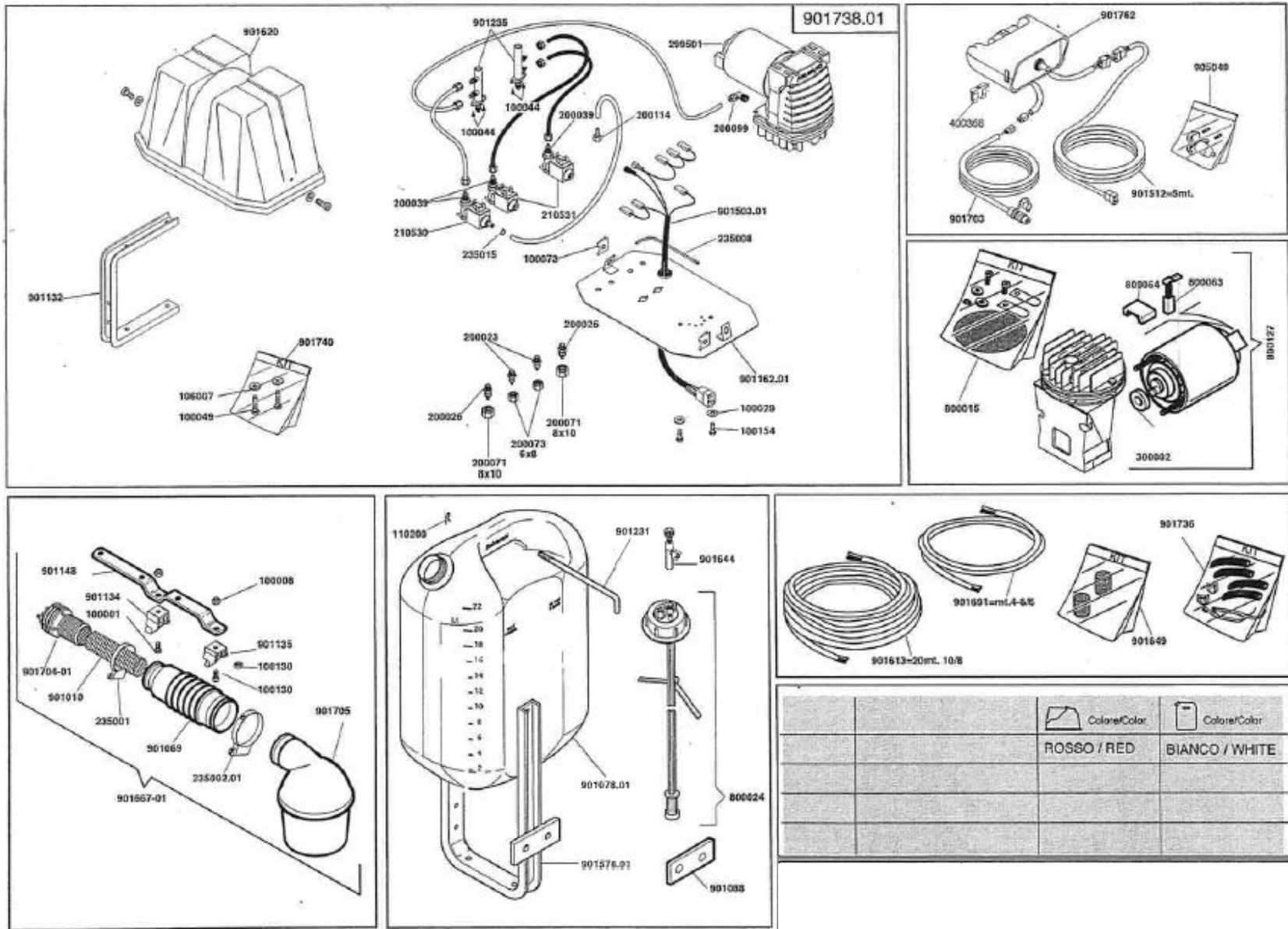


## CROPLANDS PART NUMBERS: SAL901654A FOAM MARKER DOUBLE SIDED



	Colore/Color	Colore/Color
	ROSSO / RED	BIANCO / WHITE



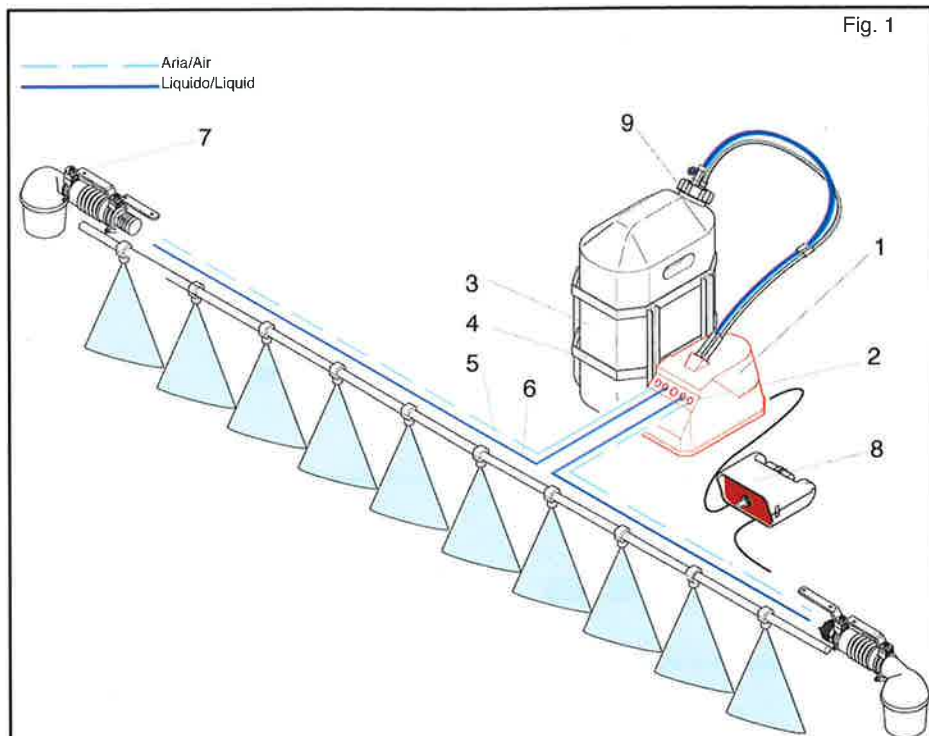


Fig. 1



- 1-Air compressor 12 V.D.C
- 2-Distributors with electrovalves
- 3-Liquid foaming agent tank
- 4-Tank frame
- 5-White tube air
- 6-Blue tube liquid
- 7-Foam diffusers for foam formation
- 8-Control panel
- 9-Cap with safety valve



- 1-Compressore aria 12 V.D.C
- 2-Distributore con elettrovalvole
- 3-Serbatoio liquido schiumogeno
- 4-Telaio serbatoio
- 5-Tubo bianco aria
- 6-Tubo blu liquido
- 7-Spruzzatori formazione schiuma
- 8-Pannello di comando
- 9-Tappo con valvola di sicurezza



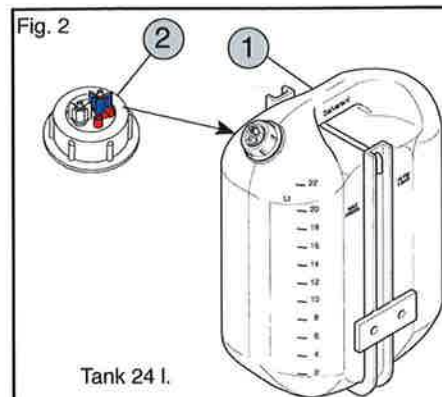
- 1-Compressur air 12 V.D.C
- 2-Distributeur avec soupapes électriques
- 3-Réservoir liquide agent moussant
- 4-Châssis réservoir
