

**Instruction Manual  
& General Information  
for ARICON products**

**ARICON**



**2014/15**

**ARICON collecting trays, dosing and storage tanks can be set in many applications and are very easy to use.**

You will find information and instructions as follows:

- 1. Characteristics**
- 2. Transport and assembly**
- 3. Standard accessories and spare parts**
- 4. Quality control**
- 5. Repair instructions**
- 6. Manufacturing method**

## 1. Characteristics

Since 1993 ARICON has been a specialist for chemical-resistant containers of up to 30,500 liters which are produced seamless by rotational moulding. ARICON containers are long-life products. They are used in fields where high chemical, mechanical and thermal resistance is essential: plant construction, process technology, storage, transportation and spill protection.

The containers are suitable for processing chemicals, foodstuffs, liquids and bulk goods.

The containers are only for the pressureless use. The operation temperature range is between -30 °C and +60 °C.

ARICON produces tanks in different wall thicknesses according to the type of substance, its specific gravity, aggressiveness, the working temperature and the tank volume.

Standard : for medium to high density substances

MA/1 : thicker version for substances with higher specific density

MA/2 : extra thick version for substances with high specific density and extreme temperatures

MA/3 : thicker version than MA/2

### Medium

The medium needs to be appropriate for polyethylene containers. The "limited suitability" rating indicates that the container will have a reduced service life. You can find information on the consistency of LLDPE in contact with common chemicals, and with reference to the working temperature, in our chemical resistance table at [www.aricon.de/en/downloads](http://www.aricon.de/en/downloads) or contact us directly.

### DIBt approval (German institute for building technology)

The collecting trays and round containers have a qualification approval (DIBT/WHG). You can find the DIBt-approval (Approval No. Z-40.22-408 and Z-40.22.518) and the lists of mediums with DIBt approval (German Version) at [www.aricon.de/en/downloads](http://www.aricon.de/en/downloads) or contact us. You need to check the list of mediums for PE and PP if you have a collection tray of the type WRL, WRP and WRP/1. The collecting tray is made of PE and the platform (usage area) of PP. A reduction ratio till 1,1 is approved. If it is higher, the approval will expire.

## **2. Transport and assembly**

Large and empty containers are very easy to transport and handle as they are not very heavy. It is not allowed to move the container while they are filled.

### **Surface**

The underground needs to be stable enough to support the container, particularly with large volumes. It needs to be flat and free of any parts that may puncture the bottom of the container. The position of the container needs to be perfectly in balance.

### **Temperature**

The operation temperature range is between -30 °C and +60 °C.  
The working and ambient temperature must stay within the specified temperature zone for polyethylene.

### **Leak testing**

Please check existing connections regularly for leaks. If water-hazardous materials are used, please ensure that leaking liquids are collected. We recommend appropriate collecting trays and tanks from our product range.

### **Machine planning**

Please ensure that the container / machine is accessible so that any modifications or replacements can be made.

### **Checking on receipt**

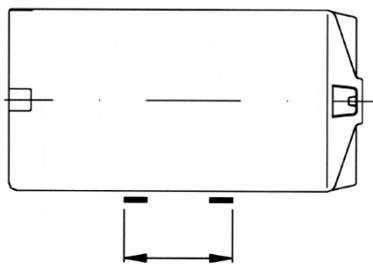
We pay particular attention to the quality, but we would still ask you to check that the container and the goods are intact. Do a test filling to check the tank for hidden faults and transport damages. Use a hazard-free medium for the filling (water). If you have any problems or questions, feel free to contact us.

### **Transport and set up of large container with a fork lift**

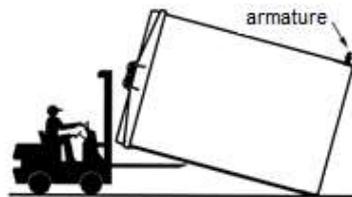
To prevent moving during the transport, the tank is protected by polystyrene blocks. When you set up the tank, these blocks must be removed. If the tank has (if it is allowed by the present enviroing safety rules) a bottom outlet pipe, it will be attached only to the tank during the transport and the customer will have to connect it to the bund once the tank is in position. The pipe is fixed on the upper side of the tank.

