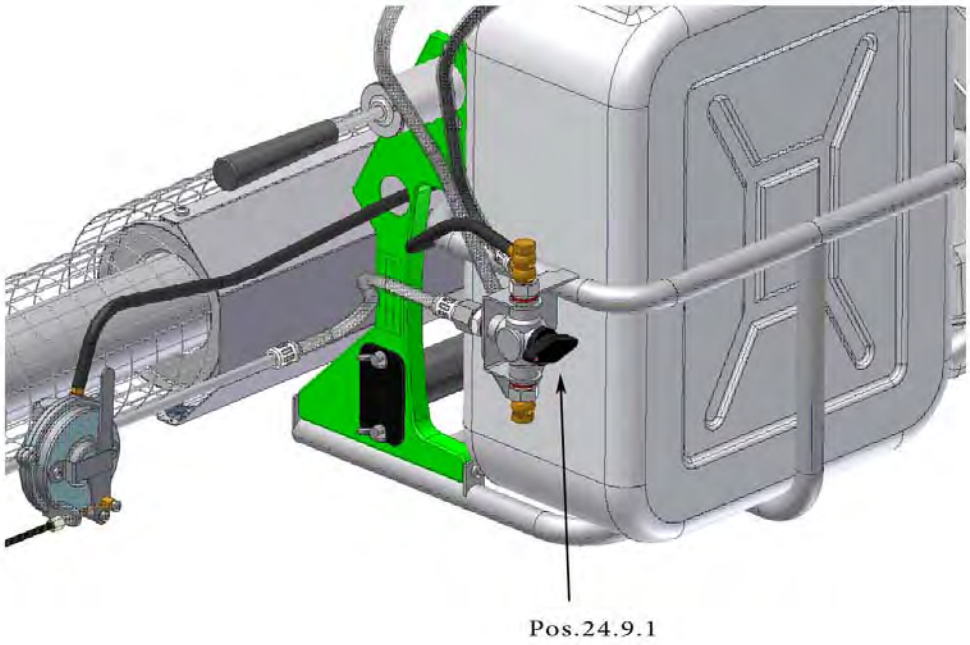
Fogging with TF 65

NOTE



Picture 10

(SP list page 8)



Operation of TF 65

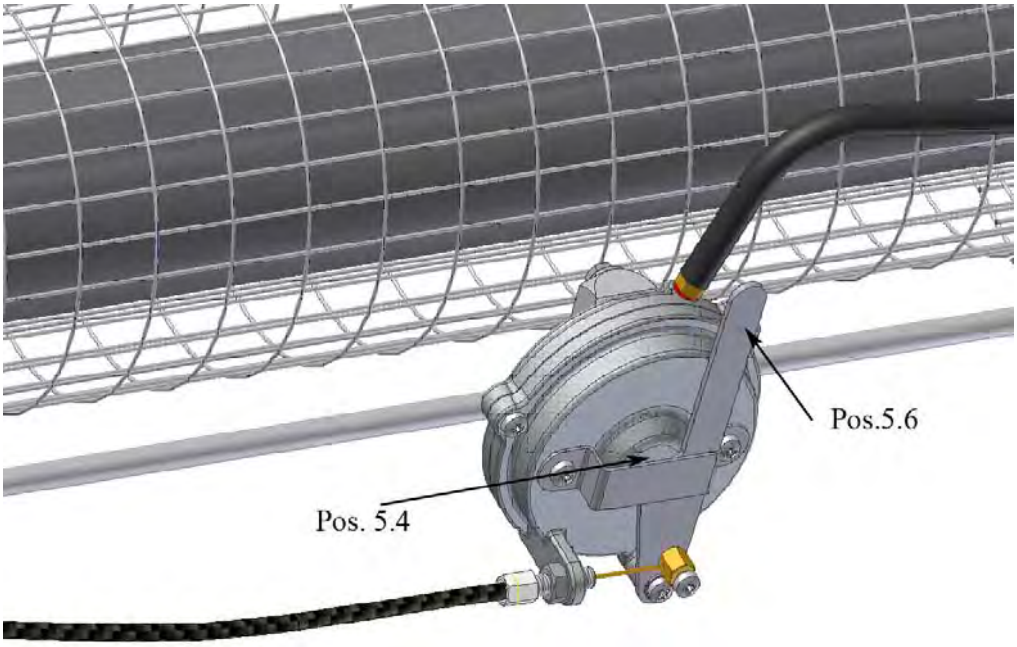
After warming up of (approx.1-2 min.) the TF 65, turn the solution tap (Picture 10 Pos.24.9.1.) 90° to the position “open“ (see note) - solution line to the fog tube is open.

7.1 Mechanic/pneumatic emergency solution cut-off

No fog will appear yet, as the mechanic/pneumatic emergency solution cut-off-device is still closed!

Picture 11

(SP list page 12)



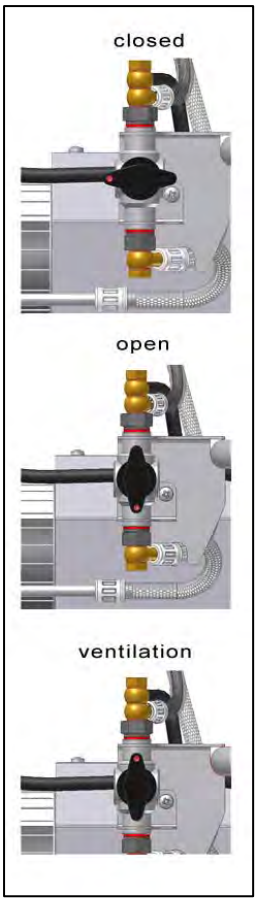
TF 65/20 E and TF-W 65/20 E

Turn the lever (Picture 11 Pos.5.4) to the right until the pin of the pressure sensor snap in the free bore of the lever (Picture 11 Pos.5.4) – the emergency cut-off-device is open and if the solution tap is open, the fogging could be started.

The fog immediately occurs at the fog tube - the fog generator is operational.

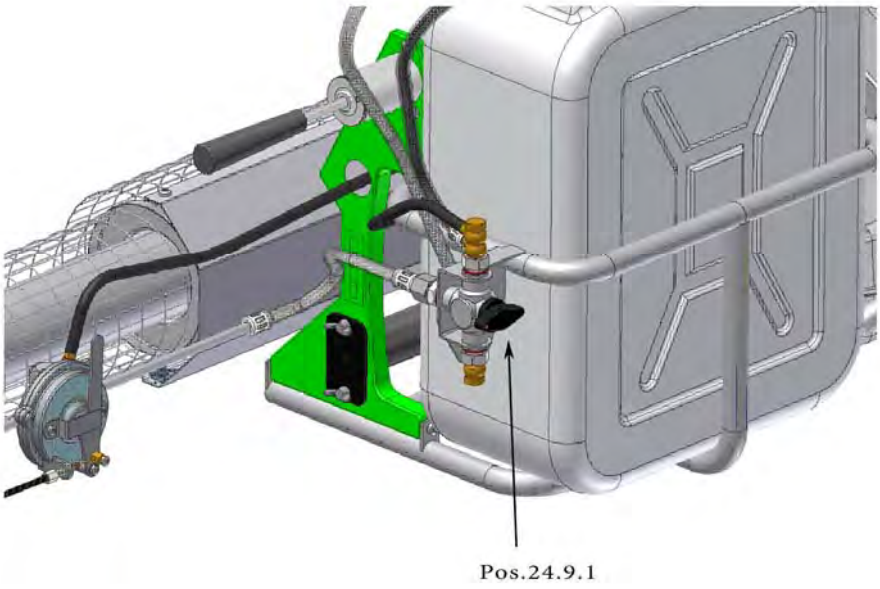
7.2 Shutting off TF 65

NOTE



Picture 12

(SP list page 8)



Close (horizontal) the solution tap (Picture 12 Pos. 24.9.1) for short-time interruptions of the fogging.

To switch off the fog generator, first, the solution tap (Picture 12 Pos. 24.9.1) must be turned in the upper position "ventilation" until no more fog is generated.

NOTE

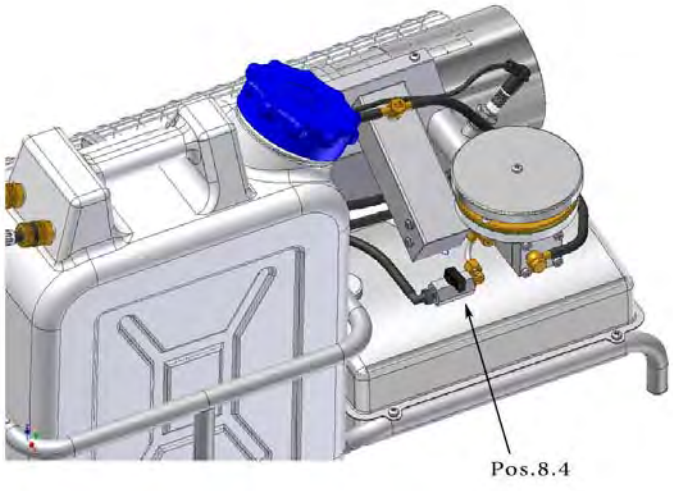
Thus, the pressure is released from the solution tank.

Close fuel tap (Picture 13 Pos.8.4) (upright position). Afterwards pump for 2-3 times to burn remaining gasoline.

Then close the solution tap (horizontal position).

Picture 13

(SP list page 6)



8. Care and maintenance

The user is responsible for the care and maintenance of TF-65.

Regular care and maintenance prevents accidents, minimizes repairs and keeps the fog generator operational.

Cleaning

The fog generator must be completely switched off and cooled down!

Clean the fog generator with a clean cloth and/or non-flammable detergent. Do not use sharp-edged objects to remove dirt particles. For prolonged disuse or storage empty and clean the fuel and solution tank and take off the batteries (Chapter 8.1 page 35).

8.1 Maintenance

Maintenance instructions must be strictly observed, otherwise, IGEBA Geraetebau GmbH disclaims any warranty.

Post-operative works

8.2 Cleaning of solution lines

NOTE

This procedure must be carried out after every operation - especially for water-based solutions - or if malfunctions of the solution supply occur.

Always completely empty the solution tank after every operation.

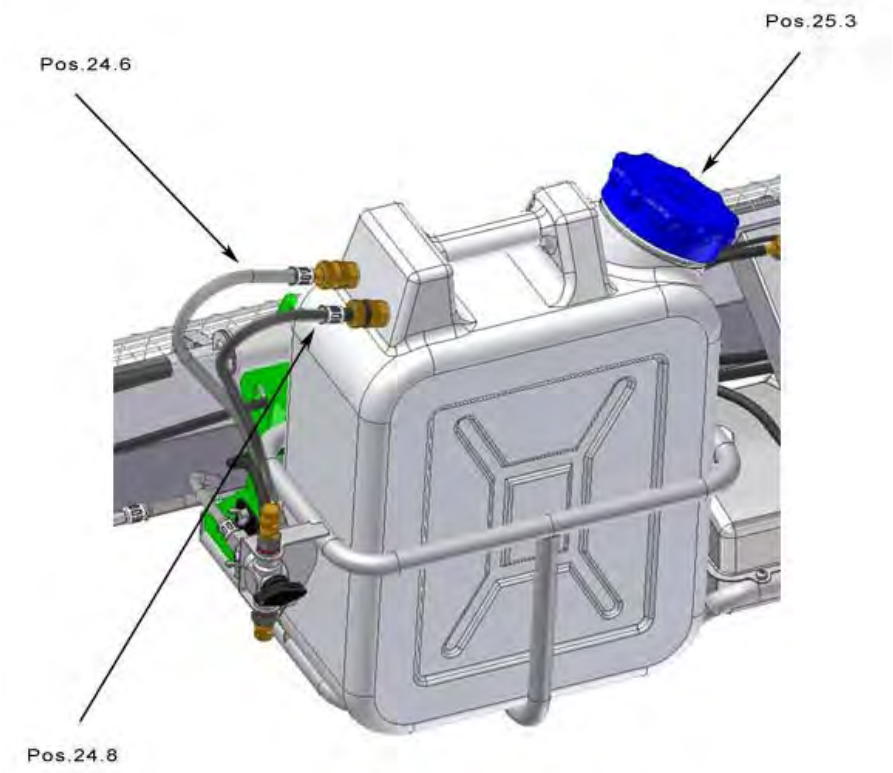
Uncouple the pressure line (Picture 14 Pos.24.6) and solution line (Picture 14 Pos.24.8). Remove the tank from the frame. Open then the cap of the solution tank (Picture 14 Pos.25.3) and fill the remaining solution into a suitable container.

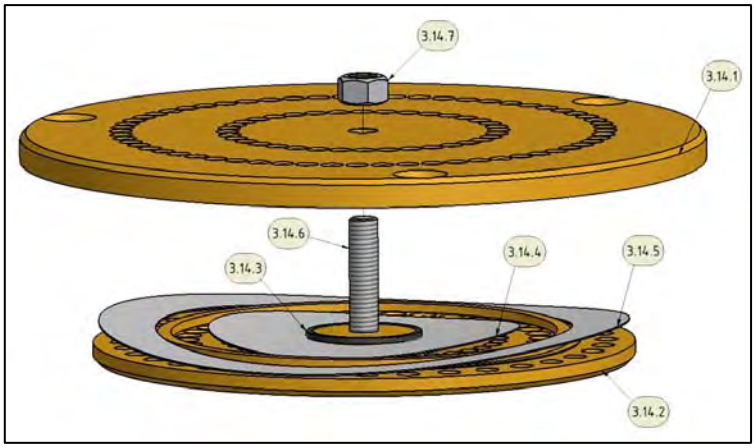
Take the required measures to avoid contact with the solution.

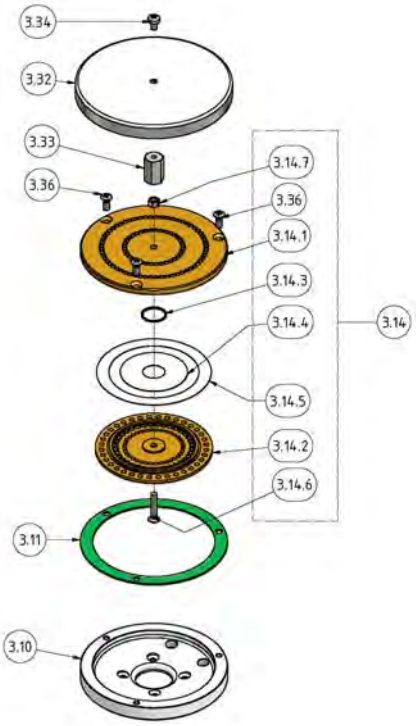
Afterwards fill approx. 1 - 2 l. water into the solution tank, close the cap firmly (Picture 14 a. Pos.8.2), insert into frame and connect the tank. Start the fog generator normally and fog the water. (See page 30 chapter 6.5)

Picture 14

(SP list page 8-9)







The fog generator must be switched off and cooled down!

Picture 15

Picture 16

(SP list page 5)

8.3 Checking membranes in the air valve

Remove the plate (Picture 16 Pos. 3.32) by losing the screws (Picture 16 Pos. 3.34).

Loosen the three raised countersunk-head screws (Picture 16 Pos 3.36) and remove the air valve (Picture 16 Pos. 3.14) from the air funnel (Picture 16 Pos. 3.10).

Loosen the spacer piece (Picture 16 Pos. 3.33) while holding the screw (Picture 16 Pos.3.14.6) with the enclosed cross-tip screwdriver and lift the valve plate (Picture 16 Pos. 3.14.2).

Inspect both membranes (Picture 16 Pos. 3.14.4) and (Picture 16 Pos. 3.14.5) for contamination.

If necessary, clean the membranes and perforated plate with a clean cloth and **some gasoline**.

Pay attention that the membranes are not be folded!

Reinstall the air valve in revered order. In particular, ensure the proper position of the membranes (Picture 15 Pos. 3.14.4 – 3.14.5) and sealing rings above it (Picture 15 Pos. 3.14.3).