- 5-Tube blanc air
- 6-Tube bleu liquide
- 7-Diffuseurs formation mousse
- 8-Panneau de commande
- 9-Bouchon avec soupape de sécurité



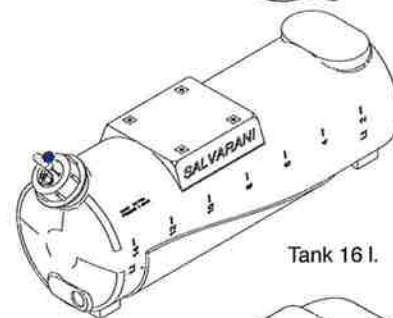
- 1-Luftkompressor 12 V.D.C
- 2-Verteiler mit Elektroventil
- 3-Tank für Schaumflüssigkeit
- 4-Tankgestell
- 5-Weißer Schlauch Luft
- 6-Blauer Schlauch Flüssigkeit
- 7-Spritzdüse Schaumbildung
- 8-Schalttafel
- 9-Deckel mit Sicherheitsventil



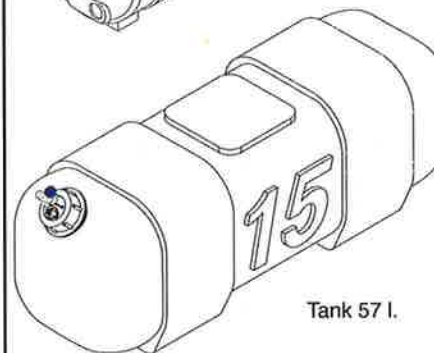
- 1-Compresor de aire 12 V.D.C
- 2-Distribuidor con electroválvulas
- 3-Tanque líquido espumógeno
- 4-Marco tanque
- 5-Manguera blanco aire
- 6-Manguera azul líquido
- 7-Pulverizadores formación espuma
- 8-Panel de mandos
- 9-Tapa con válvula de seguridad



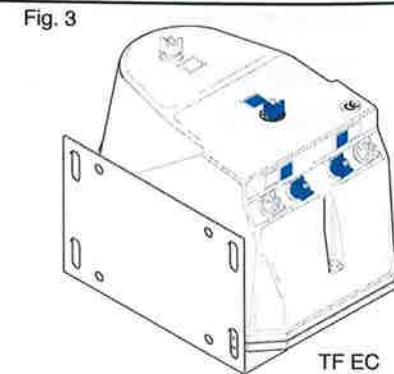
Tank 24 l.



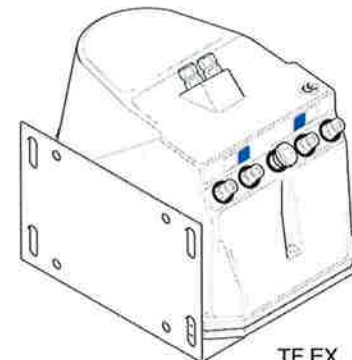
Tank 16 l.



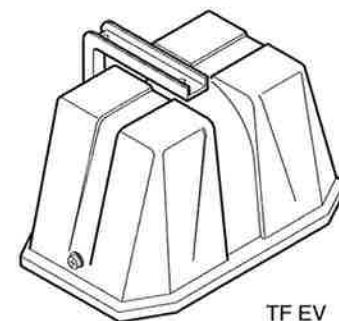
Tank 57 l.



