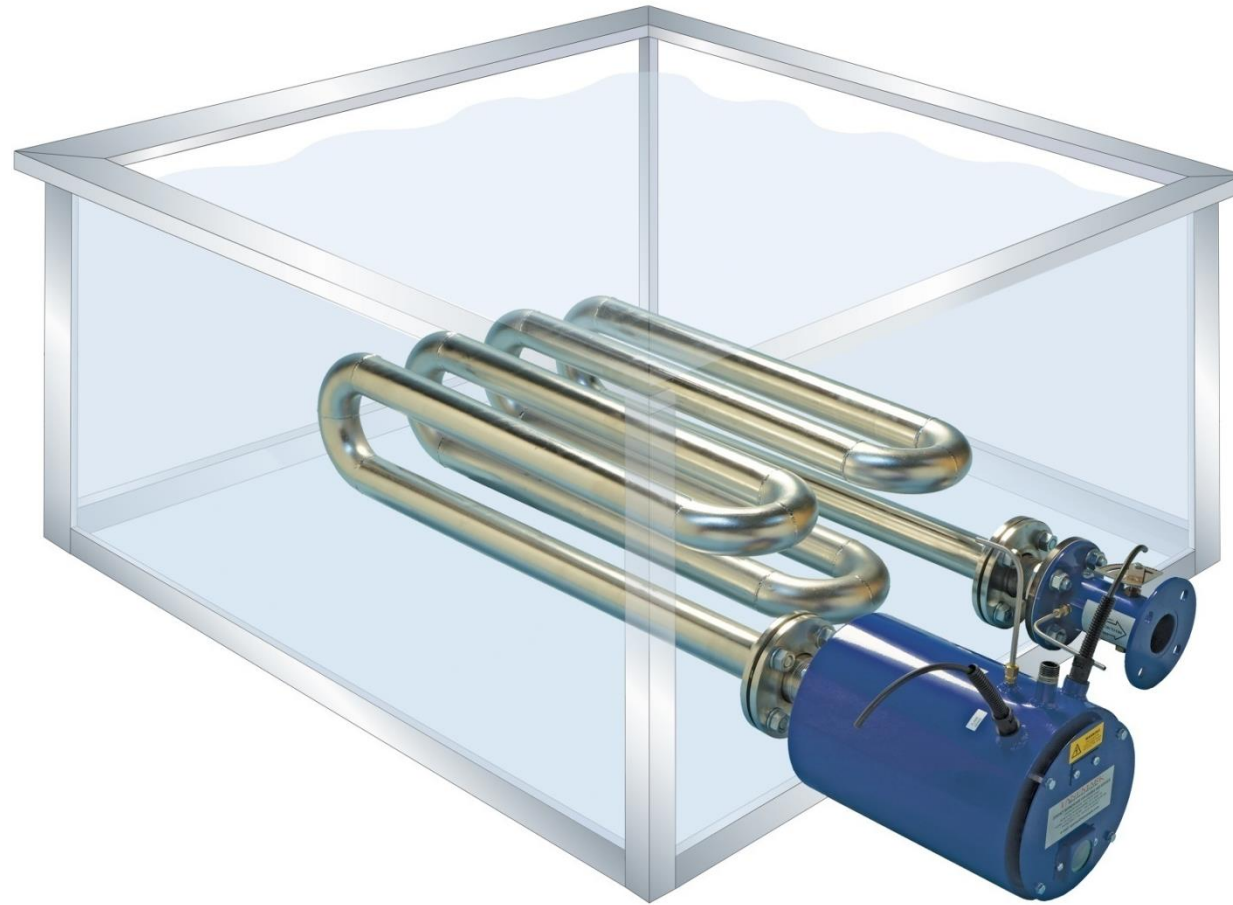




## Lanemark Tank Heating Burner Washing Machine Systems & Applications



## Lanemark Tank Heating Burner Systems

### **Cleaning (Industrial Washing Machines) – Industrial Parts Washers**

An industrial parts washer is a piece of equipment used to remove contaminants or debris such as:

- Dirt
- Grime
- Carbon
- Oil
- Grease
- Metal Chips
- Cutting fluids
- Mould release agents
- Ink
- Paint
- Corrosion

Industrial parts washers can be:

- Manually operated
- Fully automatic



# Lanemark Tank Heating Burner Systems

## Cleaning (Industrial Washing Machines) – Industrial Parts Washers

Industrial parts washers are used in many different areas of industry to

- Degrease components
- Phosphate components
- Wash components
- Rinse components

Industrial washing machines will typically include multiple stages, e.g. degrease stage, wash stage and a rinse stage.