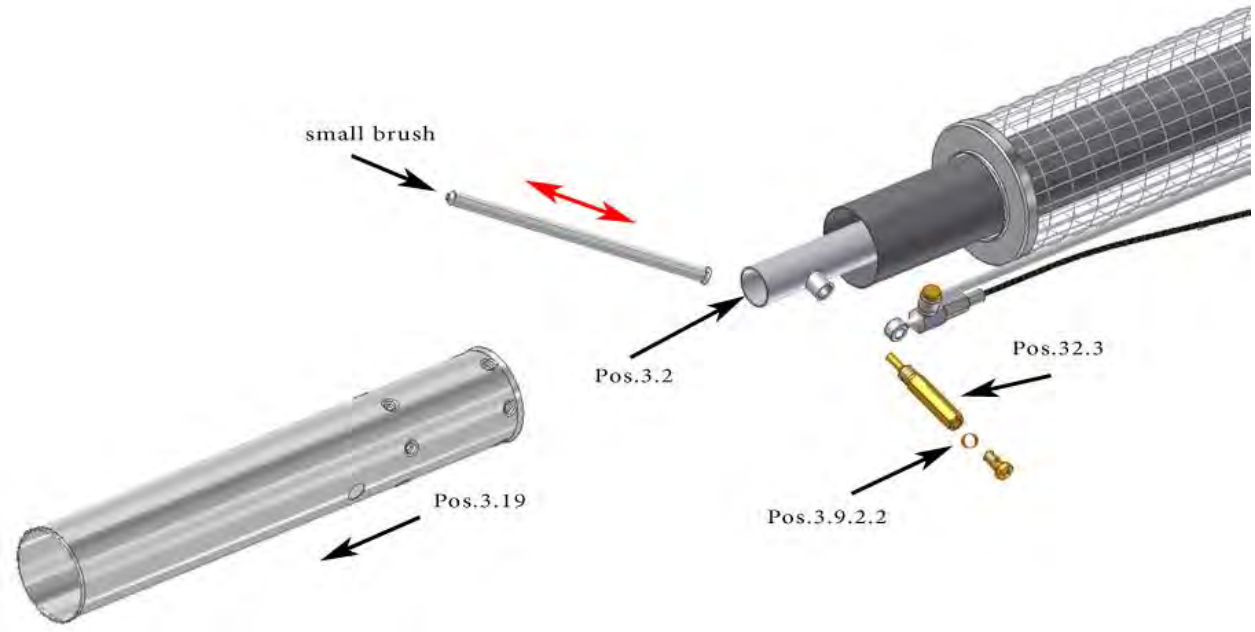
NOTE

The membranes have a slight curvature, place them in correct position according to Picture 15. The correct installation position is essential for the proper operation of the air valve.

8.4 Remove solution residues in the resonator

Picture 17

(SP list page 3)



The fog generator must be switched off and cooled down!

Unscrew the fog solution socket (Picture 17 Pos.32.3) and nozzle (Picture 17 Pos.3.9.2.2). Then remove the fog tube (Picture 17 Pos.3.19).

Remove solution residuals with the provided cleaning tool. Insert, for this purpose, the tube cleaner (Picture 17/Picture 2 see page 17) at the end of the resonator (Picture 17 Pos.3.2) and inside the fog tube (Picture 17 Pos.3.2). Clean with even movements.

The fog solution socket (Picture 17 Pos.32.3) can be cleaned with the provided small brush (Picture 2 see page 17).

Pay attention to reassemble the resonator after cleaning in reversed order. Ensure the correct arrangement of the solution socket (Picture 17 Pos.32.3).

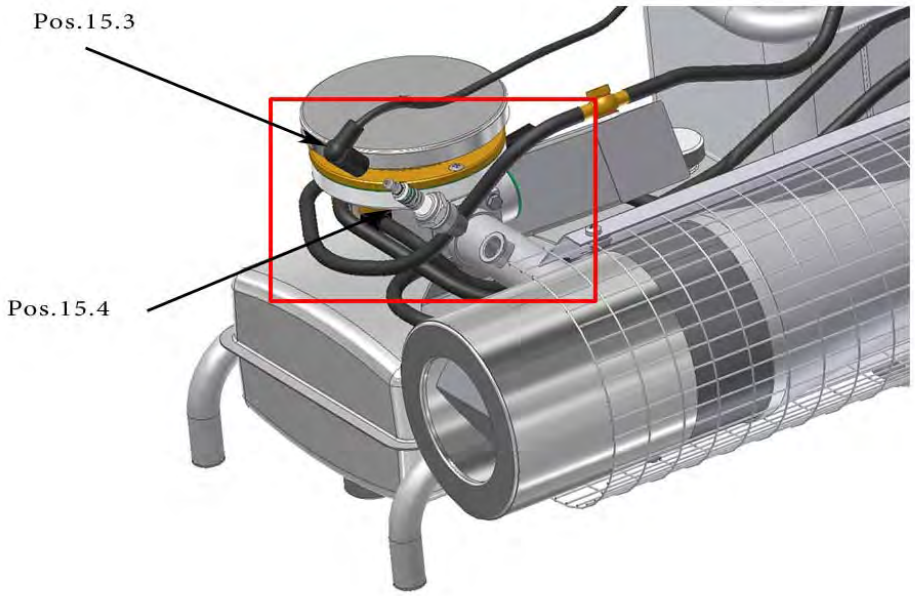
8.5 Checking spark plug

Remove the plug connector (Picture 18 Pos. 15.3) and unscrew the spark plug (Picture 18 Pos.15.4) with the provided spark plug spanner. Clean the spark plug electrode with the provided wire cleaning brush.

NOTE

Verify the electrode gap, it should be approx. 1.5 mm (see (Picture 18.a). If required, bend the electrode accordingly.

Picture 18 (SP list page 7)



Picture 18.a)

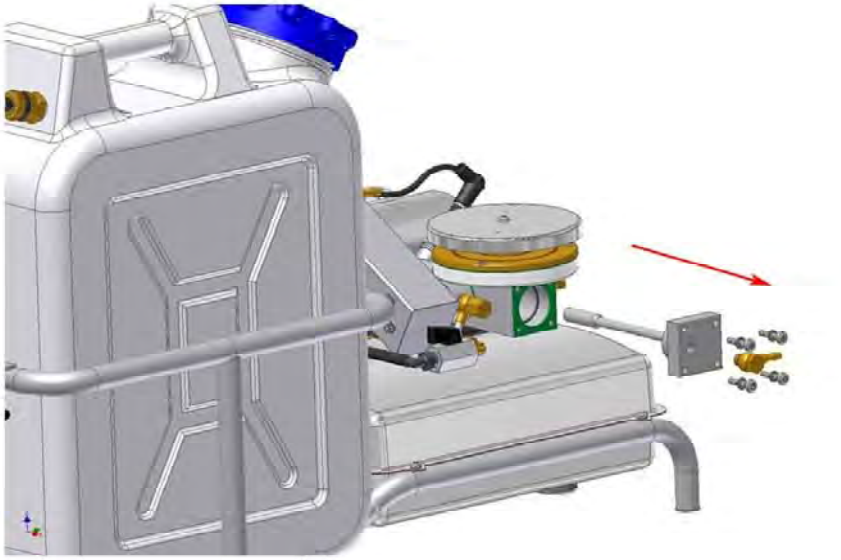
NOTE

Clean carburetor before reinserting the spark plug (Chapter 8.6 page 40)

8.6 Remove combustion residues from the carburetor

Picture 19

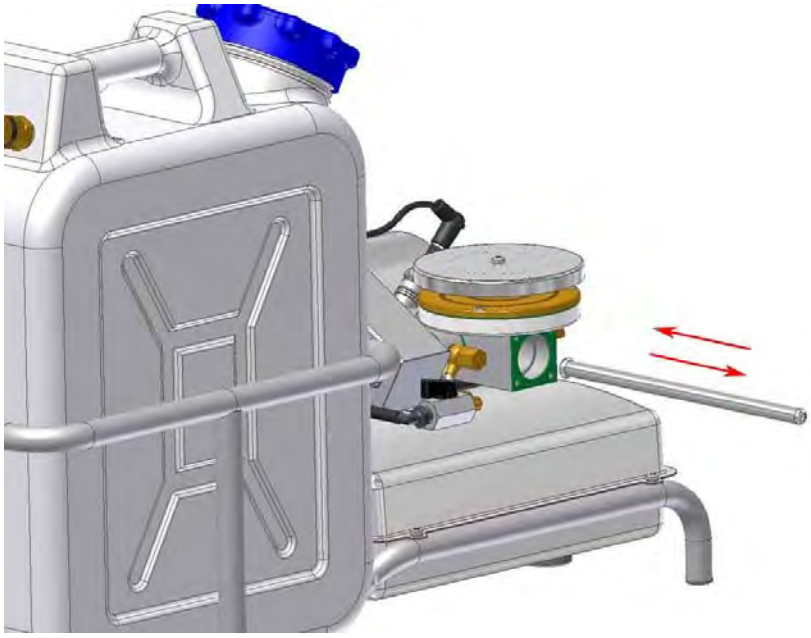
(SP list page 4)



Procedure: **(SP list page 4)**

1. Remove hollow screw (3.20) and respective gaskets (3.7).
2. Remove fastening screws (3.23) and spring washer (3.24).
3. Remove swirl vane (3.4).
4. Remove O-ring (3.35) from mixing chamber (3.1).

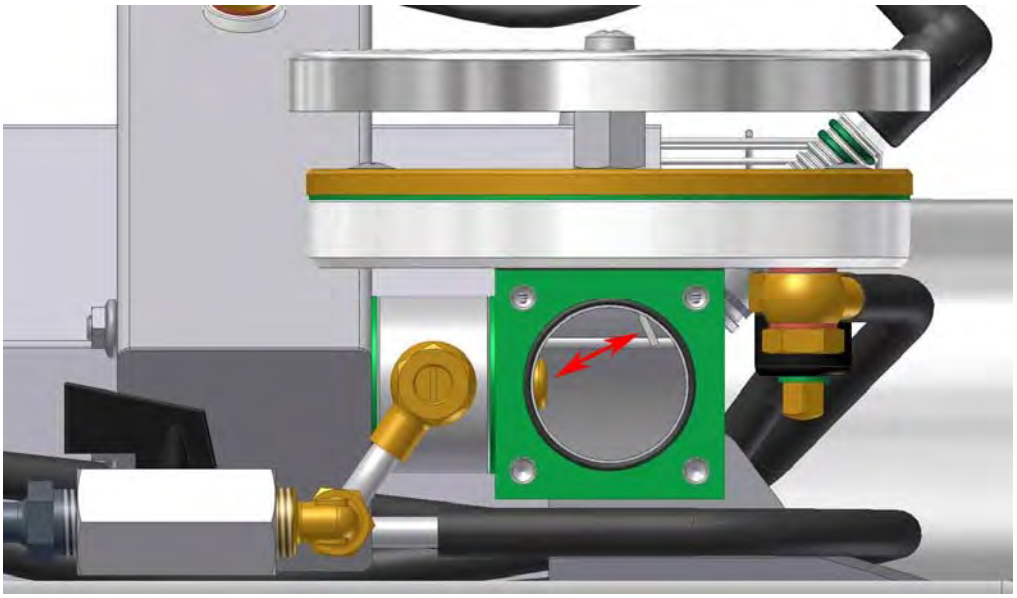
Picture 19.a)



NOTE

Insert the cleaning tool (Picture 19.a) *with caution and remove the combustion residues in the spark plug area in front of the mixing chamber carefully. Remove the loose dirt particles by hand or pressurized air. Please wear protective glasses.*

Picture 19.b)

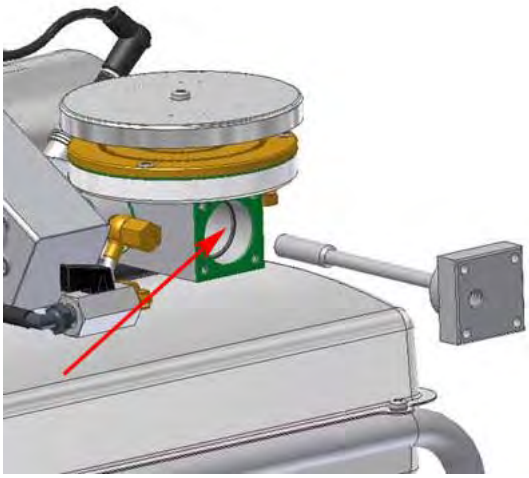


Ensure that atomizer nozzle and spark plug are not damage by the cleaning procedure. **(Picture 19.b)**

NOTE

Reassemble the carburetor after cleaning in reversed order. Ensure that the cleaned O-ring is placed correctly into the mixing chamber. (Picture 19.c.)

Picture 19.c.)



9. Set up of mechanic/pneumatic emergency solution cut-off

After a replacement/ repair of the pressure sensor or solution line the cut-off-device must be readjusted, if necessary.

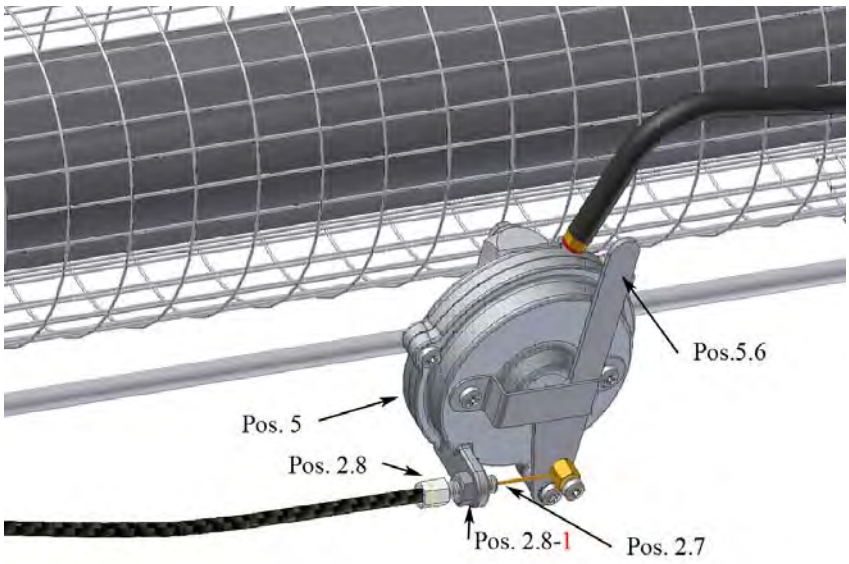
NOTE

The basic set up of the Bowden cables (Picture 20 Pos.1) must be carried out on the cold unit as the resonator expands during operation. The set up must be re-verified on the hot unit and readjusted, if necessary.

Picture 20

„E“ Stop „Open“

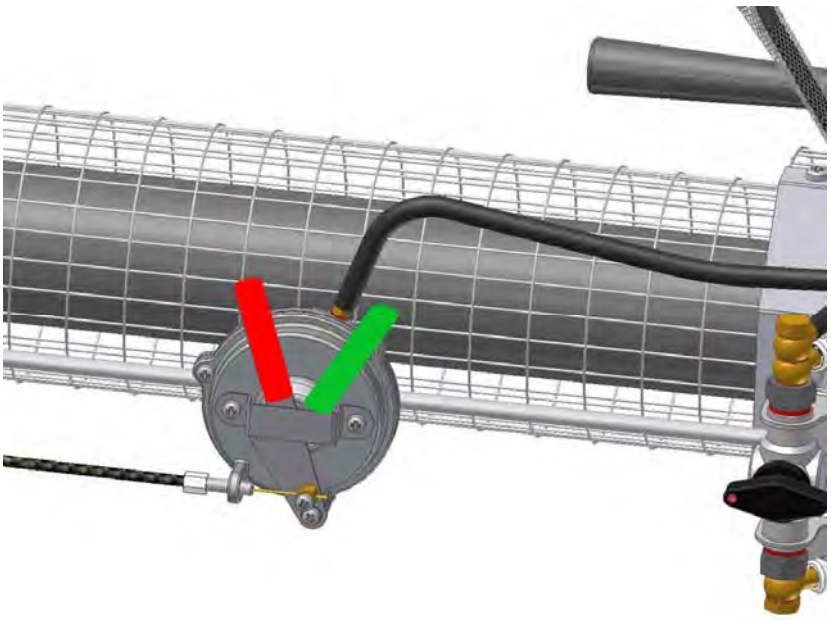
(SP list page 12)



Picture 20.a)

„E“ Stop „Closed“

(SP list page 12)



9.1 Basic setting emergency solution cut-off-device

NOTE

Picture 20

1. Turn the lever Pos.5.6 left in position „closed“
2. Loosen the counter nut Pos.2.8 -1
3. Unscrew the adjusting screw Pos.2.8 by turning counterclockwise until a slight resistance is perceptible.
4. The lever Pos.5.6 now lies free of play at the left stop of the pressure sensor. Turn then the adjusting screw Pos.2.8 approx. ca. half a turn back (clockwise). The lever should now have slightly play (approx.1 mm) to the stop.
5. Hold the adjusting screw Pos.2.8 and fasten the counter nut Pos.2.8-1 against the stop on the pressure sensor Pos.5.

10. Malfunctions and troubleshooting

Possible malfunctions can be identified and remedied by means of the troubleshooting table.

Please contact the IGEBA customer service for malfunctions and errors that cannot be identified and remedied.