TF EC



TF EX



TF EV

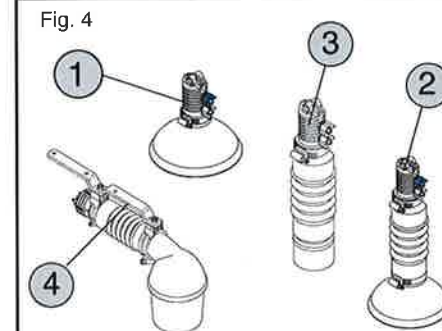
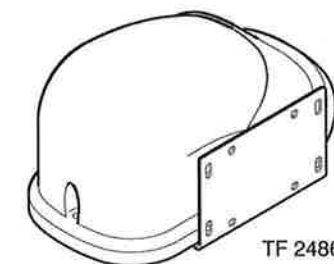
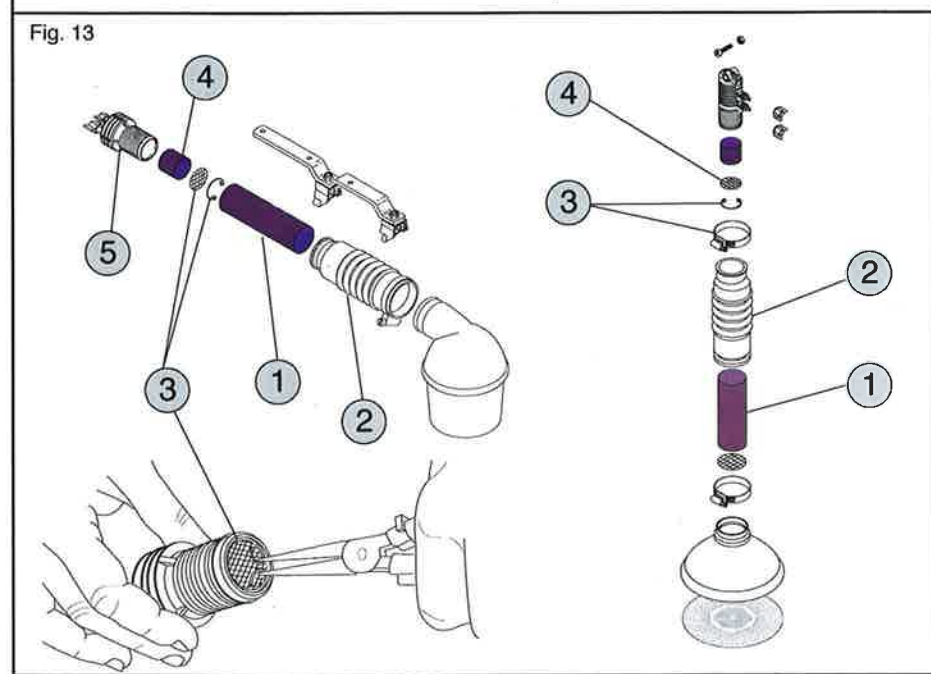
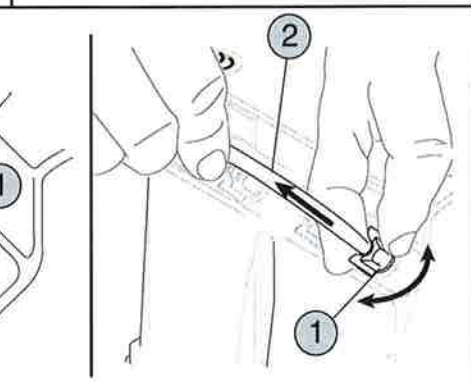