**For the set-up of large container with the fork lift please note these facts:**

- carrying capacity of at least 2 tonnes
- fork distance: 1200 mm
- fork length: 2000 mm
- Support of a second fork lift for container with volume more than 8000 litres
- Particular attention should be paid to welded and screwed parts (pipes, mountings) They must not be subjected to pressure, collusion or traction
- Transport the container only when they are empty

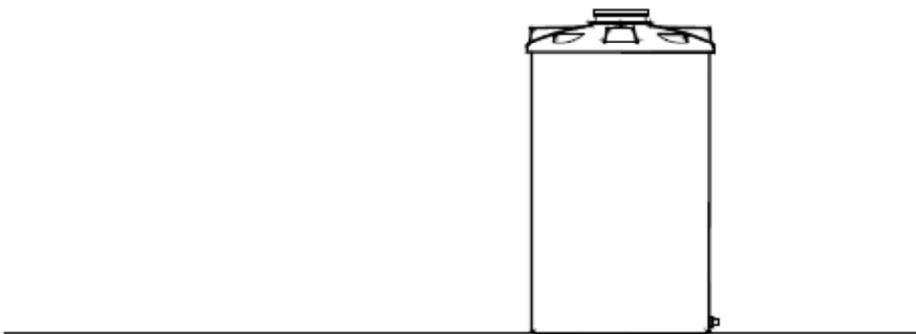
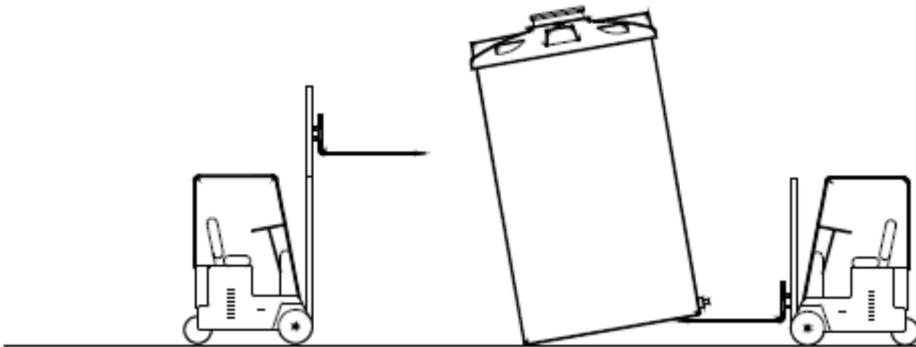
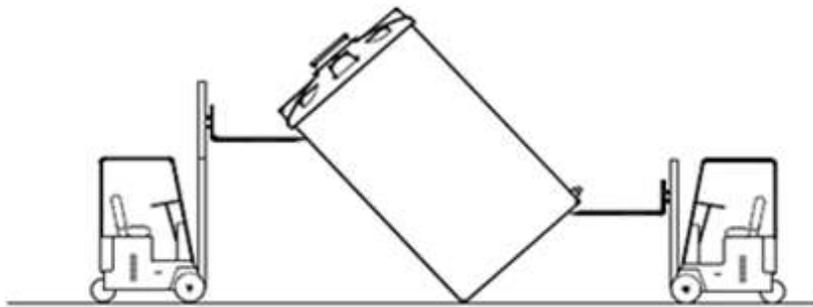
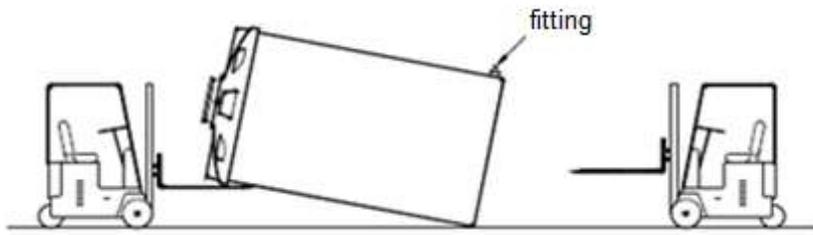


Unloading



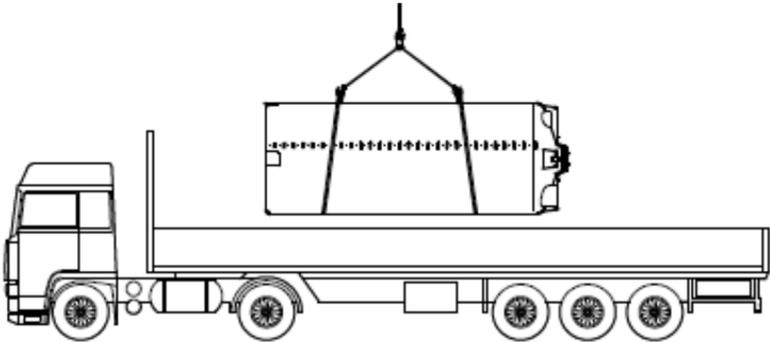
Raise

Without crane eyes, it is possible to lift the container with two fork lifts. One forklift lifts the container from the front and the other one steers from the back.