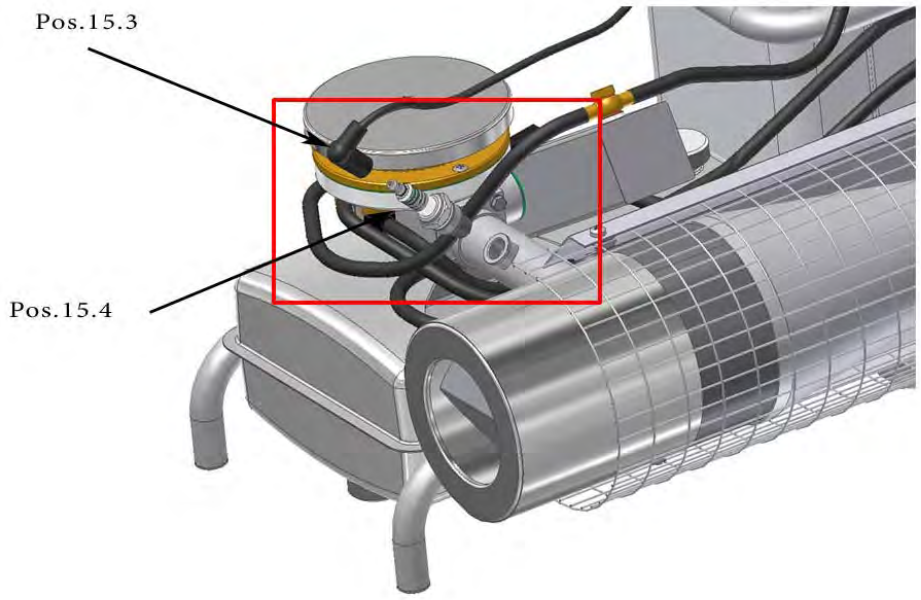
Malfunction	Possible cause	Remedy
TF-65 does not start.		
	Batteries are empty or not inserted correctly	Check batteries/ ignition must be audible.
	Push button defective.	Replace push button.
	No gasoline.	Refuel.
	Fuel tank cap leaky	Check, tighten, if necessary
	Fuel tap closed.	Open fuel tap.
	Spark plug contaminated or electrode gap too small.	Page 44 - Clean and adjust.
	Spark plug defective.	Replace spark plug.
	Membranes in the air valve contaminated or damaged.	Page 36 - Picture 15 and 16
	Carburetor contaminated.	Page 39-40 Picture 19-19a.
	Fuel supply insufficient.	Page 45 - Picture 22 and 22 a.
	Carburetor “flooded“.	Page 47
TF-65 runs erratically / with too low carburetor pressure / stops.		
	Fuel tap position not switched clearly.	Turn fuel tap in position "open".
	Membranes in the air valve contaminated or damaged.	Page 36 - Picture 15 and 16

Malfunction	Possible cause	Remedy
	Fuel nearly consumed.	Refuel.
	Swirl vane damaged.	Check swirl vane on damages. SP list page 4 Pos.3.4
	Mixing chamber contaminated.	Clean mixing chamber with tube cleaner. Page 39-40 Chapter 8.6
	Exit of resonator and fog tube contaminated.	Remove solution residues with provided tube cleaner. SP list page 3 Pos.3.17 – 3.2
	Spray nozzle contaminated.	Remove and clean (only with pressurized air). Page 48
Insufficient or no fog generation.		
	Solution tank cap leaking.	Check and replace seal in cap, if necessary. - SP list page 9
	Dosage nozzle clogged.	Demount and clean when fog generator cooled down. - SP list page 3 Pos.32.4
	Fog solution socket clogged.	Demount and clean when fog generator cooled down. - SP list page 3 Pos.32.3
	No solution supply.	Check flow in solution line system. ETS list page 8 Pos.24.8 – Pos.29
	Solution tap.	Check the flow. SP list page 8 Pos.24.9 – 24.9.1
	Pump pressure in solution tank too low.	Check pressure line and pressure valve. SP list page 8 Pos.29
	Pressure and solution line on solution tank interchanged (only for TF-65/20)	Install line with black marking also on the black marked coupling. Page 26 Picture 7 and 7a.

10.1 Cleaning and set up of spark plug

Remove and clean spark plug, check and if necessary, adjust electrode gap. Reinstall spark plug and connector. (see chapter 8.6 page 40)

Picture 21



Picture 21.a)

NOTE

Clean carburetor before reinstalling spark plug (Chapter 8.6 page 40)

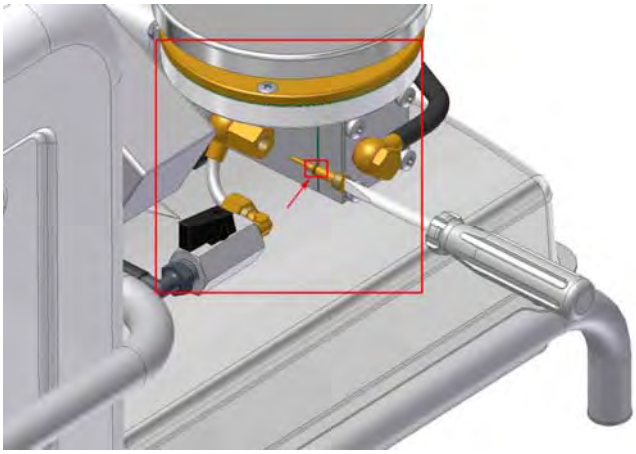
10.2 Setting gasoline flow

NOTE

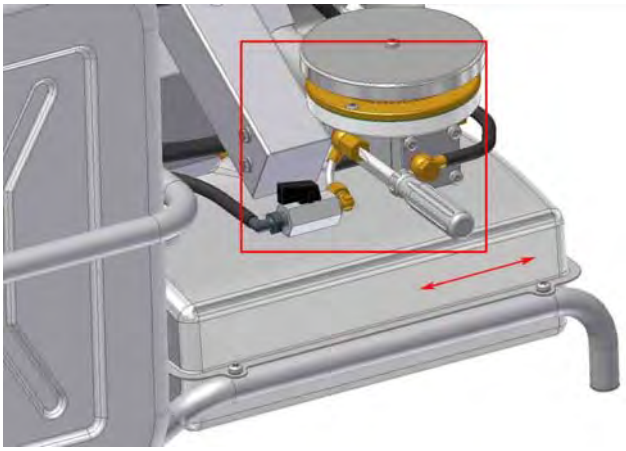
Only in the event of a malfunction!

Please keep the factory settings of the regulating needle. (e.g. by determining the screw-in depth or number of required rotations to remove the dosage needle from the case.)

Picture 22



Picture 22.a)



The fuel flow can be adjusted via the regulating needle:

Turn clockwise	=	smaller fuel flow/ lower temperature
Turn counterclockwise	=	increased fuel flow/ higher temperature

NOTE

The fuel regulation has been optimally adjusted by the factory according to the following conditions: approx. 800 m above sea level, ambient temperature 18 °C. If the actual conditions deviates strongly, a minor adjustment may be necessary.

If the dosage needle is removed completely, gasoline can leak. Caution with running/ hot units – Switch off unit and wipe gasoline.

10.2 a.) Check gasoline flow

NOTE *Only in the event of a malfunction!*

Please keep the factory settings of the regulating needle. (e.g. by determining the screw-in depth or number of required rotations to remove the dosage needle from the case.)

Unscrew the regulating needle (Picture 22) with attached O-ring (Picture 22) from the switched off and cooled unit. Check the housing bore and regulating needle for contaminations and clean them, if necessary.

Open fuel tap, operate start air pump. Normally gasoline should leak from the housing bore.

Wipe off gasoline.

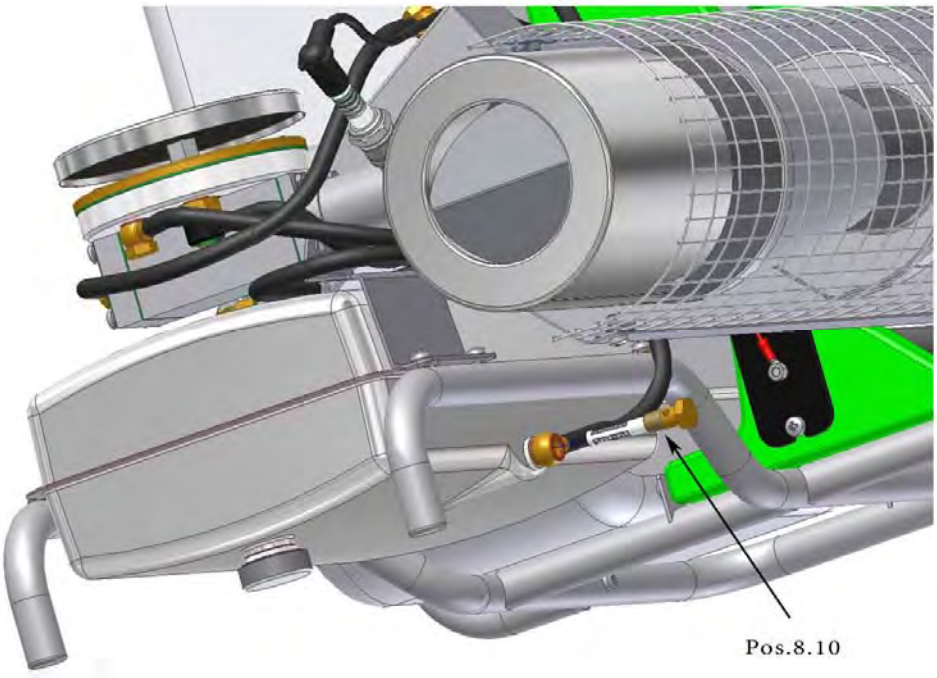
If gasoline leaks, the fuel supply is in order. Reinstall the regulating needle with O-ring. Adjust the dosage needle to the former depth.

Look sideways into the resonator (Picture 1 Pos.1) following the warm-up phase. Ensure to wear protective glasses and keep a sufficient distance of approx. 2 m. The flame must not come out of the resonator. Otherwise, reduce the fuel flow by turning the dosage needle (Picture 22) to the right, then control the flame again.

If no fuel comes out, the strainer of the hollow screw may be contaminated (Picture 23 Pos.8.10). Unscrew the hollow screw from the fuel tank to control.

Picture 23

(SP list page 6)



Collect leaking fuel in a suitable container. Check the strainer for contaminations and clean it, if necessary. Reinstall the hollow screw.

If this will not remedy the malfunction, check the atomizer nozzle in the carburetor system.

10.3 Start up with "flooded" carburetor

If the switched off but still warm/hot unit is restarted by excessive pumping, the carburetor may be "flooded". The unit will not start as no ignitable air-fuel mixture is generated.

Then fuel vapour escapes from the fog tube.

Close fuel tap (Picture 15 page 36 Pos.8.4).

Press the black push button (Picture 9 page 30 Pos.15.12) while strongly pumping the start air pump (Picture 9 page 30 Pos.1.1).

Then some combustions are audible! Continue pumping until no combustion are occurring. Excessive fuel is burned by the combustion.

Then try to restart the unit with open fuel tap and **slower** pumping until the fog generator operates failure-free.

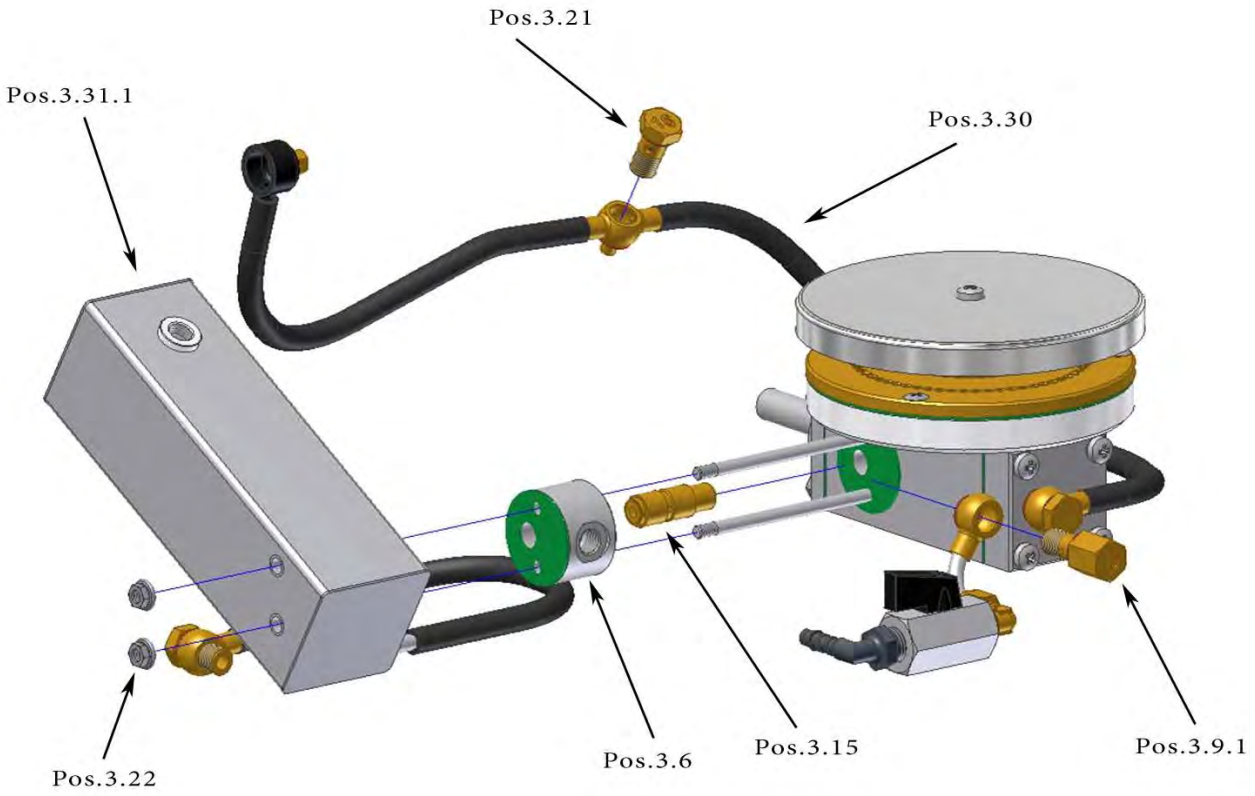
NOTE

If this will not remedy the malfunction, check the atomizer nozzle in the carburetor system.

10.4 Check and remove atomizer nozzle

Picture 24

(SP list page 4)



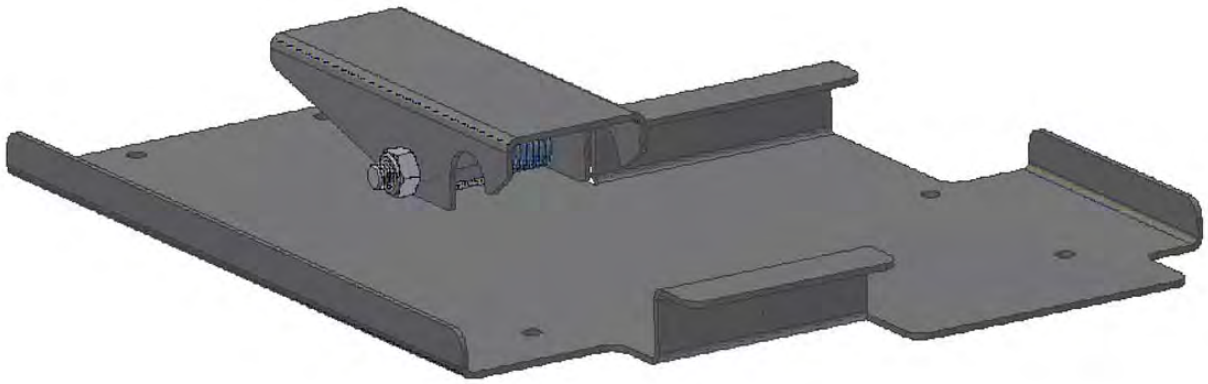
1. Completely remove fuel dosage (Picture 24 Pos.3.9.1) (otherwise, the tube hinder removal of surge tank)
2. Remove the nozzle (Picture 24 Pos.3.21) from the stilling tank
3. Remove return line (Picture 24 Pos.3.30.2) from stilling tank
4. Remove nuts (Picture 24 Pos.3.22).
5. Remove surge tank (Picture 24 Pos.3.31.1)
6. Remove nozzle assembly (Picture 24 Pos.3.6)
7. Remove and check atomizer nozzle (Picture 24 Pos.3.15):
   Hold against the light and check the axial bores on contaminations. If necessary, clean it with pressurized air or replace it.

Reinstall in reversed order.

11. Optional accessory: mounting device

The optional available mounting device allows mounting the fog generator on stationary or mobile objects.