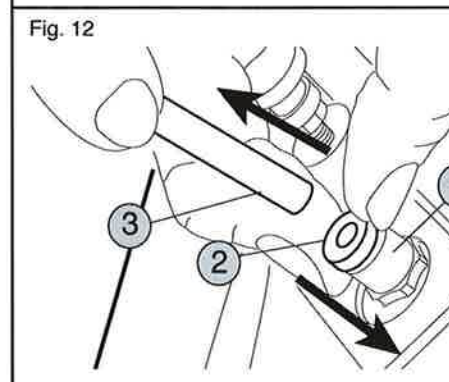
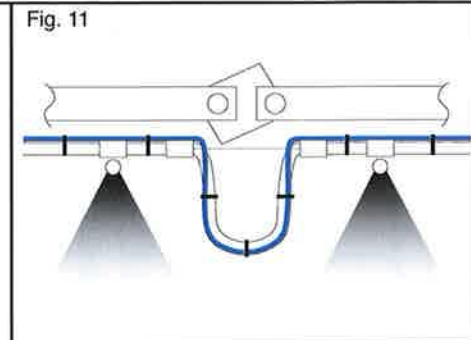
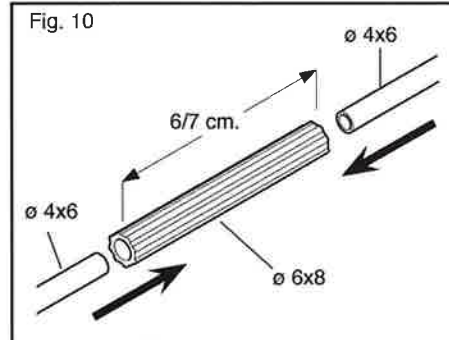
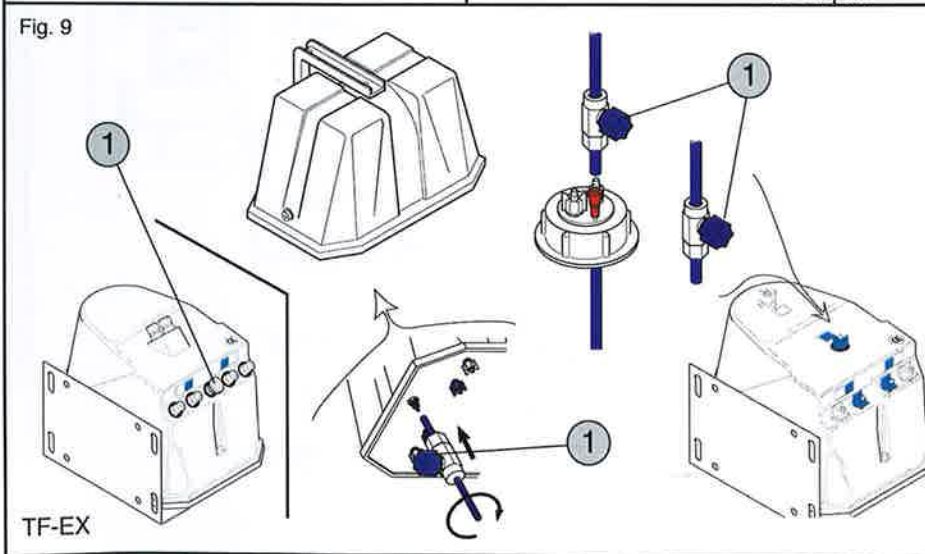