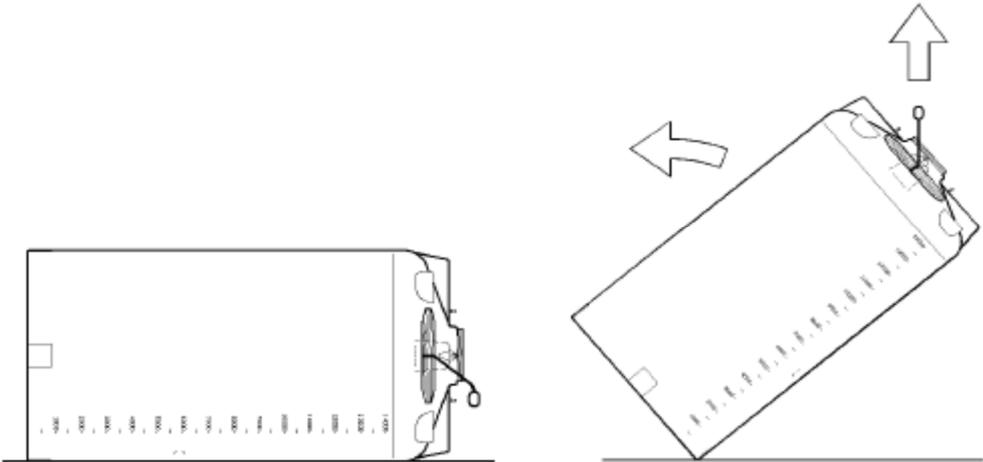


**Set-up of a large container using a crane**

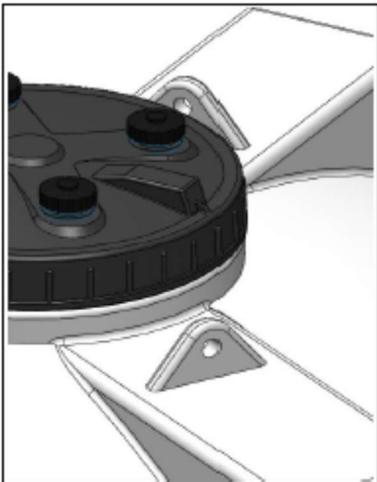
You can use a textile band in order to bind the tank and using a crane for the raising as shown below.



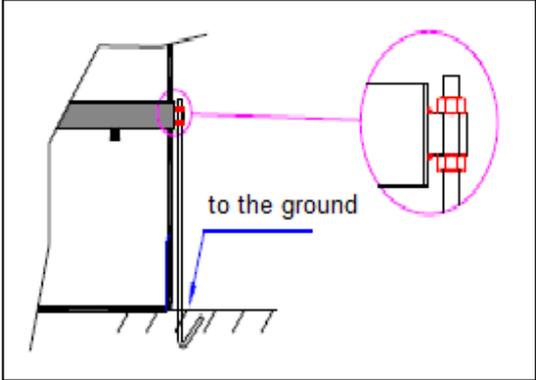
An alternative is to use a cross beam, positioned on the inside of the opening. A rope is fixed on the cross beam and can be used to lift the container.



The new large containers have moulded-in crane eyes. They can be used to lift the container as well.



In windy areas, the tank should be anchored to the ground. This needs to be announced when the order is placed. If you have any questions, feel free to ask us.



anchorage to the ground

**Container bottom**

The production method may cause curves on the bottom of the container (A/B/C). This is not a fault as the bottom of the container adapts to the ground shortly after positioning. The final form is created once the container has been filled (D).



The elasticity of the tank is a feature. If the bottom were too rigid, fractures could occur.

**Connections**

The container expands during the filling and emptying process. Any handling equipment attached will create vibrations. This is the reason why the pipe connections leading from and to the container must be flexible or balanced using a compensator.