Part number: **65-15-000-00**



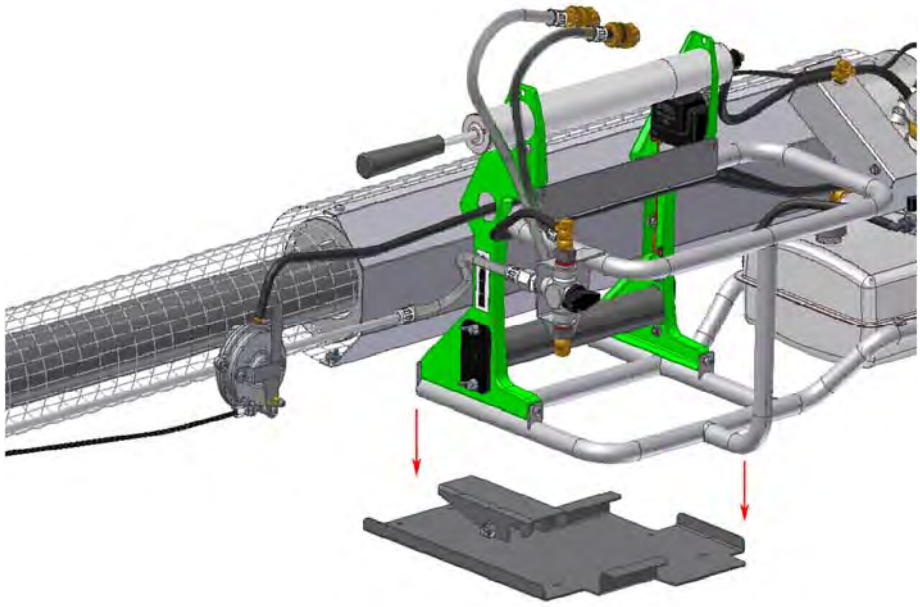
The base plate of the mounting device must be firmly screwed to the underground. The underground must be stabile and slip-resistant.

11.1 Placing the fog generator in mounting device

(in the following picture the fog generator is illustrated for a better presentation of the function without solution tank). However, the placing into the holding device is also possible with the solution tank.

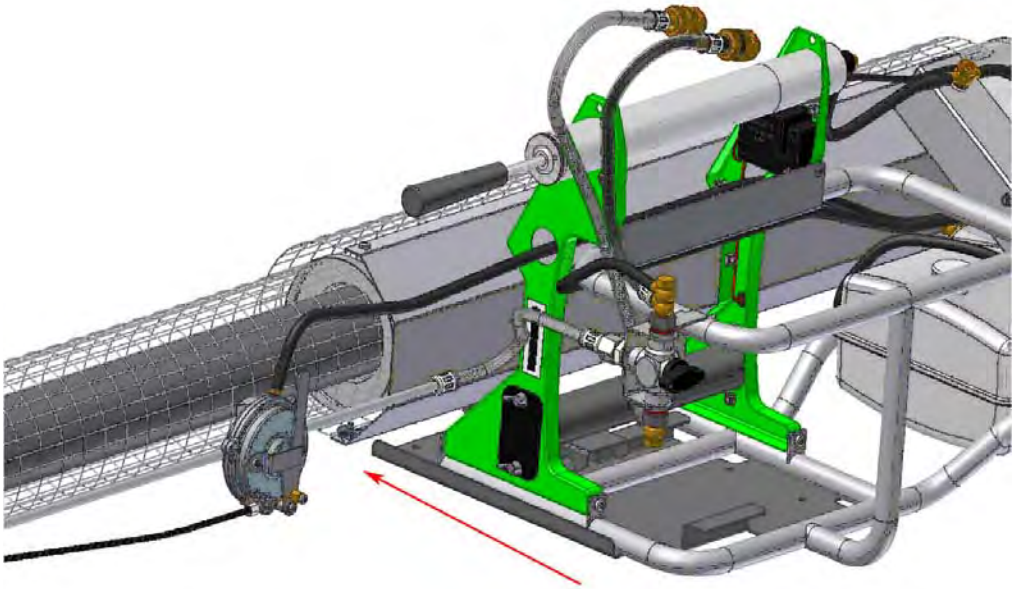
Picture 25

(SP list page 13)



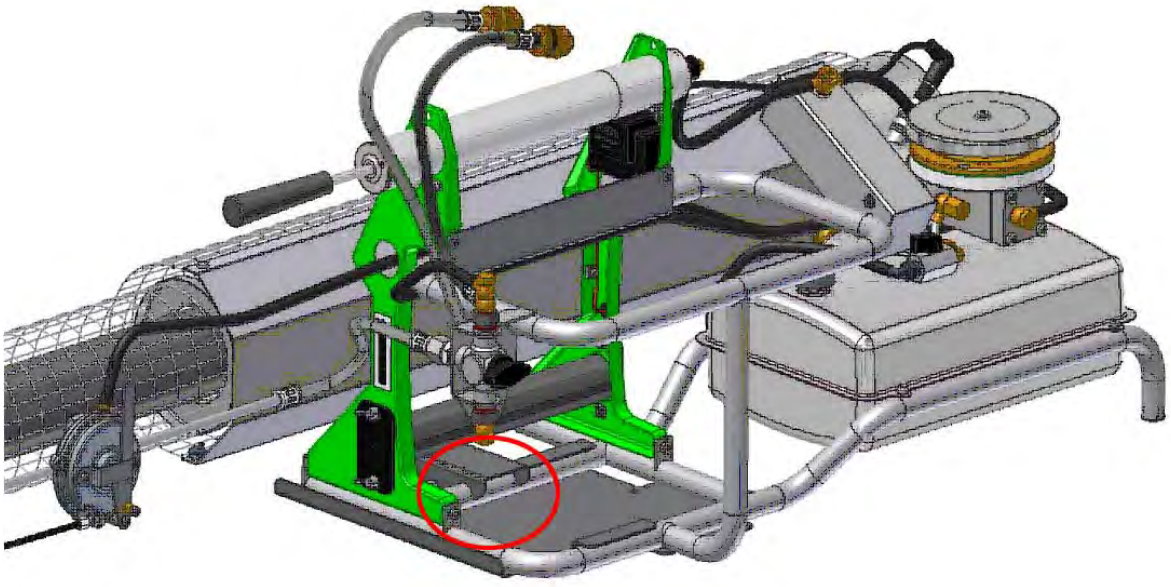
1. Place the fog generator from above onto the holding device that is screwed to the underground.

Picture 25 a.)



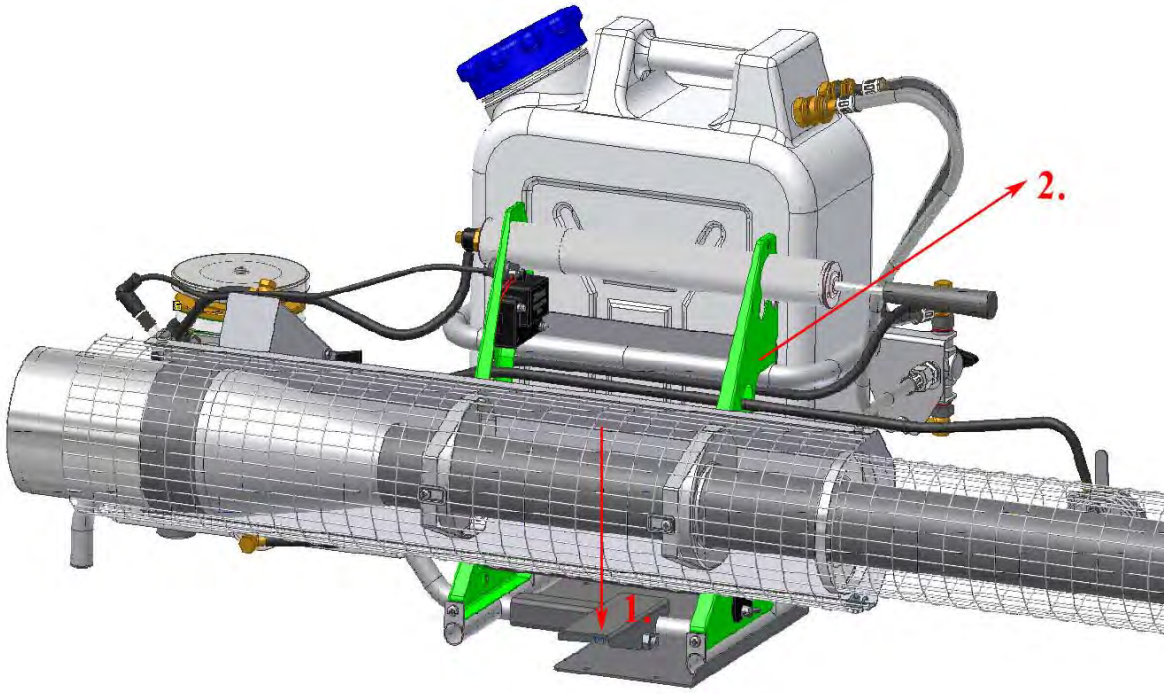
2. Move the unit sideways (according to Picture 25a.) until it automatically snaps in. (see Picture 25b.)

Picture 25b.)



11.2 Removing the fog generator from mounting device

Picture 25c.)



Remove the fog generator only from the holding device if switched off and cooled down.

1.Press and keep the rocker Picture 25c.No.1 with the foot down.
2.Hold the fog generator on both sides on the green frame parts see picture 25c.No.2 and move the unit from the anchoring.
3. Now the unit can be removed upwards.

12. Spare part catalogue

Please remember to include position number, part name, part number and required number of respective parts when ordering spare parts.

The respective individual parts can be found in the respective exploded views. The order numbers and name of the individual parts can be taken from the respective spare part lists.

Use for maintenance / repairs only original spare parts from IGEBA Geraetebau GmbH.

Please direct spare part orders to:

Your local dealer:

IGEBA Geraetebau GmbH
Telephone: +49(0)8375/92 00-0
Fax: +49(0)8375/92 00-22
Email: info@igeba.de
Website: www.igeba.de
Heinrich-Nicolaus-Strasse 15
87480 Weitnau / Germany

TF 65/20 E · TF-W 65/20 E

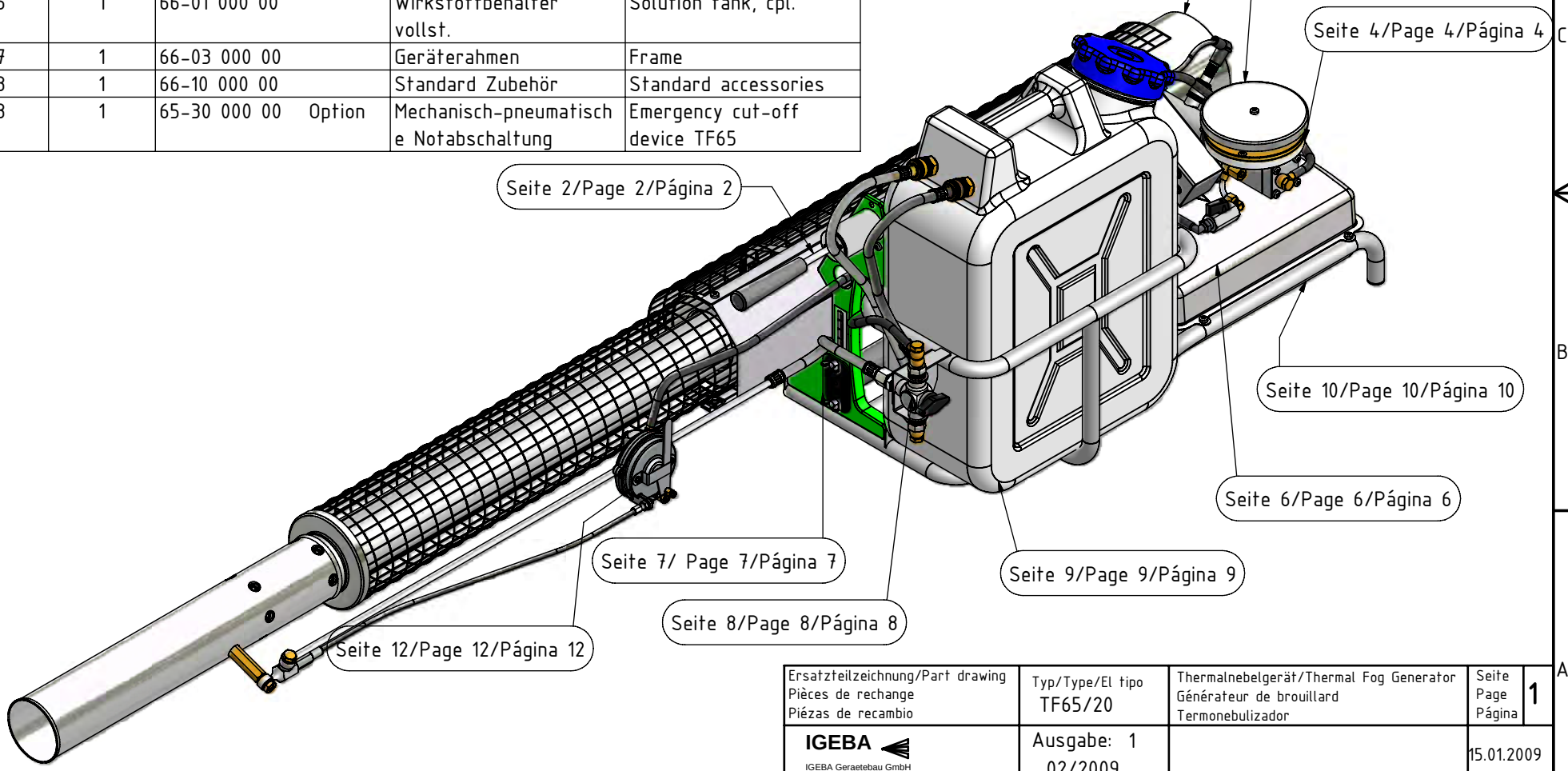
Spare parts list

DIN EN ISO 9001:2008

IGEBA®

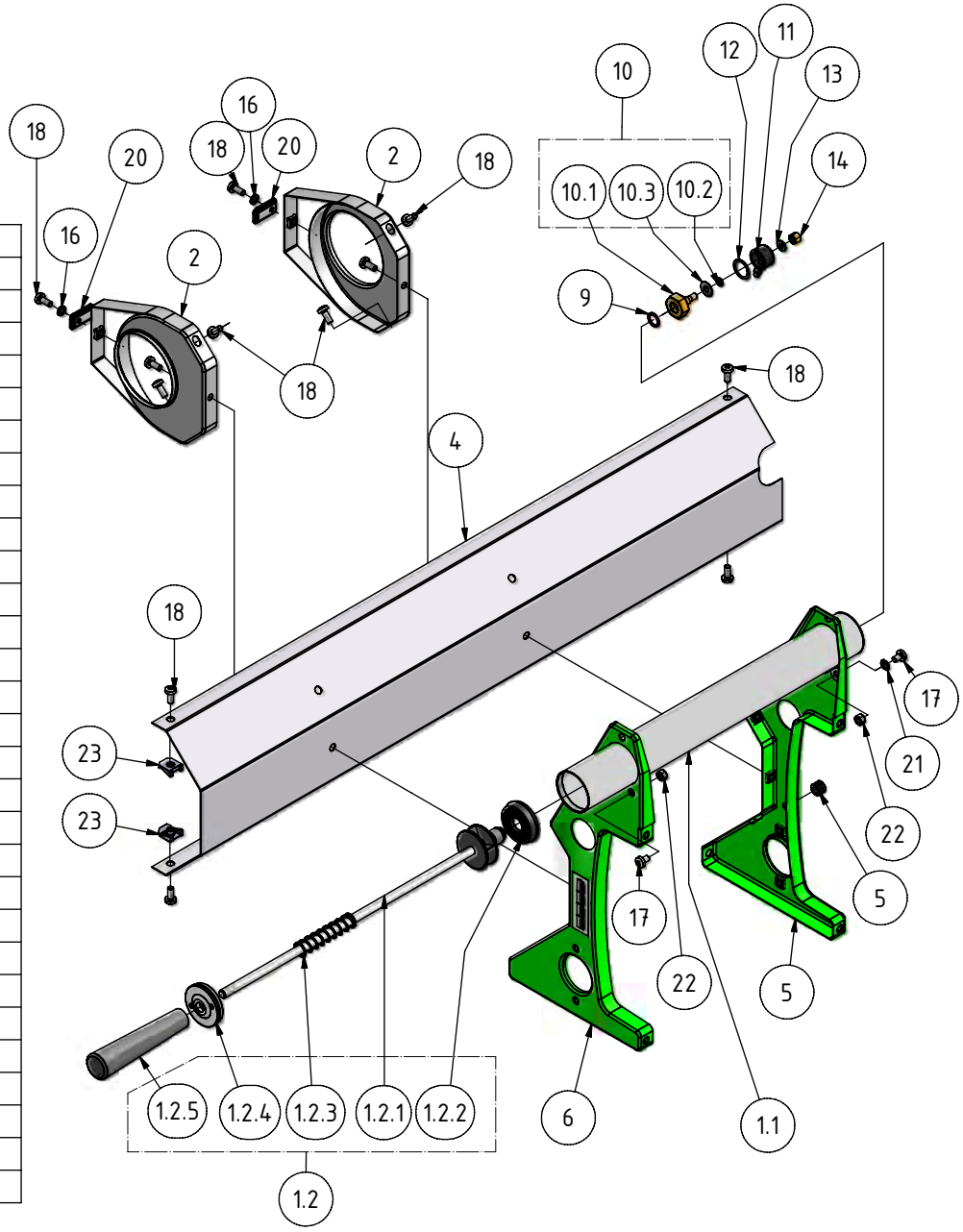
Thermal Fog Generator

ERSATZTEILLISTE/SPARE PARTS LIST				
ITEM NO.	QUANTITY	BAUTEIL NR./PART NO.	BEZEICHNUNG	SPARE PARTS NAME
1	1	8-04 000 00	Luftpumpe komplett	Pump cpl.
3	1	65-05 000 00	Resonator / Vergaser	Resonator / Carburetor
3.10	1		Lufttrichter inkl. Gewinde-Nippel	Carburetor
3.14	1	11-05 301 00	Luftventil, kpl.	Air intake valve, cpl.
8	1	65-02 000 00	Benzintank kpl.	Petrol tank cpl.
15	1	60-06 000 00	Batterie Starteinrichtung	Electric
24	1	66-07 000 00	Wirkstoffführung 20 L	Solution line system
25	1	66-01 000 00	Wirkstoffbehälter vollst.	Solution tank, cpl.
27	1	66-03 000 00	Geräterahmen	Frame
33	1	66-10 000 00	Standard Zubehör	Standard accessories
28	1	65-30 000 00 Option	Mechanisch-pneumatische Notabschaltung	Emergency cut-off device TF65