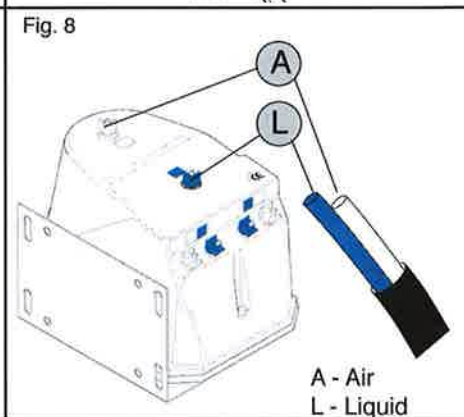
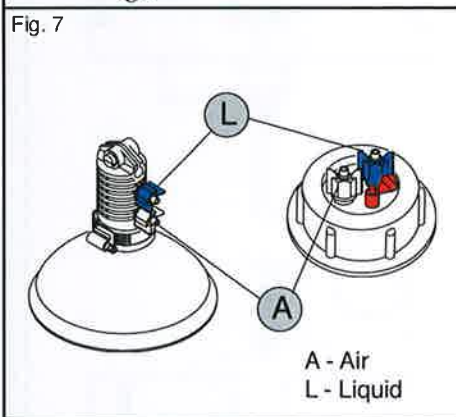
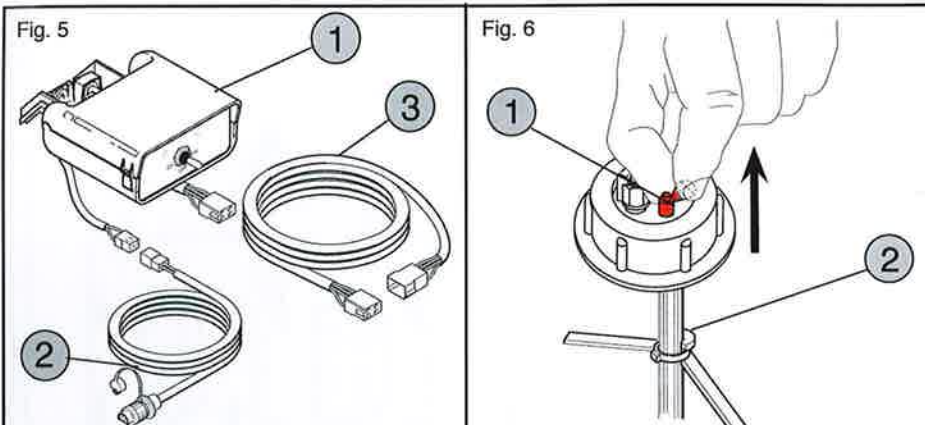
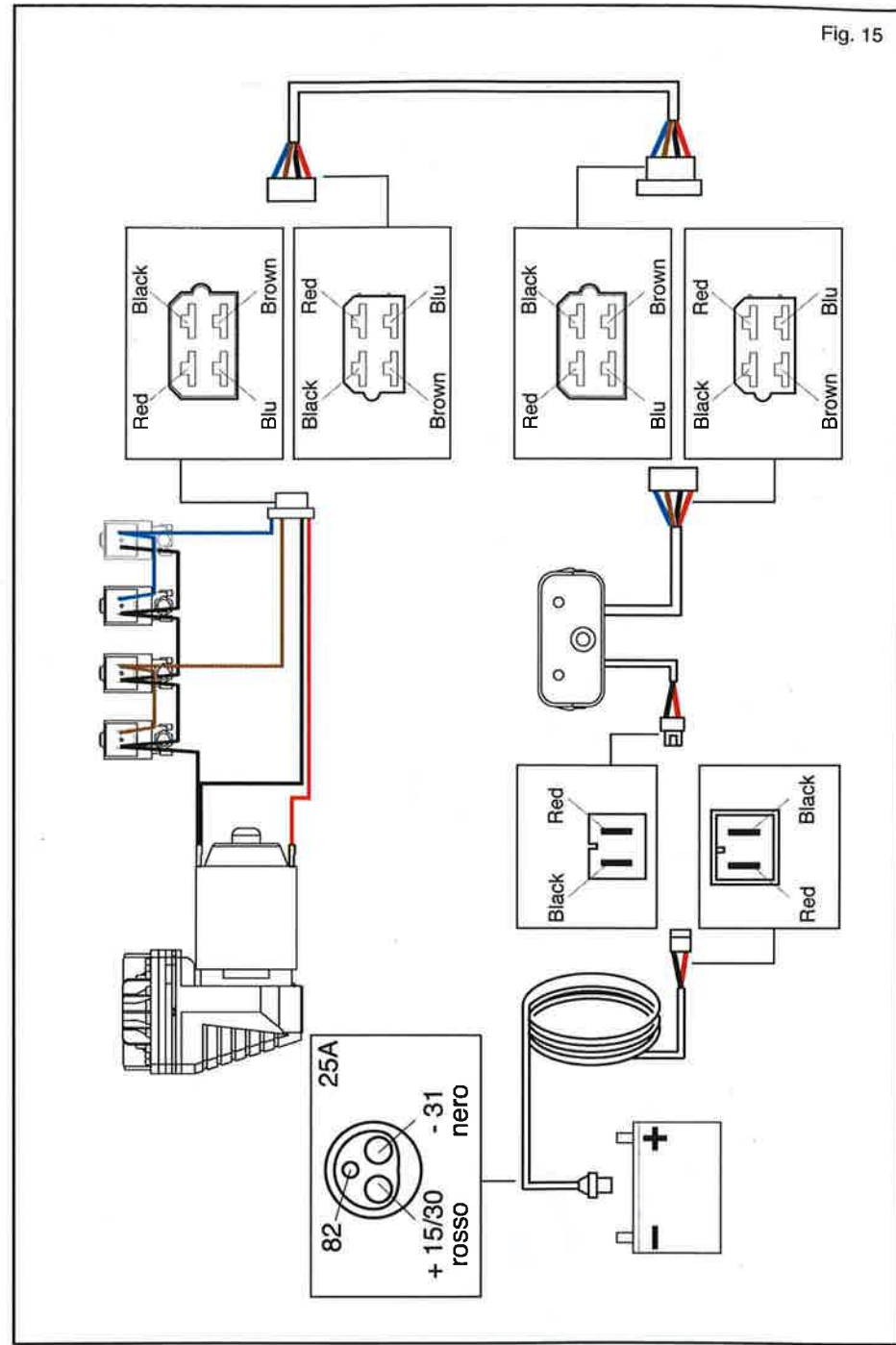
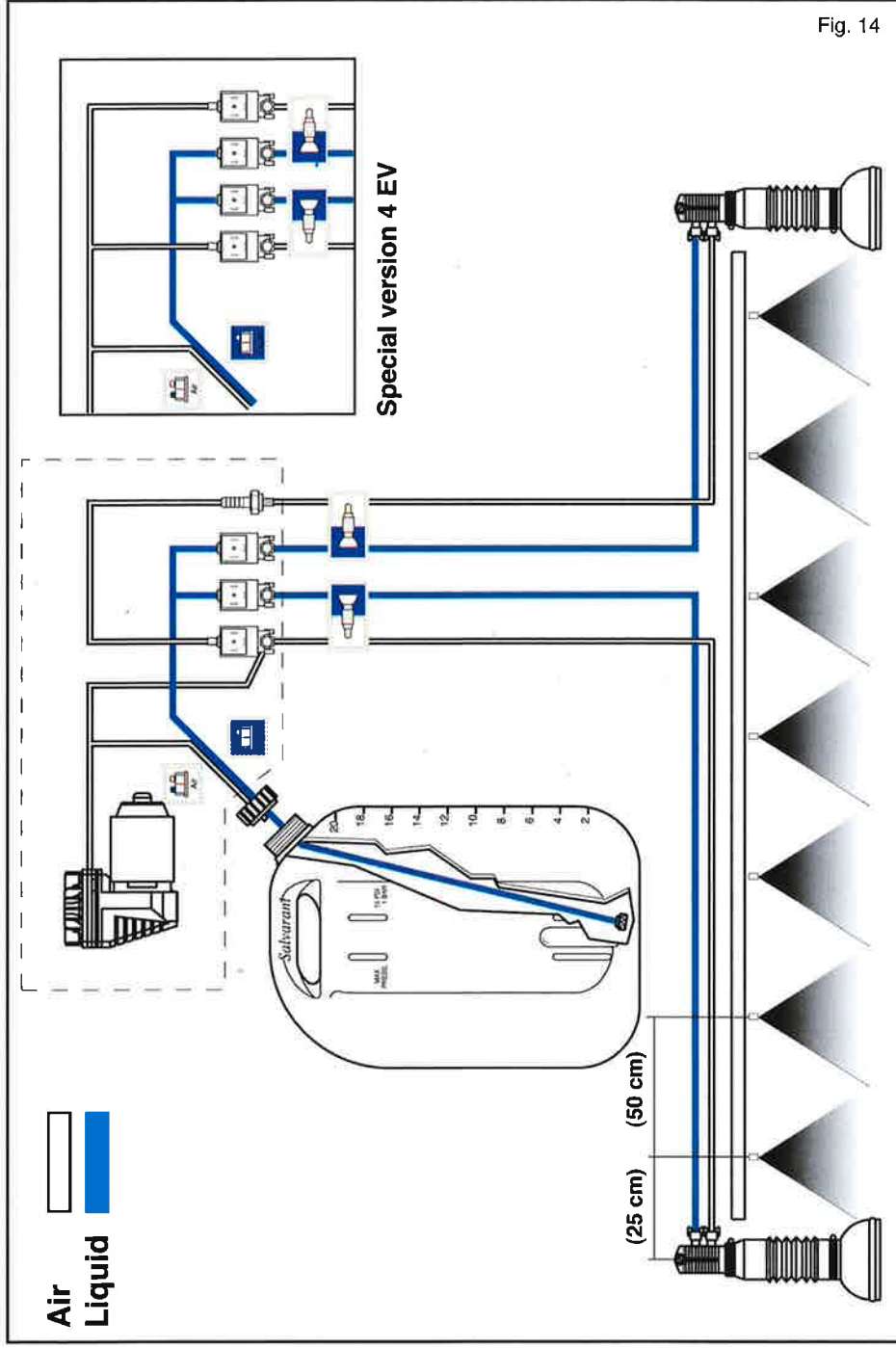