Typical areas of industry include:

- **Aerospace**
- **Automotive**
- **Remanufacturing**
- **Heavy industry**
- **Rail**
- **General engineering**
- **Printing**

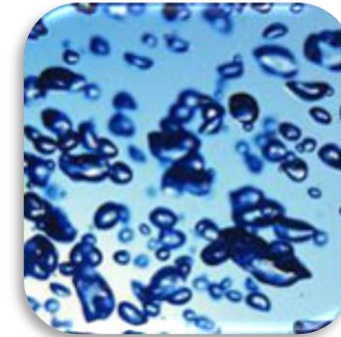


# Lanemark Tank Heating Burner Systems

## Cleaning (Industrial Washing Machines) – Industrial Parts Washers

There are many different types of industrial parts washers:

- Front loading
- Top loading
- Rotary drum ([www.youtube.com/user/vixenuk1#p/a/u/2/96QZowutfD8](http://www.youtube.com/user/vixenuk1#p/a/u/2/96QZowutfD8))
- Rotary basket
- Conveyor washers

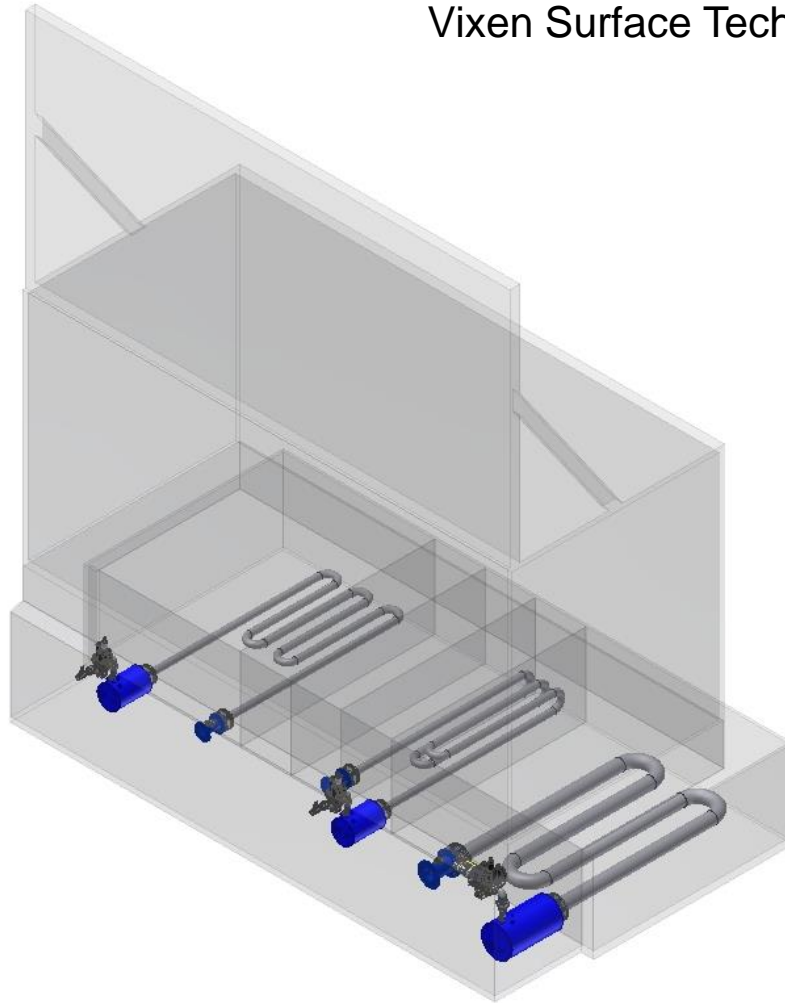


The type of washer that is required will depend on the parts that are being cleaned and the overall process demands, i.e. batch/continuous cleaning, complexity of parts to be cleaned and available floor space.



## Lanemark Tank Heating Burner Systems

Industrial Parts Washing Installation: “Phoswash Machine”,  
Vixen Surface Technology, UK



The “Phoswash Machine” included the following tanks:

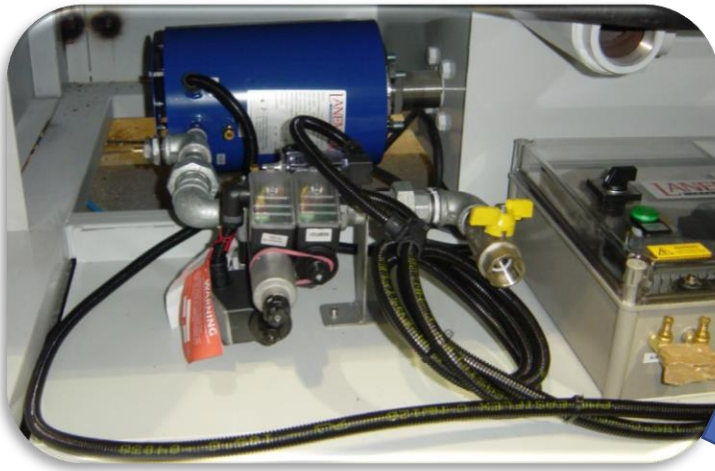
- **Phosphate Degrease**  
(TX20N at 60kW)
- **Cold Rinse**
- **Wash**  
(TX20N at 60kW)
- **Hot Rinse**  
(TX40N at 300kW)