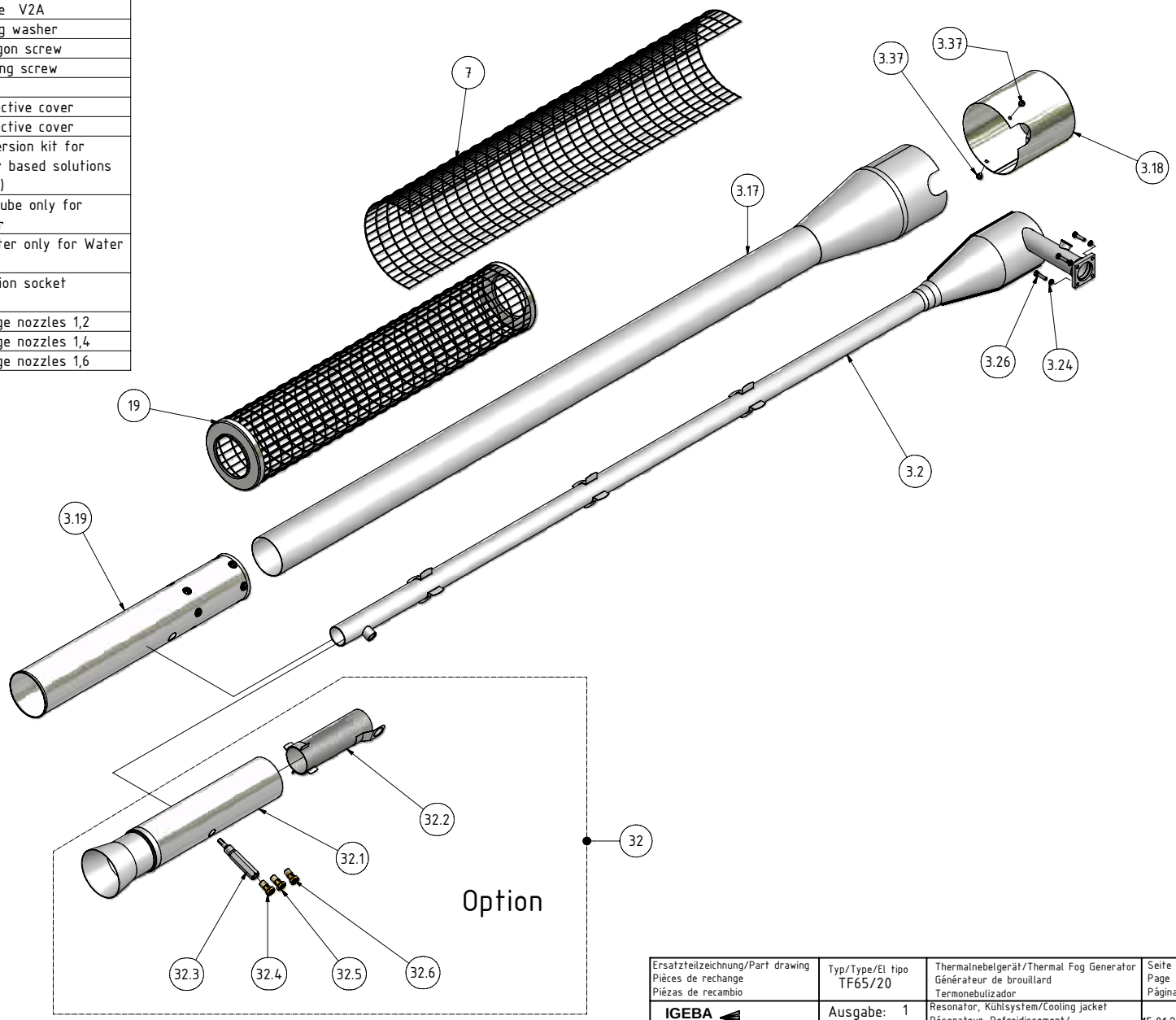
Ersatzteilzeichnung/Part drawing Pièces de rechange Piézas de recambio	Typ/Type/El tipo TF65/20	Thermalnebelgerät/Thermal Fog Generator Générateur de brouillard Termonebulizador	Seite Page Página 1
IGEBA IGEBA Geraetebau GmbH 87480 Weitnau . Germany	Ausgabe: 1 02/2009		15.01.2009

ERSATZTEILLISTE/SPARE PARTS LIST				
ITEM NO.	QUANTITY	BAUTEIL NR./PART NO.	BEZEICHNUNG	SPARE PARTS NAME
1	1	8-04 000 00	Luftpumpe komplett	Pump cpl.
1.1	1	8-04 100 00	Pumpenrohr	Pump tube
1.2	1	8-04 120 00	Pumpenstange komplett	Pump spindle, cpl.
1.2.1	1	8-04 120 03	Pumpenstange	Pump spindle
1.2.2	1	10-04 120 04	Manschette	Collar
1.2.3	1	8-04 120 02	Feder	Spring
1.2.4	1	8-04 120 01	Deckel	Cap
1.2.5	1	10-04 120 05	Griff	Handle
2	2	60-00 000 20	Halterung	Fixing device
4	1	65-00 000 02	Strahlblech	Heat deflector shield
5	1	65-00 100 00	Stütze	Support
6	1	65-00 200 00	Stütze	Support
9	1	DIN 7603 A10x13,5 Vf	Dichtring	Gasket
10	1	10-00 700 00	Druckventil vollst.	Valve cpl.
10.1	1	10-00 700 01	Ventil	Valve
10.2	1	O-Ring 5x1,5	O-Ring	O-Ring
10.3	1	10-00 700 02	Membrane	Diaphragm
11	1	10-00 820 00	Glocke	Connecting link
12	1	10-00 700 04	Dichtung	Gasket
13	1	10-00 700 03	Dichtring	Gasket
14	1	10-00 700 07	Hutmutter	Cap nut
16	3	DIN 127 - B 5	Federring	Spring washer
17	2	DIN 7985-M5x8	Linsenkopfschraube	Fill. head screw
18	12	DIN 7985 - M5x12	Linsenkopfschraube	Fill. head screw
20	2	10-00 601 01	Lasche	Bracket
21	1	DIN 6797 - A 5,3	Zahnscheibe	Tooth lock washer
22	2	DIN 934 - M5	Sechskantmutter	Hexagon nut
23	4	BM 15226	Blechmutter	Sheet metal nut



Ersatzteilzeichnung/Part drawing Pièces de rechange Piézas de recambio	Typ/Type/El tipo TF65/20	Thermalnebelgerät/Thermal Fog Generator Générateur de brouillard Termonebulizador	Seite Page Página 2
IGEBA IGEBA Geraetebau GmbH 87480 Weitnau . Germany	Ausgabe: 1 02/2009	Stützen,Luftpumpe/Support,Pump Support, Pompe/Soporte, Bomba	15.01.2009

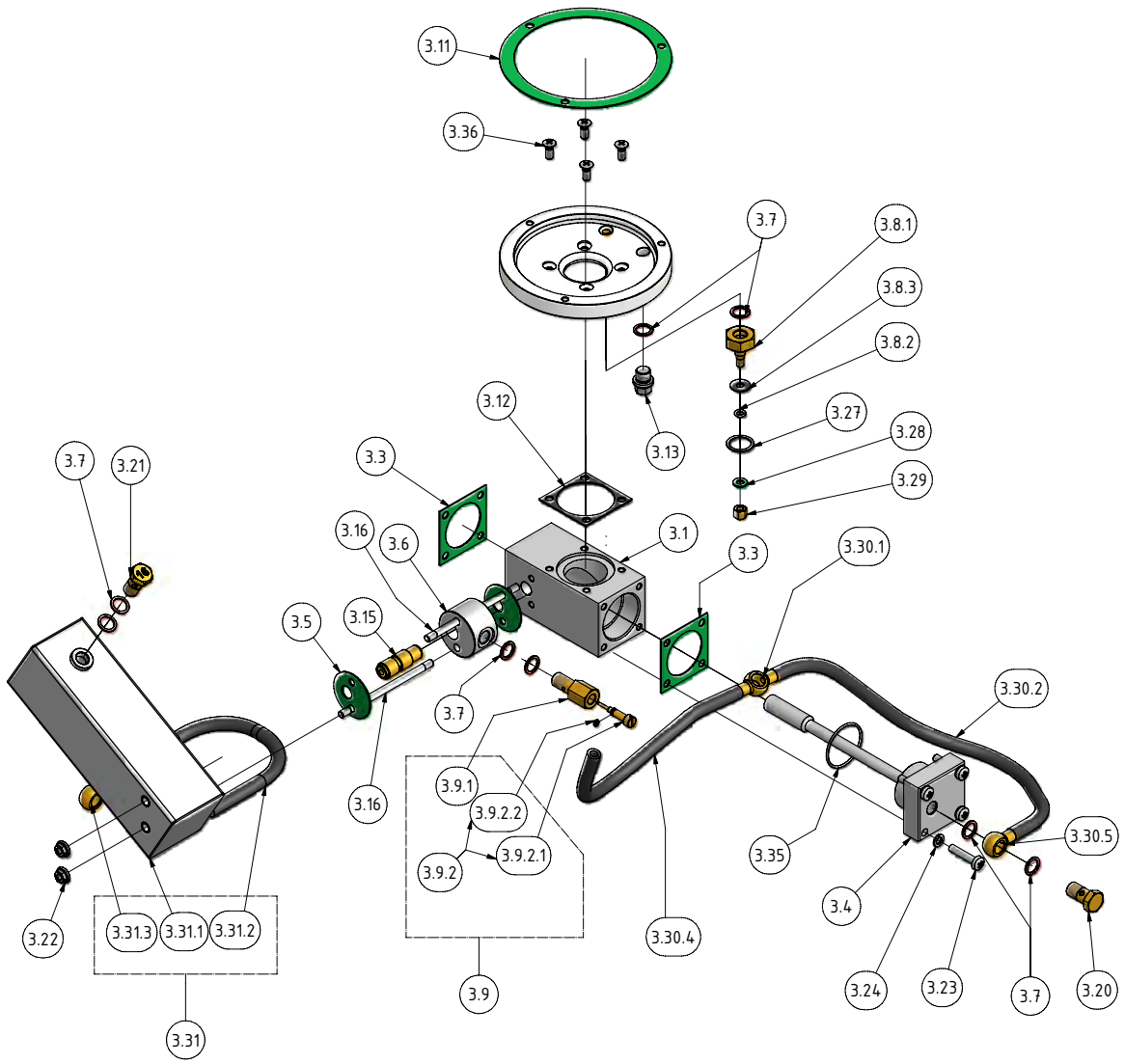
ERSATZTEILLISTE/SPARE PARTS LIST				
ITEM NO.	QUANTITY	BAUTEIL NR./PART NO.	BEZEICHNUNG	SPARE PARTS NAME
3.2	1	11-05 100 00	Resonator	Resonator
3.17	1	65-05 210 00	Kühlrohr	Cooling jacket
3.19	1	11-05 051 00	Nebelrohr nur für Öl	Fog tube only for Oil
3.22	2	DIN 6923 - M5	Sechskantmutter	Hexagon nut with flange V2A
3.24	8	DIN 127 - B 5	Federring	Spring washer
3.26	4	DIN 933 - M5 x 20	Sechskantschraube	Hexagon screw
3.37	2	DIN 7981 - ST4,8 x 9,5	Blechschraube	Tapping screw
3.18	1	60-05 220 00	Haube	Hood
7	1	65-00 600 01	Schutzgitter	Protective cover
19	1	65-00 900 00	Berührungsschutz	Protective cover
32	1	65-36 000 00	Umrüstsatz für Wasserlösungen (TF65)	Conversion kit for water based solutions (TF65)
32.1	1	60-05 050 00	Nebelrohr "W"	Fog tube only for Water
32.2	1	60-05 030 00	Resovorsatz nur für Wasser	Adapter only for Water
32.3	1	65-25 000 01	Nebelstutzen VA "W"	Solution socket
32.4	1	11-07 025 00	Dosierdüse 1,2	Dosage nozzles 1,2
32.5	1	11-07 030 00	Dosierdüse 1,4	Dosage nozzles 1,4
32.6	1	11-07 035 00	Dosierdüse 1,6	Dosage nozzles 1,6



Ersatzteilzeichnung/Part drawing Pièces de rechange Piézas de recambio	Typ/Type/El tipo TF65/20	Thermalnebelgerät/Thermal Fog Generator Générateur de brouillard Termonebulizador	Seite Page Página 3
IGEBA IGEBA Geraetebau GmbH 87480 Weitnau . Germany	Ausgabe: 1 02/2009	Resonator, Kühlsystem/Cooling jacket Résonateur, Refroidissement/ Resonador, Camisa refrigerante	15.01.2009