Fig. 4



TF 2486





## 0. INTRODUCTION

### 0 FOAM MARKER DESCRIPTION (FIG. 1)

The foam marker is a piece of equipment used to mark the limits, using foam, of the area of ground being worked.

The foam is obtained by suitably mixing air with a mixture of water and liquid foaming agent. The foam falls on the ground at regular intervals and creates a demarcation line which marks the area of the worked ground.

The foam marker can be fixed onto all weeding machines, pneumatic and centrifugal manure distributors, seeders and in general when precise working is required. Fig.1 shows the equipment and its single parts.

### 0.1 LIQUID FOAMING AGENT TANK (FIG. 2)

Contains the liquid which when emitted from the foam diffusers forms a bubble of foam to indicate the area worked (ref.1).

It has a cap with safety valve which limits the maximum pressure inside the tank at 0,75 bar (ref. 2). Material of manufacture: polyethylene or stainless steel (mod. tf/24/inox)

### 0.2 COMPRESSOR BLOCK (FIG. 3)

Supplies the necessary pressure to the plant to generate the foam bubbles.

### 0.3 AIR-LIQUID FOAM DIFFUSER/ MIXER (FIG. 4)

Mixes the compressed air with the liquid foaming agent, in order to form foam bubble.

There are two versions of foam diffuser : the straight version (ref.1, ref.2 and ref. 3) and the horizontal version (ref.4).

### 0.4 CONTROL PANEL (FIG. 5)

The central selector (ref. 1), selects the side from which the foam bubble will be emitted .

It comes with a feeding cable (ref. 2) and a connection cable to the compressor (ref.3).

### 0.5 SAFETY SYSTEM (FIG. 6)

A safety valve has been installed above the liquid foaming agent container cap (ref.1) and it opens at a pressure of 0,8 bar.

This system is necessary to avoid the pressure from rising inside the tank should the tubes be obstructed. The container cap has a safety stop (ref.2) to avoid the operator being struck should opening with pressure take place.



**Do not remove the cap safety stop.**



**Do not tamper with the safety valves.**



**Avoid removing the cap before having discharged every pressure residue in the container .**

## 0.6 TECHNICAL DATA TABLE

Feeding voltage	12÷14 Vdc
Absorbed current	9,5 A
Work pressure	0,75 bar
Maximum pressure	1 bar
Noise level at a distance of 1m and 1,6m H	76 dbA
Work temperature	-10 ÷ 50 C°
Storage temperature	-10 ÷ 50 C°
Maximum humidity (not condensed)	95 %
Net weight	fino a 23 Kg

## 0.7 TANK MODELS


Mod.	Capacity	Ixhxp
EC/EV/EX	24 l	355x525x240
TF-24(inox)	24 l	234x673x235
TF-57	57 l	328x800x300



**Make sure that the battery of the vehicle (tractor) supplies a voltage of 12 V.**



## 1. INSTALLATION


 **Before installing the equipment, read the general rules (Chp. 4).**

### 1.1 POSITIONING THE COMPONENTS

The foam marker can be applied with different and specific solutions according to the machine. The compressor must be assembled in a position that is protected from the wheels, from the weeding bar and from excessive dust.

The two air-liquid mixer nozzles (Fig. 14) must be fixed to the extremity of the bar, using the appropriate clamps, at a distance from the last foam diffuser equal to half the distance between the foam diffusers themselves. (25 cm). In fact, the foam must fall in an area that is protected from the foam diffuser jet and the point of fall must mark the limits of the area treated by the seeding bar.

The tubes must be fixed (Fig. 11) to the machine framework using clamps and must be positioned so that they are protected from possible knocks with the soil of the bar during opening and closing operations. The tank must be securely fixed to the framework keeping into consideration the weight, at full load, of the tank itself and that this is in a position to facilitate filling.


 **Install the components so that they do not compromise correct operation of any command or movement of the machine.**

### 1.2 AIR AND LIQUID CONNECTION (FIG. 14)

Start with the furthest foam diffuser from the compressor block; position the piping along the framework of the bar, abounding in presence of pivots (Fig. 11). The two tubes must be inserted into the appropriate connections, so that the colour of the labels or of the bushes coincide (Fig. 7-8).

Proceed with the other foam diffuser in the same way.

The third connection is between the compressor block and the tank. Cut the tubes, remove about 3 cm of plastic covering and then insert them into the connections (Fig. 8-12).

 **When connecting the tank cap, insert the blue tube into the connection connected to the inside filter, while the white tube goes into the other connection.**


### 1.3 ELECTRIC CONNECTION (FIG. 15)

Fix the feeding plug in an easily accessible position from the driving position.

Connect the positive cable to the piston pin n°58 and the negative one to n°31. Draw the current directly from the battery, using cables with minimum sections of  $\varnothing$  4 mm<sup>2</sup>, preferably  $\varnothing$  6 mm<sup>2</sup>.

Should the purchased version not have a feeding plug, connect the cables directly to the battery, interposing a 20 A fusible.


Check that there is no oxidation in the electric connections, and protect the connections exposed to chemical agents with Vaseline grease.


 **Use 6 mm<sup>2</sup> section cables between the battery and the socket where the control panel is connected (Fig. 5 ref. 2).**

### 1.4 ACCESSORIES SUPPLIED


The machine comes with the accessories and the tools listed below, suitable for all foreseen assembly, cleaning and maintenance use:

- kit to fix the foam diffusers/mixers;
- sponges for annual substitution;
- junction tubes to repair piping.
- flow regulator (Fig.9 ref.1), to be positioned on the cap or directly on the compressor (in models EX the regulator is part of the series and is already fixed to the compressor).