**Colour**

Each container type can be produced in various colors to meet customer requirements, or can be made electrically conductive if so required. Standard colors are natural translucent and black.

Standard PE/natural translucent containers are light-transmissive, meaning the filling level is visible from the outside.

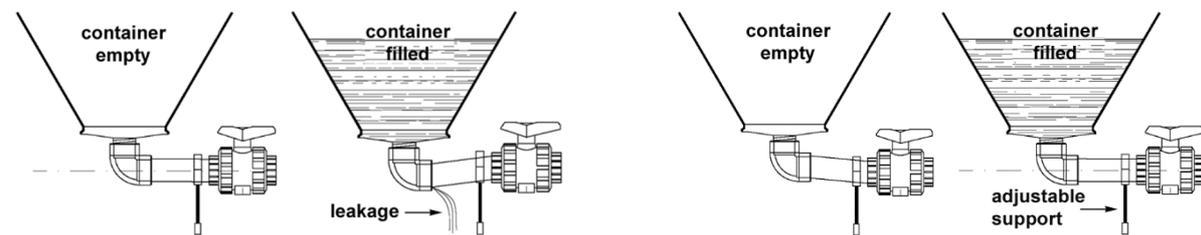
The black containers offer UV-protection for light-sensitive liquids.

Polyethylen, as well as normal plastic, has no condition to create electrical conductivity. Nevertheless, ARICON offers all tanks in usual high quality with this attribute. This is possible through electrical doping. This way the danger of too high electric tension is not present anymore. It mostly concerns the effort in Ex-Zones, which are very risky in connection with flammable mediums. When these are retained in non-conducting trays, a small contact can lead to an electrostatic charge to suffice an inflammation. On this account electro conductive tanks are prescribed in different classes of risk, at a certain burning point.

Due to additives UV, it is possible that the large natural translucent tanks, or the ones with thicker walls, where a lot of material is used, become yellowly colour changes. It is not a sign of a false processing but one of a high temperature necessary for complete melting. This yellowly colour change will disappear after a while in direct sunlight.

### Container with cone and horizontal outlet

It is important to build a gap into the set-up of horizontal outlet armatures for the container extension. This counteracts the pressure on the connections during filling.

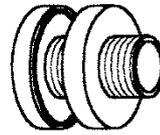
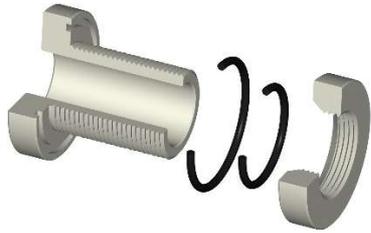


**Incorrect: in line**

**Correct: inclined**

### 3. Standard accessories and spare parts

#### TST



PP tank screw with male thread  
O-ring EPDM or Viton

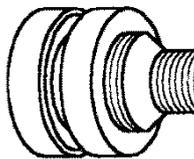
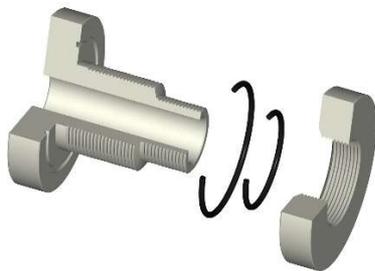
These pipes are frequently inserted by the customer. The following information may be helpful for the assembly:

Ø TST (Inch)	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"
D = hole (mm)	21	27	33	41	48	60	76	89	111

Drill a hole with the dimension "D". Insert the stub pipe from the inside, making sure that the O-Ring is correctly positioned. Screw down the locking ring from the outside. Do not forget the O-Ring and tighten it up. Hold the end of the stub pipe with an adjustable spanner and use a pipe wrench. You can protect the thread with a rag.

#### TSR

For tanks with large capacities, a reinforced stub pipe is used. This polyethylene pipe is welded to the tank. If required it can be equipped with a flange in PVC.



Reinforced tank screw with male thread. Can be welded to the tank to get a higher stability.