66-00 000 00 Ersatz

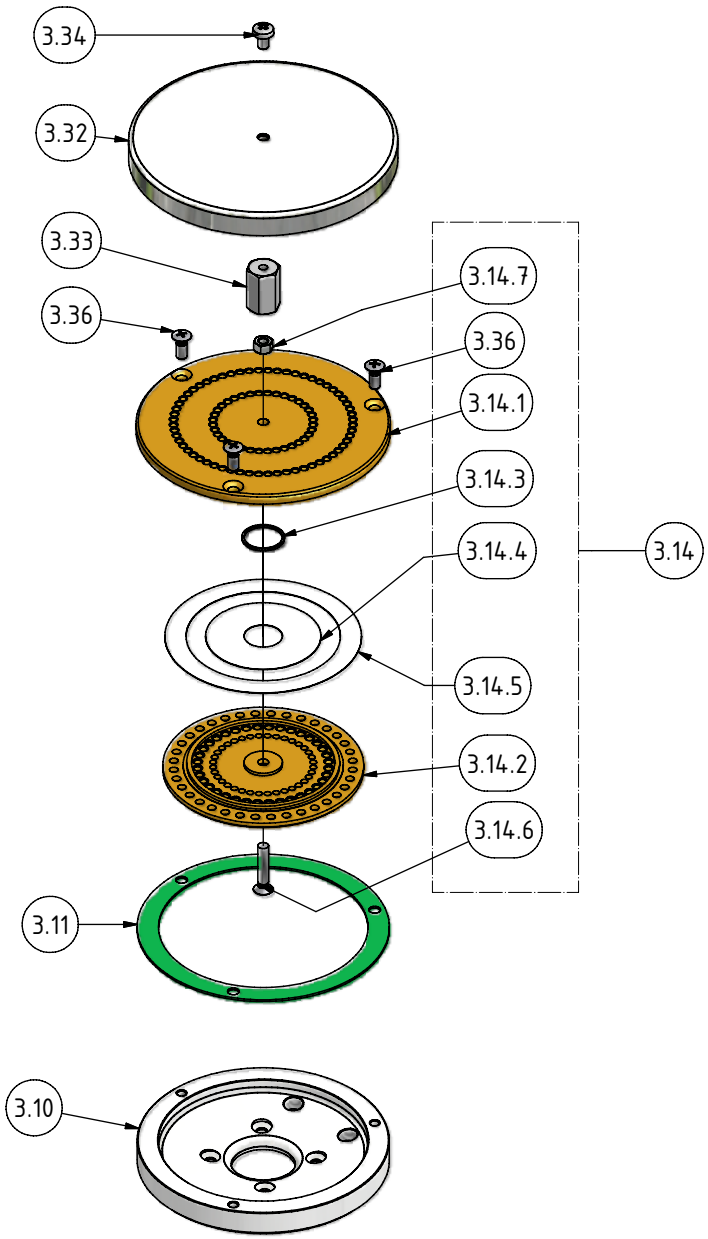
ERSATZTEILLISTE/SPARE PARTS LIST				
ITEM NO.	QUANTITY	BAUTEIL NR./PART NO.	BEZEICHNUNG	SPARE PARTS NAME
3.1	1	11-05 510 01	Mischkammer	Mixing chamber
3.3	2	11-05 000 02	Dichtung	Gasket
3.4	1	11-05 600 00	Verdrängungskörper	Swirl vane
3.5	2	10-05 500 03	Dichtung	Gasket
3.6	1	10-05 500 02	Düsenstock	Nozzle bushing
3.7	8	DIN 7603 A10x13,5 Vf	Dichtring	Gasket
3.8	1	10-00 700 00	Druckventil vollst.	Valve cpl.
3.8.1	1	10-00 700 01	Ventil	Valve
3.8.2	1	O-Ring 5x1,5	O-Ring	O-Ring
3.8.3	1	10-00 700 02	Membrane	Diaphragm
3.9	1	11-05 520 00	Benzindosierung kpl.	Gasoline dosage, cpl.
3.9.1	1	11-05 520 01	Gehäuse	Housing
3.9.2	1	10-05 520 04	Regelnadel kpl. inkl. O-Ring	Regulating needle with O-ring 3x1 Viton
3.9.2.1	1	10-05 520 02	Regelnadel	Regulating needle
3.9.2.2	1	O-Ring 3x1	O-Ring	O-Ring
3.10	1	60-05 510 00	Lufttrichter inkl. Gewinde-Nippel	Air funnel included nipple short
3.11	1	11-05 000 03	Dichtung	Gasket
3.12	1	11-05 510 03	Dichtung	Gasket
3.13	1	DIN 910 - M10 x 1	Verschlußschraube	Screw plug
3.15	1	11-05 000 06	Zerstäuberdüse	Atomizer nozzle
3.16	2	10-05 500 04	Gewindestange	Threaded rod
3.17	1	65-05 210 00	Kühlrohr	Cooling jacket
3.18	1	60-05 220 00	Haube	Hood
3.19	1	11-05 051 00	Nebelrohr nur für Öl	Fog tube only for Oil
3.20	1	DIN 7623 A4-MS	Hohlschraube	Hollow screw
3.21	1	11-07 035 00	Dosierdüse 1,6	Nozzle 1,6
3.22	2	DIN 6923 - M5	Sechskantmutter	Hexagon nut with flange V2A
3.23	4	DIN 7985 - M5x25	Linsenkopfschraube	Fill. head screw
3.24	8	DIN 127 - B 5	Federring	Spring washer
3.27	1	10-00 700 04	Dichtung	Gasket
3.28	1	10-00 700 03	Dichtring	Gasket
3.29	1	10-00 700 07	Hutmutter	Cap nut
3.30	1	60-05 411 00	Startluftleitung	Starting air line , cpl.
3.30.1	1	5751-MS	Doppel-Schlauchnippel	
3.30.2	1	8-00 700 01	Schlauch, 300mm	Tube
3.30.4	1	60-05 411 01	Schlauch	tube
3.30.5	1	11-00 702 10	Ringstück mit Schlauchnippel	Ring hose nipple
3.31	1	60-05 700 00	Beruhigungsbehälter vollst.	Surge tank cpl.
3.31.1	1	60-05 710 00	Beruhigungsbehälter geschweißt	Surge tank
3.31.2	1	60-05 700 04	Schlauch	Tube
3.31.3	1	11-00 702 10	Ringstück mit Schlauchnippel	Ring hose nipple
3.32	1	60-00 950 10	Schutzplatte für Luftventil	Plate for air valve
3.33	1	11-00 950 01	Distanzstück	Spacer piece
3.34	1	DIN 7985-M5x8	Linsenkopfschraube	Fill. head screw
3.35	1	O-Ring 31x1,5	O-Ring	O-Ring
3.36	7	DIN 966 - M5x12	Linsen-Senkschraube	Countersunk head screw



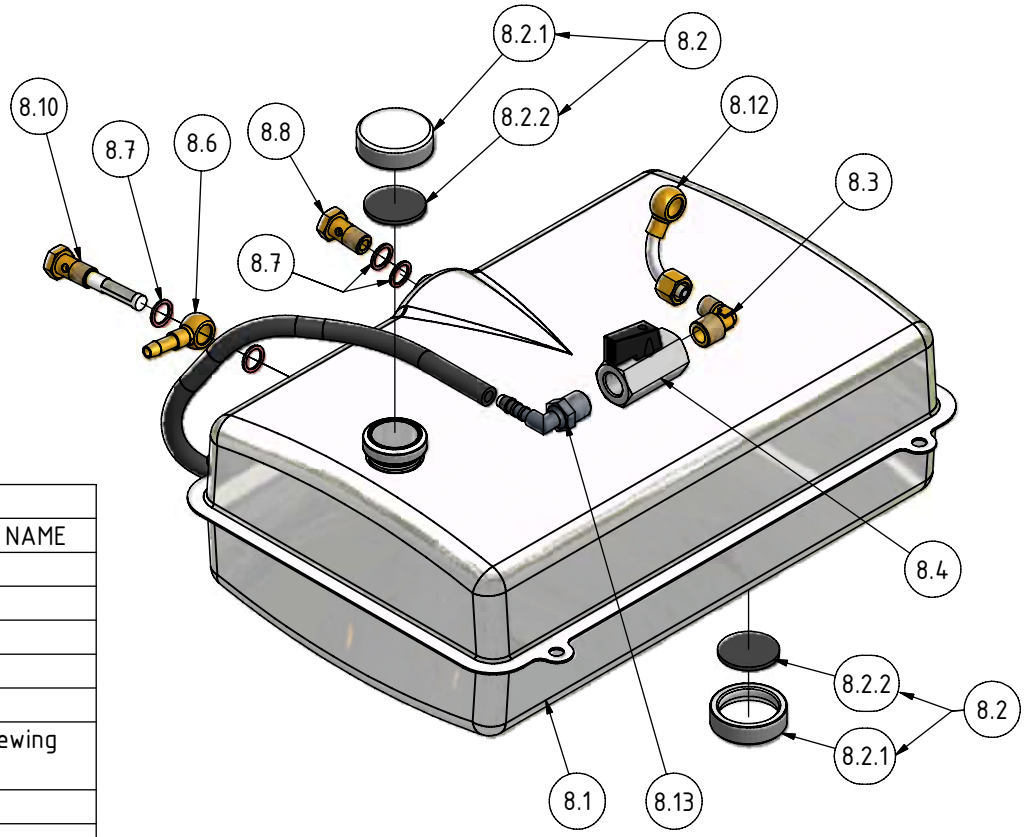
Ersatzteilzeichnung/Part drawing Pièces de rechange Piézas de recambio	Typ/Type/El tipo TF65/20	Thermalnebelgerät/Thermal Fog Generator Générateur de brouillard Termonebulizador	Seite Page Página 4
IGEBA IGEBA Geraetebau GmbH 87480 Weitnau . Germany	Ausgabe: 1 02/2009	Vergaser/Carburetor Carburateur/Carburador	15.01.2009

66-00 000 00 Ersatz

ERSATZTEILLISTE/SPARE PARTS LIST				
ITEM NO.	QUANTITY	BAUTEIL NR./PART NO.	BEZEICHNUNG	SPARE PARTS NAME
3.10	1	60-05 510 00	Lufttrichter inkl. Gewinde-Nippel	Air funnel included nipple short
3.11	1	11-05 000 03	Dichtung	Gasket
3.14	1	11-05 301 00	Luftventil, kpl.	Air intake valve, cpl.
3.14.1	1	11-05 301 01	Ventilplatte	Valve plate
3.14.2	1	11-05 301 02	Lochplatte	Spacer plate
3.14.3	1	11-05 300 05	Dichtring	Gasket
3.14.4	1	11-05 300 04	Membrane	Diaphragm (inner)
3.14.5	1	11-05 300 03	Membrane (außen)	Diaphragm (outer)
3.14.7	1	DIN 934 - M5	Sechskantmutter	Hexagon nut
3.14.6	1	DIN 966 - M5x25	Linsen-Senkschraube	Countersunk head screw
3.32	1	60-00 950 10	Schutzplatte für Luftventil	Plate for air valve
3.33	1	11-00 950 01	Distanzstück	Spacer piece
3.34	1	DIN 7985-M5x8	Linsenkopfschraube	Fill. head screw
3.36	7	DIN 966 - M5x12	Linsen-Senkschraube	Countersunk head screw



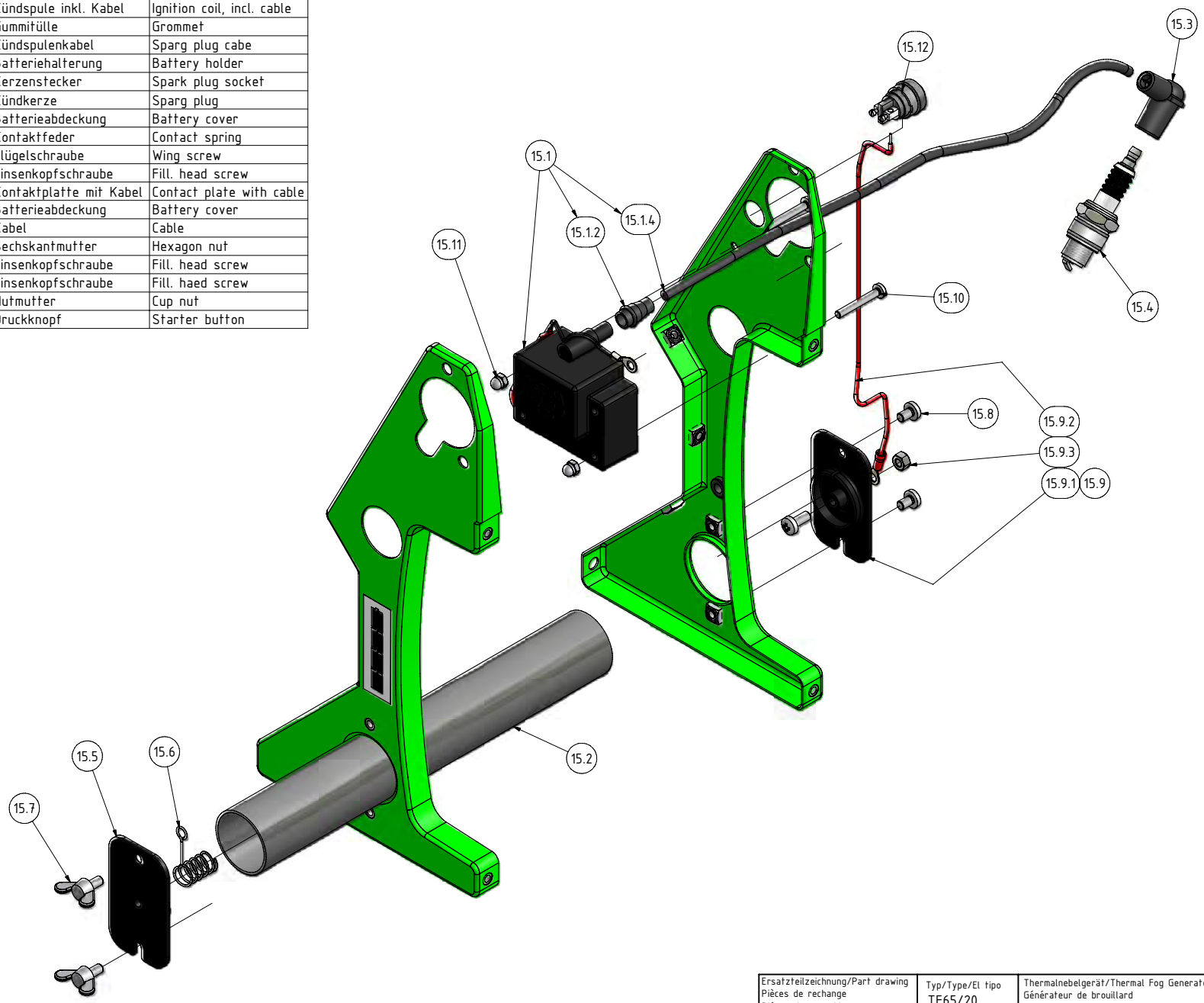
Ersatzteilzeichnung/Part drawing Pièces de rechange Piézas de recambio	Typ/Type/El tipo TF65/20	Thermalnebelgerät/Thermal Fog Generator Générateur de brouillard Termonebulizador	Seite Page Página 5
IGEBA IGEBA Geraetebau GmbH 87480 Weitnau . Germany	Ausgabe: 1 02/2009	Luftventil/Air intake valve Soupape à aérage/válvula de aire	15.01.2009



ERSATZTEILLISTE/SPARE PARTS LIST				
ITEM NO.	QUANTITY	BAUTEIL NR./PART NO.	BEZEICHNUNG	SPARE PARTS NAME
8	1	65-02 000 00	Benzintank kpl.	Petrol tank cpl.
8.1	1	65-02 100 00	Benzintank TF65	Petrol tank
8.2	2	10-02 200 00	Benzintankdeckel kpl.	Cap cpl.
8.2.1	1	10-02 200 01	Deckel	Cap
8.2.2	1	10-02 200 02	Dichtung	Gasket
8.3	1	109 06 13	Winkel-Einschraubversch raubung	Angle insert screwing
8.4	1	11-02 301 00	Durchgangshahn 1/4"	Fuel tap
8.6	1	11-00 702 10	Ringstück mit Schlauchnippel	Ring hose nipple
8.7	4	DIN 7603 A10x13,5 Vf	Dichtring	Gasket
8.8	1	DIN 7623 A4-MS	Hohlschraube	Hollow screw
8.10	1	10-14 500 00	Hohlschraube mit Sieb	Hollow screw with filter
8.11	1	65-02 000 01	Schlauch	Tube
8.12	1	65-02 300 00	Benzinleitung	Gasolin pipe
8.13	1	94-06 500 06	Winkel R1/4 x Ø6	Angleinsert screwing