 **Keep to the instructions for their correct use.**

 **Always and only use the accessories that come with the machine or supplied by the supply company.**

## 2. USE


 **Before starting to use the equipment read the general rules (Chp. 4).**

### 2.1 FILLING THE TANK

- Pour concentrated foaming agent (a quantity up to the first mark of the pack) into the tank (or 1,5 - 3 % of the water used);
- Add clean water until the tank is full using a tube reaching the bottom in order to mix the


product well and avoid formation of foam. Otherwise stir carefully after having filled the tank.

- Once filled carefully screw the cap.

 **Before pouring the foaming liquid into the tank, always wear rubber gloves and goggles to avoid possible squirts and keep at a safe distance to avoid inhaling possible vapour.**

 **In case of contact wash with abundant water, if necessary contact a doctor.**

 **Foaming agents on sale are nearly all harmful if inhaled, ingested or when coming into contact with them.**

 **For specific warnings, read the foaming agent product instructions carefully, shown on the container**

### 2.2 ACTIVATION OF FOAM PRODUCTION

- Use the switch to activate the compressor (Fig. 5, ref. 1).
- Wait a few seconds for the circuit to reach the work pressure (about 0,75 bar) letting the foam come out
- Regulate the intensity of foam emission using the min-max regulator on the compressor or on the cap (Fig. 9 ref.1).
- Activate the selector on the control panel to activate the right or left row of the equipment

If used in winter or with temperatures near 0°C, pour some antifreeze, the type used for the car, into the liquid following the dosage indicated on the pack. The mixture of foaming liquid left in the tank must be stirred after 5 ÷ 10 days of inactivity.

### 2.3 STOPPING FOAM PRODUCTION


To stop production simply bring the function selector into the central position

### 2.4 INACTIVITY OF THE EQUIPMENT

Should the machine remain inactive between


work processes for long periods of time the pipings for the liquid must be emptied. The foam marker must be operated using an empty tank and the right and left foam diffusers must be opened alternatively until only air is emitted.

## 3. MAINTENANCE

 **Before starting cleaning and maintenance operations on the equipment read the general rules (Chp. 4)**

Machine cleaning can be carried out by personnel who have been correctly trained and know the main controls which exclude the power sources and the main machine characteristics in order not to compromise their safety.

Machine maintenance must be carried out by specialized personnel qualified in their specific field and with detailed knowledge of the machine or its parts.

 **All cleaning operations, checks, ordinary maintenance must be carried out with the machine stopped, without voltage and no pressure (zero voltage).**

### 3.1 CLEANING


The machine does not need particular operations other than normal cleaning activities.

Periodic cleaning of the inside of the compressor is recommended by removing the cover and using an air pressure jet.

Never use a direct water jet to wash the machine, above all with high pressure pumps.

During cleaning operations in particular, to remove dust, fine dust or other residues, wear suitable clothing, where possible use only aspirators, should compressed air be used wear also masks, goggles and protective gloves.

Dispose of work residues according to the current laws.

 **Do not direct pressure water jets towards electrical components such as the control panel and compressor.**

Should it be necessary to empty the system proceed as follows (Fig. 10):

- Close the air and liquid tubes of the caps using tube  $\varnothing$  6x8 supplied (Fig. 10);
- Operate the compressor for a few seconds

from both sides .

### 3.2 PERIODIC MAINTENANCE

#### 3.2.1 OPERATIONS TO BE CARRIED OUT WHEN NECESSARY

It is necessary to clean the filter inside the liquid foaming agent tank periodically.

Do the following:

- remove the tank cap and remove all the tube;
- clean the filter at the extremity of the tube;
- replace the cap.

#### 3.2.2 OPERATIONS TO BE CARRIED OUT ANNUALLY

**It is necessary to substitute the sponges inside the foam diffuser/mixer annually (Fig. 13)**

- disassemble the parts of the foam diffuser, and carefully remove the seger (n° 3) with pliers;
- substitute both of the sponges. Make sure the larger sponge (n° 1) is inserted inside the protective boot (n° 2), whilst the smaller one (n° 4) must be inserted inside the foam diffuser block support. (n° 5).
- reposition the seger and all the other parts of the mixer.

#### 3.2.3 ORDINARY MAINTENANCE OF THE COMPRESSOR

If the compressor has not come into contact with antiparasitics and has not been exposed to particular atmospheric conditions, it is sufficient to clean the filter and the inside of the casing

If the compressor is accidentally covered by antiparasitic products or liquid fertilizers, we recommend that you immerse it under running water until all of the product has come out; then dry the motor using compressed air before starting the machine up again

### 3.3 EXTRAORDINARY MAINTENANCE

#### 3.3.1 REPARATION OF DAMAGED TUBES

Should a tube break repair it in the following way:

- cut the damaged part of the tube, trying to have a uniform edge on the remaining tube ends;
- join these two tubes using the tube  $\varnothing$  6x8

supplied (Fig. 10).

#### 3.3.2 SUBSTITUTION OF TUBES (Fig. 12)

Should it be necessary to substitute a tube proceed as follows:

1. Automatic fittings:

- uncouple the tube (3) from the connection (1), by pressing ring (2) on the connection itself and pull the tube
- lay down the new piece of tube and fix it using clamps, then insert the tube into the connection pressing inside it.

2. Quick fittings

- uncouple the tube (2) by unscrewing the connection (1)

#### 3.3.3 MAINTENANCE OF THE COMPRESSOR

The compressor does not require lubrication .