Ø TSR (Zoll)	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"
D = Loch (mm)	33	41	48	60	60	80	100	100	120

Drill a hole with the dimension D using a scoop drill. Large capacity tanks don't always have a uniform wall thickness and there may be small depressions inside. Internal and external positions must be prepared for the stub pipe so that it will be correctly adjusted to the tank. You can use an angle grinder for this. It is important to be very careful not to damage the tank. After this, fit the stub pipe in the hole, keep blocked the piece with a channel lock, screw down the external locking ring with a chain wrench and tighten it up. Weld the stub pipe internally.

## Mounting

Fix the tank screw with a tank screw (A). Grab the tank screw with the adjustable angle grinder (B).



**A**



**B**

## Weld fittings

Weld fittings can be positioned on the tank wherever you want. A welding wire is used to weld the fittings with 3 welding seams to the tank.



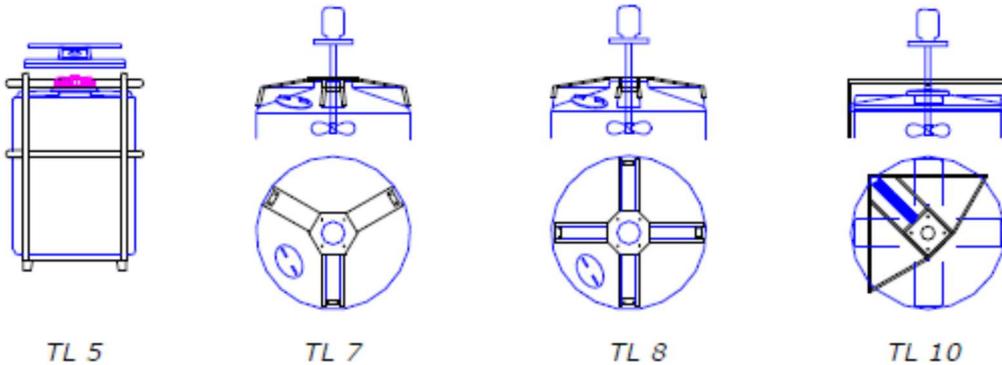
## Agitators

Most of the tanks can be equipped with an agitator. If required the manual agitator and the stamping mixer can be delivered including the installation. Electric agitators are delivered without installation. The electric agitators need to be put into operation by an electrician.

The equipment of the tanks with a cross bar or a mounting plate depends on the tank type. It is needed to get a better stability and to get the optimal agitation. We will give you advice with the different possible application for all our tanks. We offer flow breakers for cylindrical tanks with a higher volume. They make sense, in case of central installation of the agitator. The electric agitators are maintenance-free and 24h in operation.

For the exact inquiry of the agitator we need the following information:

Medium, concentration, density, viscosity, temperature and the stirring task



## 4. Quality control

Our business objective is the production of high quality tanks with outstanding properties. Nevertheless please check the tanks for integrity when you receive them. If there are any problems, please contact us, and we will find a solution.

We check the following things:

- Visual inspection
- Measuring of the wall thickness
- Density
- Temperature stability

If requested, we can do the following tests for a fee:

- Certificate of compliance DIN EN 10204 2.1
- Hydrostatic stability
- Chemical resistance
- Ultrasonic measuring of the wall thickness

According to EN ISO 9001:2000 the quality control needs to mark all articles with a label. The label includes the following information:

- Consecutive number



With these labels we are able to prove which material was used.

### Warranty

The warranty of the tanks starts from the day of delivery for 12 months. It includes faults in construction that affect the functionality or do not allow it. The purpose of the tank is to store liquids or solids.

Transport damages and optical defects are excluded. Transport damages have to be registered to the forwarding agency.

### Disclaimer of warranty

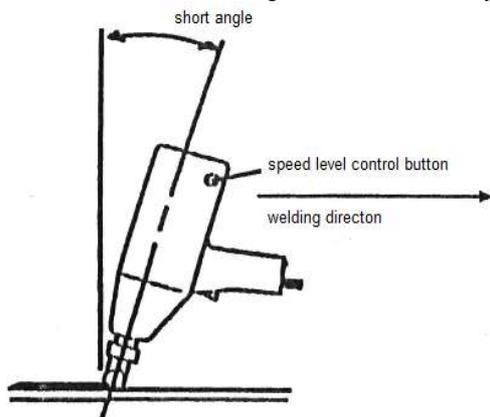
Technical modifications and errors are excepted. The ARICON Kunststoffwerk GmbH reserves the right to make changes without advance notice of the product or the instructions of use. For direct or indirect consequential damages that occur with the fittings or the use of the tanks the ARICON Kunststoffwerk GmbH assumes neither liability nor responsibility. There is no guarantee of the contents of this document. All the images are without obligation. Installation, commissioning and maintenance can be made by a specialist only.