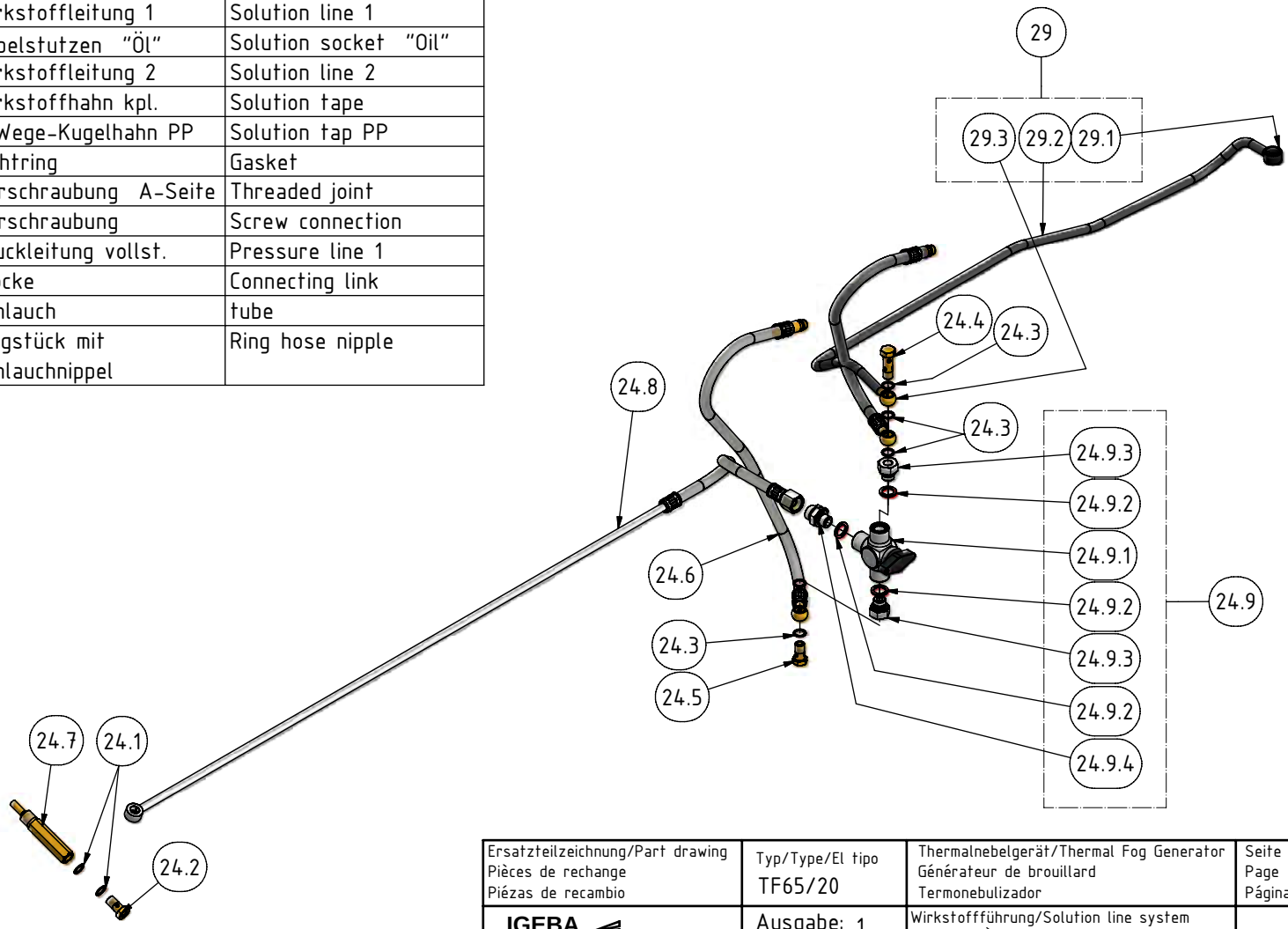
Ersatzteilzeichnung/Part drawing Pièces de rechange Piézas de recambio	Typ/Type/El tipo TF65/20	Thermalnebelgerät/Thermal Fog Generator Générateur de brouillard Termonebulizador	Seite Page Página 6
IGEBA IGEBA Geraetebau GmbH 87480 Weitnau . Germany	Ausgabe: 1 02/2009	Benzintank vollst./Petrol tank cpl. Bac à essence/Depósito de gasolina	15.01.2009

ERSATZTEILLISTE/SPARE PARTS LIST				
ITEM NO.	QUANTITY	BAUTEIL NR./PART NO.	BEZEICHNUNG	SPARE PARTS NAME
15	1	60-06 000 00	Batterie Starteinrichtung	Electric
15.1	1	11-06 300 00	Zündspule inkl. Kabel	Ignition coil, incl. cable
15.1.2	1	10-06 300 03	Gummitülle	Grommet
15.1.4	1	11-06 300 02	Zündspulenkabel	Sparg plug cabe
15.2	1	10-06 000 01	Batteriehalterung	Battery holder
15.3	1	10-06 000 06	Kerzenstecker	Spark plug socket
15.4	1	10-06 000 07	Zündkerze	Sparg plug
15.5	1	10-06 100 01	Batterieabdeckung	Battery cover
15.6	1	10-06 100 03	Kontaktfeder	Contact spring
15.7	2	DIN 316 - M5 x 10	Flügelschraube	Wing screw
15.8	2	DIN 7985-M5x8	Linsenkopfschraube	Fill. head screw
15.9	1	10-06 200 00	Kontaktplatte mit Kabel	Contact plate with cable
15.9.1	1	10-06 100 01	Batterieabdeckung	Battery cover
15.9.2	1	10-06 210 00	Kabel	Cable
15.9.3	1	DIN 934 - M5	Sechskantmutter	Hexagon nut
15.9.4	1	DIN 7985 - M5x12	Linsenkopfschraube	Fill. head screw
15.10	2	DIN 7985 - M4x30	Linsenkopfschraube	Fill. haed screw
15.11	2	DIN 1587 - M4	Hutmutter	Cup nut
15.12	1	10-06 000 04	Druckknopf	Starter button

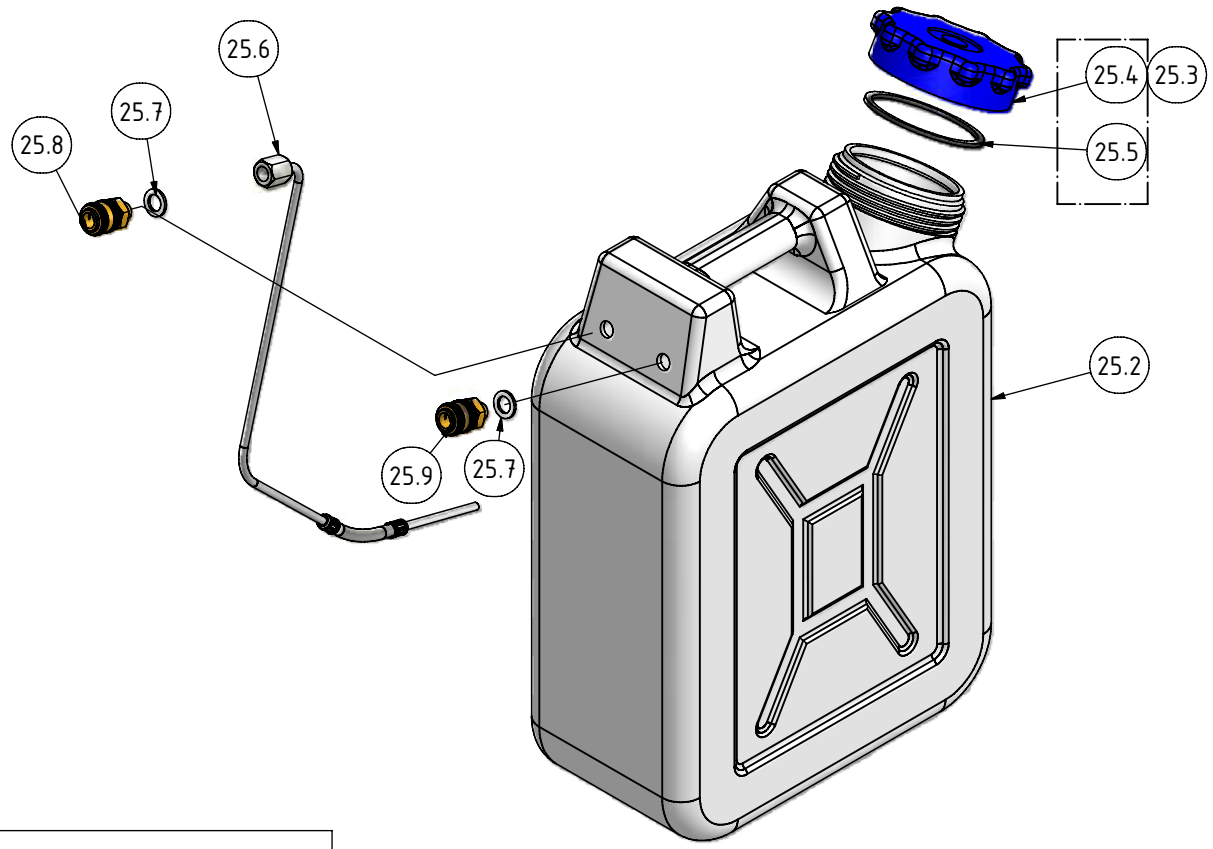


Ersatzteilzeichnung/Part drawing Pièces de rechange Piézas de recambio	Typ/Type/El tipo TF65/20	Thermalnebelgerät/Thermal Fog Generator Générateur de brouillard Termonebulizador	Seite Page Página 7
IGEBA IGEBA Geraetebau GmbH 87480 Weitnau . Germany	Ausgabe: 1 02/2009	Batterie Starteinrichtung/ Battery starting device/starter électrique Arrancador eléctrico	15.01.2009

ERSATZTEILLISTE/SPARE PARTS LIST				
ITEM NO.	QUANTITY	BAUTEIL NR./PART NO.	BEZEICHNUNG	SPARE PARTS NAME
24	1	66-07 000 00	Wirkstoffführung 20 L	Solution line system
24.1	2	DIN 7603 A10x13,5 Cu	Dichtring	Gasket
24.2	1	11-07 030 00	Dosierdüse 1,4	Dosage nozzles 1,4
	1	11-07 040 00	Dosierdüse 2,0	Dosage nozzles 2,0
	1	11-07 050 00	Dosierdüse 2,7	Dosage nozzles 2,7
24.3	5	DIN 7603 A10x13,5 Vf	Dichtring	Gasket
24.4	1	10-00 310 01	Doppelhohlschraube	Double hollow screw long
24.5	1	DIN 7623 A4-MS	Hohlschraube	Hollow screw
24.6	1	66-07 200 00	Wirkstoffleitung 1	Solution line 1
24.7	1	65-07 000 01	Nebelstutzen "Öl"	Solution socket "Oil"
24.8	1	65-07 400 00	Wirkstoffleitung 2	Solution line 2
24.9	1	66-07 100 00	Wirkstoffhahn kpl.	Solution tape
24.9.1	1	6L0702-00	3-Wege-Kugelhahn PP	Solution tap PP
24.9.2	3	DIN 7603 A13x18 PA	Dichtring	Gasket
24.9.3	2	11-25 000 01	Verschraubung A-Seite	Threaded joint
24.9.4	1	66-07 100 01	Verschraubung	Screw connection
29	1	66-00 800 00	Druckleitung vollst.	Pressure line 1
29.1	1	10-00 820 00	Glocke	Connecting link
29.2	1	66-00 800 01	Schlauch	tube
29.3	1	11-00 702 10	Ringstück mit Schlauchnippel	Ring hose nipple



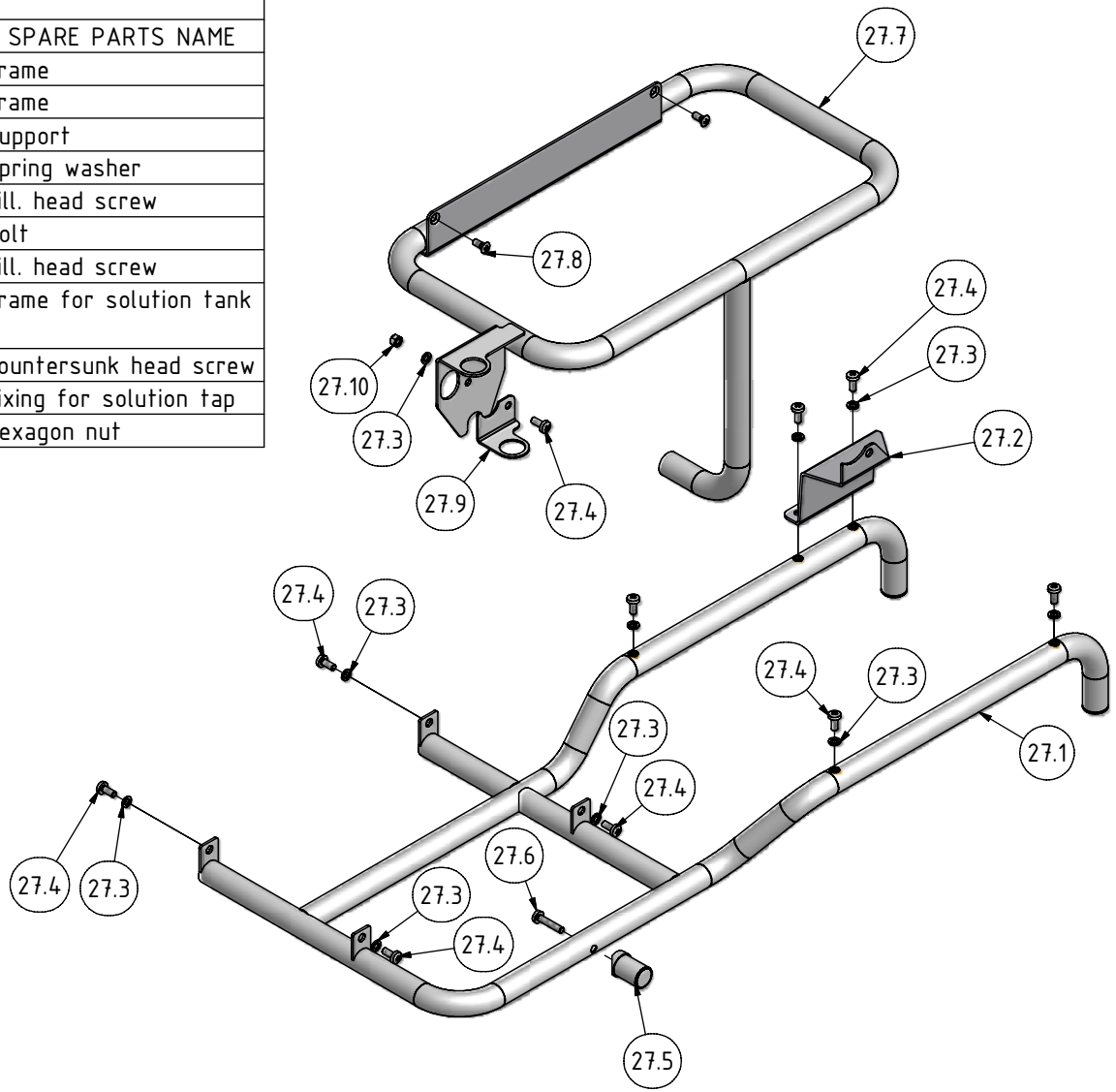
Ersatzteilzeichnung/Part drawing Pièces de rechange Piézas de recambio	Typ/Type/El tipo TF65/20	Thermalnebelgerät/Thermal Fog Generator Générateur de brouillard Termonebulizador	Seite Page Página 8
IGEBA IGEBA Geraetebau GmbH 87480 Weitnau . Germany	Ausgabe: 1 02/2009	Wirkstoffführung/Solution line system Conduite d`agents actifs Línea del agente activo	15.01.2009



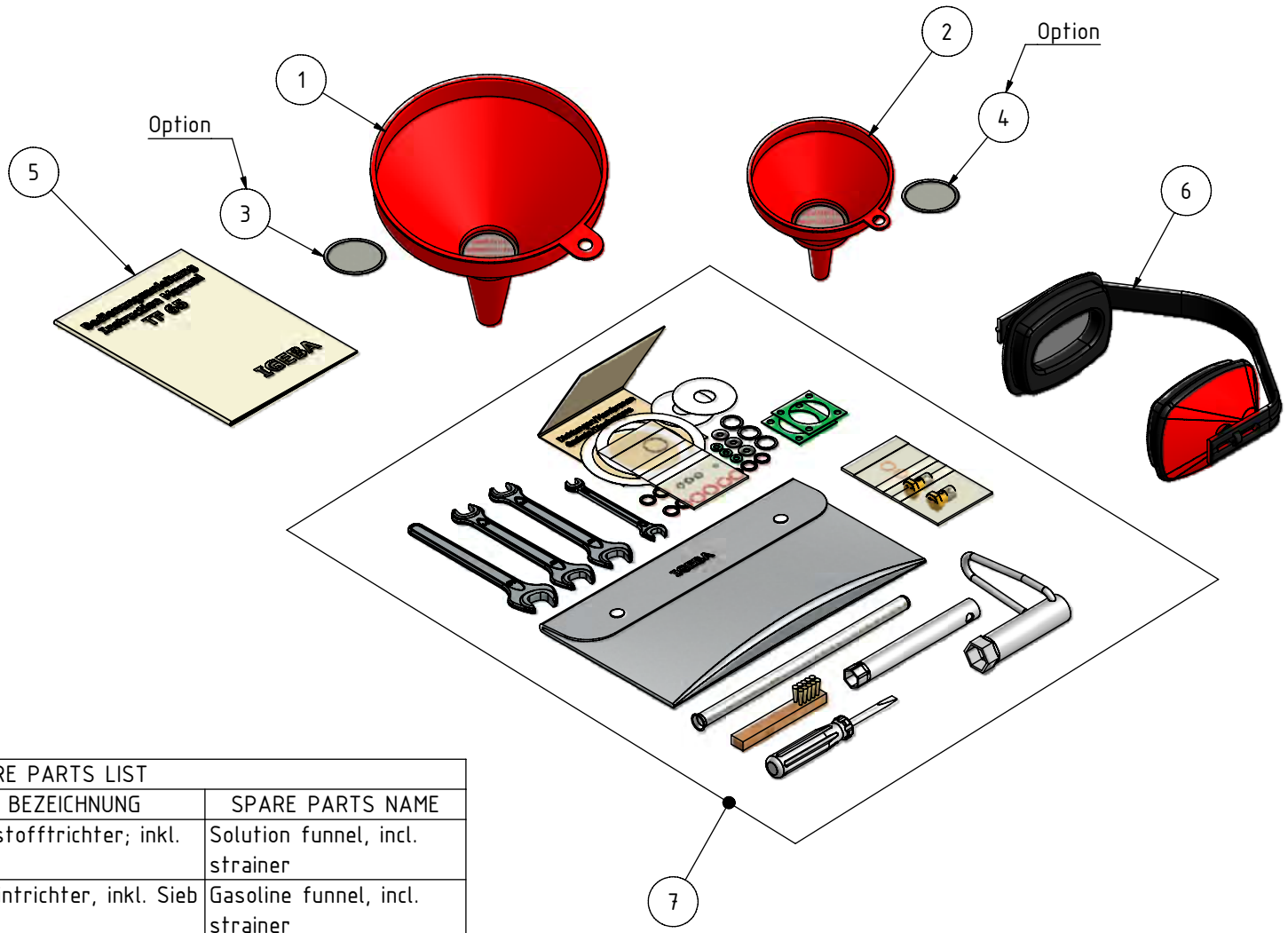
ERSATZTEILLISTE/SPARE PARTS LIST				
ITEM NO.	QUANTITY	BAUTEIL NR./PART NO.	BEZEICHNUNG	SPARE PARTS NAME
25.2	1	13-01 100 01	Wirkstoffbehälter 20l	Solution tank, 20 l
25.3	1	13-01 130 00	Tankdeckel vollst.	Tank cap cpl.
25.4	1	13-01 135 00	Tankdeckel	Tank cap
25.5	1	13-01 130 01	Dichtung	Gasket
25.6	1	66-01 110 00	Steigleitung	Rising line
25.7	2	13-01 100 02	Dichtring	Gasket
25.8	1	13-01 140 00	Steckkupplung	Quick coupling
25.9	1	13-01 150 00	Steckkupplung schwarz	Quick coupling black