To substitute the membrane proceed as follows :

- open the compressor hood and disassemble the compressor from the framework. Disconnect both the electric and pneumatic connection;
- Fix the compressor on the work bench and unscrew the screw from the head of the compressor: once open the membrane is visible;
- unscrew the four screws of the counterdisc and the screws of the lamella and substitute the membrane. Replace the screw of the counterdisc and of the head making sure they are tightened uniformly;
- always substitute the lamella and clean their location using fine abrasive paper.

Instead, to substitute the motor proceed as follows:

- with the compressor disassembled unscrew the screw of the connecting rod that hold the bushing and unscrew the screws of the motor.
- after having fixed the motor, align the connecting rod to the bushing before tightening it.

### 3.4 ELECTRIC AND PNEUMATIC CHECKS

Periodically check that all the electric connections are solid and if necessary substitute the damaged or faulty connector.

Check also that the connection tubes between compressor, tank and foam diffuser/mixer are

not damaged and that all the connections have a perfect pressure holding ; if necessary substitute the damaged tubes and the O-ring inside the connection should there be leakages.

### 4. GENERAL RULES

**Before using the machine, the operators must know how the parts operate and understand the controls on the equipment.**

**Read all the instructions in this document. It is forbidden to use the machine for purposes different from those foreseen by the manufacturer.**

- 4.a Always pay attention to warning signs fixed to the machine.
- 4.b Take care not to leave any type of object on the machine, in particular on the moving parts.
- 4.c It is prohibited to use the machine in environments with explosive atmosphere
- 4.d Do not tamper with the electric system.
- 4.e Do not eliminate, modify or remove the protections during use.
- 4.f The protections or fixed carters must be removed only when the machine is stopped by authorized personnel and when there is zero voltage.
- 4.g Check that machine operation and each of its blocks, even auxiliary does not trigger off situations of danger to people or things.
- 4.h Should there be operation anomalies, immediately stop the machine and ask for technical assistance.
- 4.i Use of spare parts not corresponding to the characteristics described below, modifications or even slight tampering relieve the manufacturer from any responsibility relative to good use, correct operation and safety for people or things.
- 4.l The operator must be in good physical and mental condition to use the machine
- 4.m Always keep to the current accident prevention laws.

**Operations representing a situation of potential danger and can cause slight physical damage**

Proceed only if the conditions highlighted in this symbol are respected

**Operation to be carried out with caution and in a correct way to avoid damaging things or the surrounding environment**

Proceed only if the conditions highlighted in this symbol are respected .

#### 4.1 OBLIGATIONS OF THE OWNER

The contents of this document must be made known to the users of the equipment. The owner must preserve this document and keep it updated with attachments from SALVARANI, and must ask for another copy should it be damaged or go missing.

The owner must: keep the equipment in conditions of safety and efficiency; carry out the checks and maintenance described in this manual with the frequency indicated; supervise and know the equipment functions and must intervene in case of anomaly. The operators must immediately signal every anomaly and situation of potential danger to the owner.

#### 4.2 RECEIPT AND CHECK OF PACKING

At machine delivery check that all the material is present and that the machine parts are not damaged

**Packing must be disposed of by the user according to the current laws of the country.**

**During the unpackaging and handling phase make sure that there are no unstable pieces which could fall.**

#### 4.3 WARRANTY AND ASSISTANCE

The warranty is valid for two years from the date of purchase. The warranty excludes damage that could occur due to negligence or incorrect use of the equipment. For problems and/or breakages needing important interventions contact the company of installation of the equipment. Should spare parts be needed, to maintain the warranty conditions it is obligatory that only Salvarani parts be installed. Keep the receipt or invoice confirming the purchase date. Rights of warranty correspond to the current laws.



Defects	Causes and Solutions
<b>The compressor block does not work</b>	Check the fusible. Check the exact electrical contact and the connection of the socket in the plug. After long periods of inactivity the small motor can block. To unblock it provoke a vibration and spray some deoxidizer in the brushes.
<b>The compressor does not work the control warning lights light up</b>	Check the operation of the connector with 4 wires adjacent to the compressor block and in particular that there is no oxidization or detached wires.
<b>The foam diffusers do not release liquid, neither from the right or from the left</b>	Close the tank cap well. Check the tubes that connect the compressor to the cap. Make sure there are no cracks in the blue tube inside the tank, from the filter to the cap and on the bottom of the tank. Clean the bottom filter of the liquid. Check for possible contractions or folds along the piping.
<b>Liquid or air continues to be released from the foam diffusers when the machine is stopped</b>	Remove the tubes that go from the compressor block to the foam diffusers, then blow into the connections of the electrovalves towards the compressor. Should the leakage persist disassemble and clean the electrovalve that corresponds to the connection that is leaking.
<b>Air release from the safety valve on the cap</b>	Check that there are no contractions in the pipings towards the foam diffusers Clean the electrovalves as described beforehand.
<b>The formation of foam is not good</b>	Substitute the sponge found inside the foam diffuser; when inserting it avoid crushing it. Annual substitution of the sponge is recommended. Re make the mix of water-foamig agent if the one in use is old. Make sure that the quantity of air reaching the foam diffusers is equal to the quantity of air leaving the compressor.
<b>Loss of air or liquid from the connections</b>	In correspondence to the quick connection or to the short nipples, disconnect the tube and shorten it by about 10 mm to eliminate deformation defects in correspondence to the holding O-ring.
<b>The compressor works but pumps little air</b>	Have the compressor overhauled or substitute the membrane and lamella using the repair kit.
<b>The liquid and/or air do not come out of the connections of the compressor</b>	Check there is pressure in the tank. Check for contractions on the blue or white tube connection between the compressor and the tank.
<b>The tank does not expand, lack of pressure</b>	Check if there is an obstruction in the air passage in correspondence to the cap. Remove it by unblocking the no return valve inside the connection using a small screw driver. Check the operation of the compressor