## 5. Repair instructions

ARICON tanks do not need any special care or maintenance with the exception of the restoration of the accessories. Even so it is possible that you might need to repair the tank with welding equipment. Please note the following information for this case:

### Welding with an extrusion welder

Using an extrusion welder and a welding wire with  $\varnothing$  3.5 mm, small repairs can be made and accessories (weld-fittings, tank screws etc.) can be fitted. Set the welding temperature to 270°C and wait 10 minutes to reach the working temperature. The LED will flash when it is ready to be used. Pass the welder along the stretch to be welded. Press the trigger to feed through molten wire: move it steadily so that on contact with the welding trip the 2 parts fuse together with the wire. The 2 parts should be close enough to ensure they are both heated adequately by the tip of the welder.



### Welding with hot air

If you don't have an extrusion welder, an ordinary electric or electric / compressed hot air gun can be used with our welding wire  $\varnothing$  3.5mm.



Set the temperature to 250°C / 300°C. Wait 1 minute and preheat the parts that will be welded. Bring the welding wire to the melting point and press it against the part and steadily move along the whole surface which should be welded (neither too fast nor too slow).



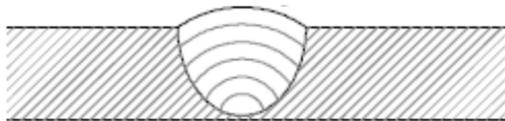
### Repairing a small fracture

In case of small damage caused by a blow (when being fork-lifted for example or an impact), if the crack is small and is not likely to run. You may be able to repair it just using the welding wire, working both inside and outside the tank.

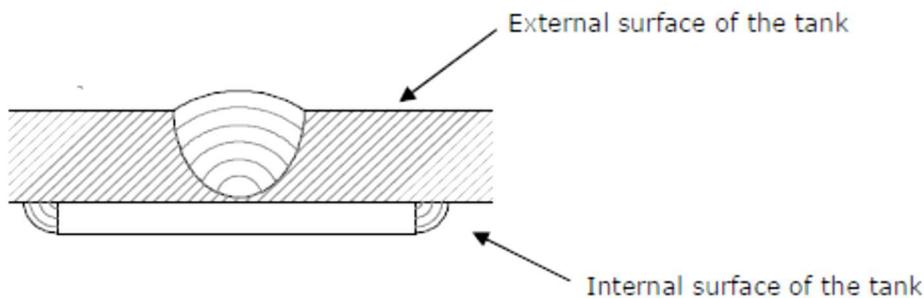
In critical areas where you have weld fittings, fractures have to be repaired. For safety reasons it is not allowed to repair the tank bottom.

If you need to repair the tank, prepare the area around the fracture. Flatten the surface, you might use the welding equipment.

Soften the material around the fractured area and fill the cavity with wire.



If possible, complete the work on the inside (always use the same welding wire as used for the outside). A polyethylene plate distributes the pressure of the liquid over a larger area and will provide a better seal.

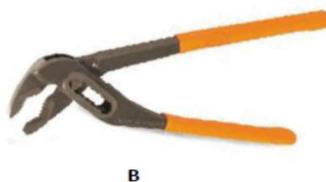


### Replacement of stub pipes

It is possible to replace a stub pipe if it is damaged or faulty. Start by unscrewing the external locking ring. Push the stub pipe inside and remove it. Insert the new pipe into the hole using a metal rod. Screw the external locking ring with a pipe wrench or using a chain wrench, depending on the size.



A



B

## 6. Manufacturing method

All tanks are produced by rotation molding. This process follows 3 steps that are located around one central axis.

1. Filling and removal of the product
2. The oven melts the PE-powder at 250-280°C. The powder spreads everywhere so a tank without welding seams is formed. The tank has a continuous wall thickness
3. After the oven the tank needs to be cooled

In average you can produce one tank in one form in an hour.

This pressure less process is good for parts with a high volume. Its feature is the leak-thickness. The tanks are robust, long-living, form stable, food safe, chemical resistant, UV-stabile and resistant to high temperatures. Therefore they can be used outside. The capacity range is from 14 to 30,500 liters.