Ersatzteilzeichnung/Part drawing Pièces de rechange Piézas de recambio	Typ/Type/El tipo TF65/20	Thermalnebelgerät/Thermal Fog Generator Générateur de brouillard Termonebulizador	Seite Page Página 9
IGEBA IGEBA Geraetebau GmbH 87480 Weitnau . Germany	Ausgabe: 1 02/2009	Wirkstoffbehälter 20 l/Solution tank 20 l Conteneur 20l/Depósito 20l	15.01.2009

ERSATZTEILLISTE/SPARE PARTS LIST				
ITEM NO.	QUANTITY	BAUTEIL NR./PART NO.	BEZEICHNUNG	SPARE PARTS NAME
27	1	66-03 000 00	Geräterahmen	Frame
27.1	1	65-03 100 00	Rahmen kpl.	Frame
27.2	1	65-03 000 01	Haltewinkel für Reso	Support
27.3	10	DIN 127 - B 5	Federring	Spring washer
27.4	10	DIN 7985 - M5x12	Linsenkopfschraube	Fill. head screw
27.5	1	66-03 000 01	Zentrierteil	Bolt
27.6	1	DIN 7985 - M5x25	Linsenkopfschraube	Fill. head screw
27.7	1	66-03 200 00	Rahmen für 20 L geschweißt	Frame for solution tank
27.8	2	DIN 966 - M5x8	Linsen-Senkschraube	Countersunk head screw
27.9	1	66-03 000 02	Fixierwinkel	Fixing for solution tap
27.10	1	DIN 934 - M5	Sechskantmutter	Hexagon nut



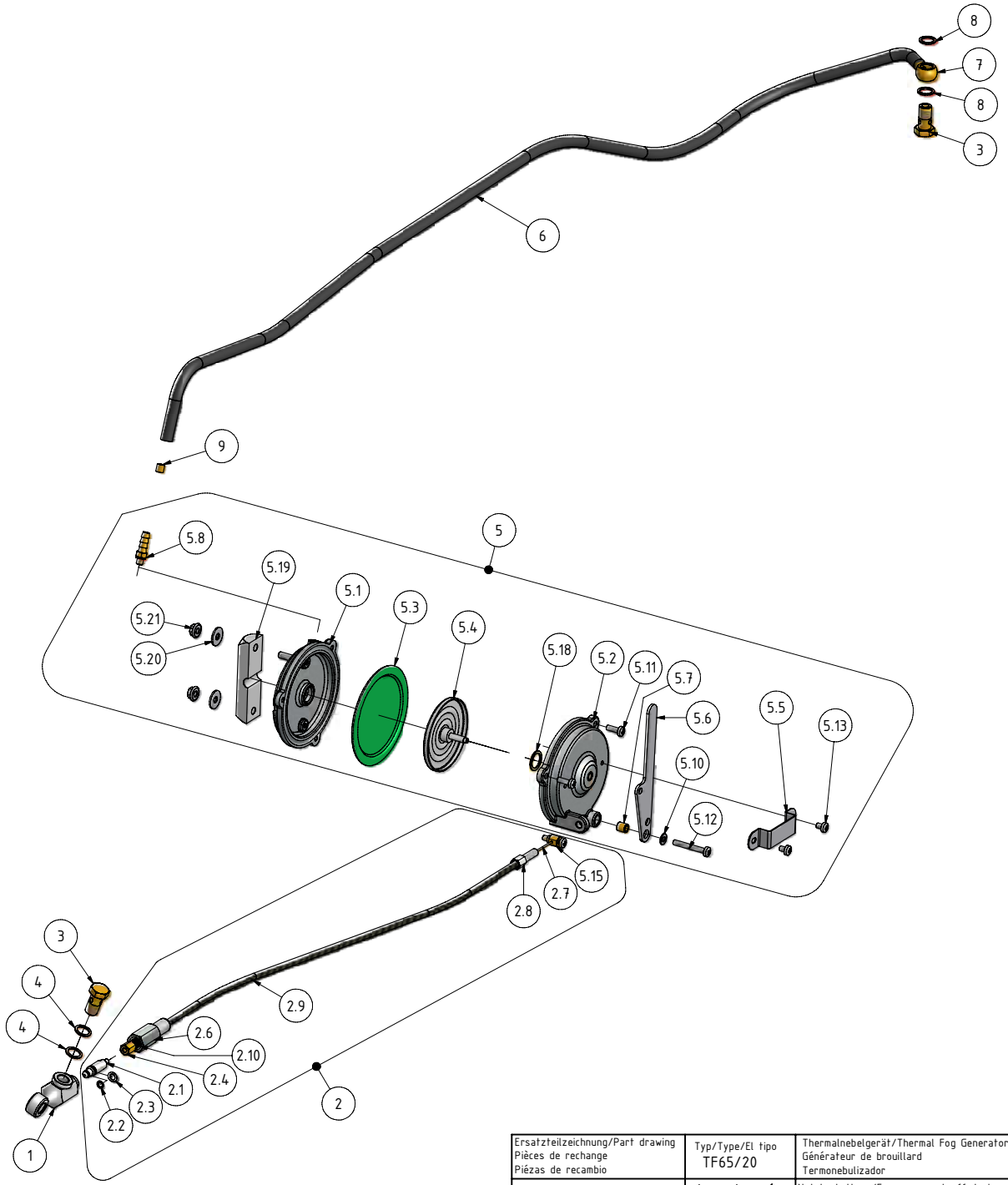
Ersatzteilzeichnung/Part drawing Pièces de rechange Piézas de recambio	Typ/Type/El tipo TF65/20	Thermalnebelgerät/Thermal Fog Generator Générateur de brouillard Termonebulizador	Seite Page Página 10
IGEBA IGEBA Geraetebau GmbH 87480 Weitnau . Germany	Ausgabe: 1 02/2009	Rahmen/Frame/Châssis/Bastidor	15.01.2009



ERSATZTEILLISTE/SPARE PARTS LIST				
ITEM NO.	QUANTITY	BAUTEIL NR./PART NO.	BEZEICHNUNG	SPARE PARTS NAME
1	1	10-00 000 22	Wirkstofftrichter; inkl. Sieb	Solution funnel, incl. strainer
2	1	10-00 000 23	Benzintrichter, inkl. Sieb	Gasoline funnel, incl. strainer
3	1	10-00 000 50 Option	Sieb für Wirkstofftrichter	Strainer (Solution funnel) Ø 52
4	1	10-00 000 51 Option	Sieb für Benzintrichter	Strainer (Fuel funnel) Ø 48
5	1	65-10 000 01	Bedienungsanleitung TF65	Instruction Manual TF 65
6	1	11-10 000 01	Gehörschutz	Ear protection
7	1	65-10 200 00	Werkzeugtasche TF65	Tool bag, cpl. for TF65

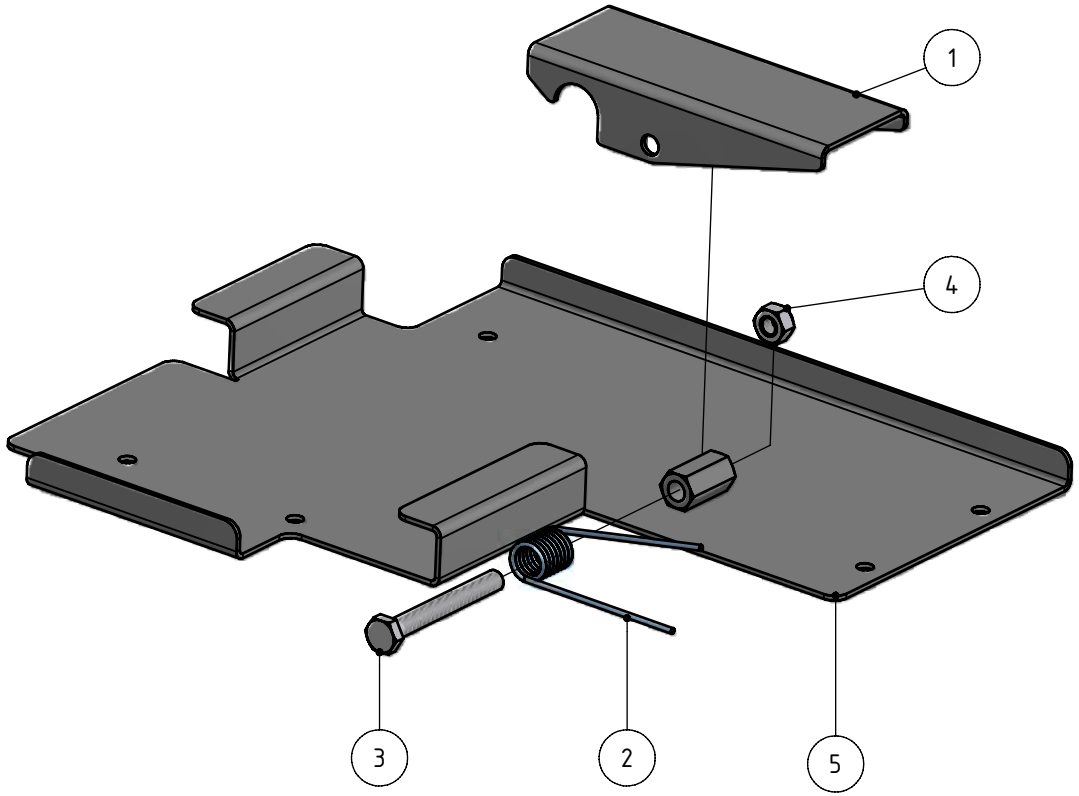
Ersatzteilzeichnung/Part drawing Pièces de rechange Piézas de recambio	Typ/Type/El tipo TF65/20	Thermalnebelgerät/Thermal Fog Generator Générateur de brouillard Termonebulizador	Seite Page Página 11
IGEBA IGEBA Geraetebau GmbH 87480 Weitnau . Germany	Ausgabe: 1 02/2009	Standard Zubehör/Standard accessories accessoires standard/estándar accesorios	15.01.2009

ERSATZTEILLISTE/SPARE PARTS LIST				
ITEM NO.	QUANTITY	BAUTEIL NR./PART NO.	BEZEICHNUNG	SPARE PARTS NAME
1	1	8-30 301 00	Anschlußteil	Connecting piece
2	1	60-30 200 00	Bowdenzug kpl.	Bowden wire cpl.
2.1	1	60-30 200 01	Sperrstift	Locking pin
2.2	1	O-Ring 4x1	O-Ring	O-Ring
2.3	1	O-Ring 5x1,5	O-Ring	O-Ring
2.4	1	8-30 200 02	Mutter	Hexagon nut
2.6	1	8-30 200 01	Schraubhülse	Screw bushing
2.7	1	60-30 200 04	Litze mit Lötnippel	Stranded cord with solder nipple
2.8	1	8-30 200 06	Verstellschraube mit Mutter	Adjustment screw with nut
2.9	1	60-30 200 05	Bowdenzughülle	Bowden wire wrap
2.10	1	VD-173 B	Druckfeder	Spring
3	2	DIN 7623 A4-MS	Hohlschraube	Hollow screw
4	2	DIN 7603 A10x13,5 Cu	Dichtring	Gasket
5	1	11-30 100 00	Druckdose kpl.	Pressure cell
5.1	1	8-30 100 01	Gehäuse-Unterteil	Housing underpart
5.2	1	8-30 100 02	Gehäuse-Oberteil	Housing top
5.3	1	8-30 100 03	Membrane	Diaphragm
5.4	1	8-30 150 00	Kolben vollst.	Piston cpl.
5.5	1	8-30 100 06	Halterung	Bow
5.6	1	8-30 100 05	Hebel	Lever
5.7	1	8-30 100 07	Lagerbuchse	Bearing bush
5.8	1	8-30 100 08	Schlauchnippel	Hose stem
5.9	1	DIN 7603 A5x8 PA	Dichtring	Gasket
5.10	1	DIN 125-1 - B 4,3	Unterlegscheibe	Plain washer
5.11	2	DIN 7985 - M4x12	Linsenkopfschraube	Fill. head screw
5.12	1	DIN 7985 - M4x30	Linsenkopfschraube	Fill. haed screw
5.13	3	DIN 7985 - M4x6	Linsenkopfschraube	Fill. head screw
5.14	1	10-03 000 04	Druckfeder	Spring
5.15	1	8-30 200 03	Schraubnippel	Screw nipple
5.17	2	DIN 913 - M5 x 25	Gewindestift	
5.18	1	60-30 100 01	Distanzscheibe	Distanz disc
5.19	1	11-30 100 04	Halteschelle	Support
5.20	2	DIN 9021 - 5,3	Unterlegscheibe	Plain washer
5.21	2	DIN 6923 - M5	Sechskantmutter	Hexagon nut with flange V2A
6	1	65-30 500 01	Schlauch	Hose
7	1	11-00 702 10	Ringstück mit Schlauchnippel	Ring hose nipple
8	2	DIN 7603 A10x13,5 Vf	Dichtring	Gasket
9	1	10-00 300 02	Düse	Nozzle 1,4
10	1	ISO 4032 - M6	Sechskantmutter	



Ersatzteilzeichnung/Part drawing Pièces de rechange Piézas de recambio	Typ/Type/El tipo TF65/20	Thermalnebelgerät/Thermal Fog Generator Générateur de brouillard Termonebulizador	Seite Page Página 12
IGEBA IGEBA Geraetebau GmbH 87480 Weitnau . Germany	Ausgabe: 1 02/2009	Notabschaltung/Emergency cut-off device Coupure automatique du produit/ Desconexión automática de solucion	15.01.2009

66-00 000 00 Ersatz



ERSATZTEILLISTE/SPARE PARTS LIST				
ITEM NO.	QUANTITY	BAUTEIL NR./PART NO.	BEZEICHNUNG	SPARE PARTS NAME
1	1	65-15 000 01	Wippe	Compensator
2	1	T-16809R	Feder	Spring
3	1	ISO 4017 - M8 x 65	Sechskantschraube	Screw
4	1	DIN 985-M8	Sechskantmutter	Hex-nut
5	1	65-15 100 00	Grundplatte geschweißt	Baseplate

Ersatzteilzeichnung/Part drawing Pièces de rechange Piézas de recambio	Typ/Type/El tipo TF65	Thermal Fog Generator	Seite Page Página 13
IGEBA IGEBA Geraetebau GmbH 87480 Weitnau . Germany	Ausgabe: 08/2009	Haltevorrichtung (optionales Zubehör) Fixation device (optional accessory) Dispositif de serrage (optionnel) Dispositivo de fijación (opcional)	04.08.2009