2 off TX20N each rated at 60kW max gas input  
1 off TX40N rated at 300kW max gas input



## Lanemark Tank Heating Burner Systems

Industrial Parts Washing Installation: “Phoswash Machine”,  
Vixen Surface Technology, UK



TX20N rated at 60kW max gas input

## Lanemark Tank Heating Burner Systems

### **Cleaning (Industrial Washing Machines) – Plastic/Metal Tray/Crate Washers**

Plastic/metal tray/crate washing machines are used in many different areas of industry, which typically include the following:

- Food industry
- Drinks industry
- Distribution warehouses
- Agricultural (plants/flowers) industry

The optimum cleaning of plastic/metal trays and crates utilised in food and drink production and distribution processes, relies on the performance of Lanemark tank heating burner systems – in use on machines supplied by many leading manufacturers of industrial plastic/metal trays and crate washers around the world.



# Lanemark Tank Heating Burner Systems

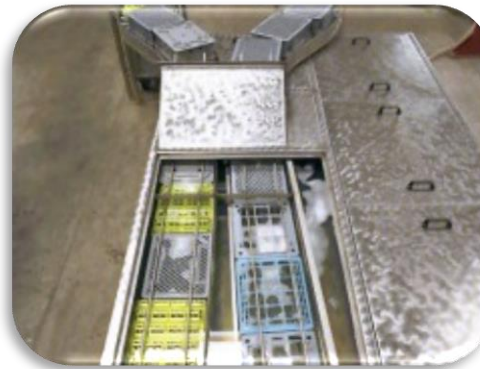
## **Cleaning (Industrial Washing Machines) – Plastic/Metal Tray/Crate Washers**

The food industry relies heavily on plastic/metal trays/crates for food storage and distribution and these need to be washed after their use.

Food industries that use industrial washing machines include:

1. Bakeries
2. Fruit and vegetable producers
3. Fish stations
4. Food distribution warehouses

([http://www.youtube.com/watch?v=CEeQh-u\\_r2M&feature=related](http://www.youtube.com/watch?v=CEeQh-u_r2M&feature=related))

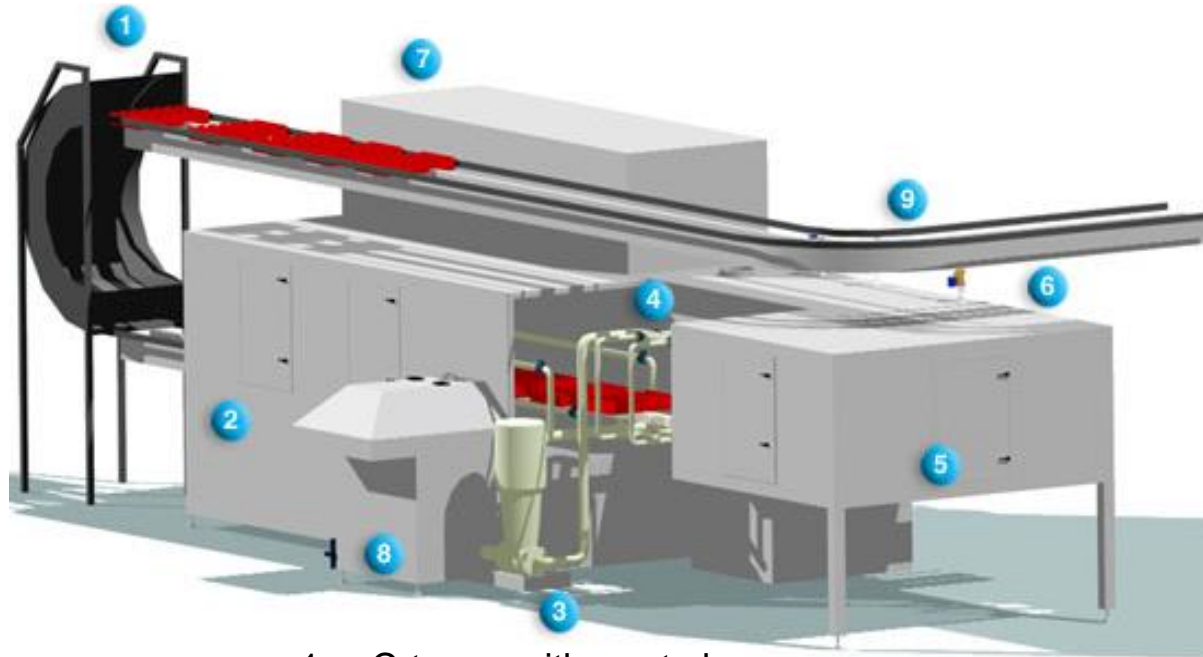




## Lanemark Tank Heating Burner Systems

### Cleaning (Industrial Washing Machines) – Plastic/Metal Tray/Crate Washers

Typical plastic/metal tray/crate washing machine

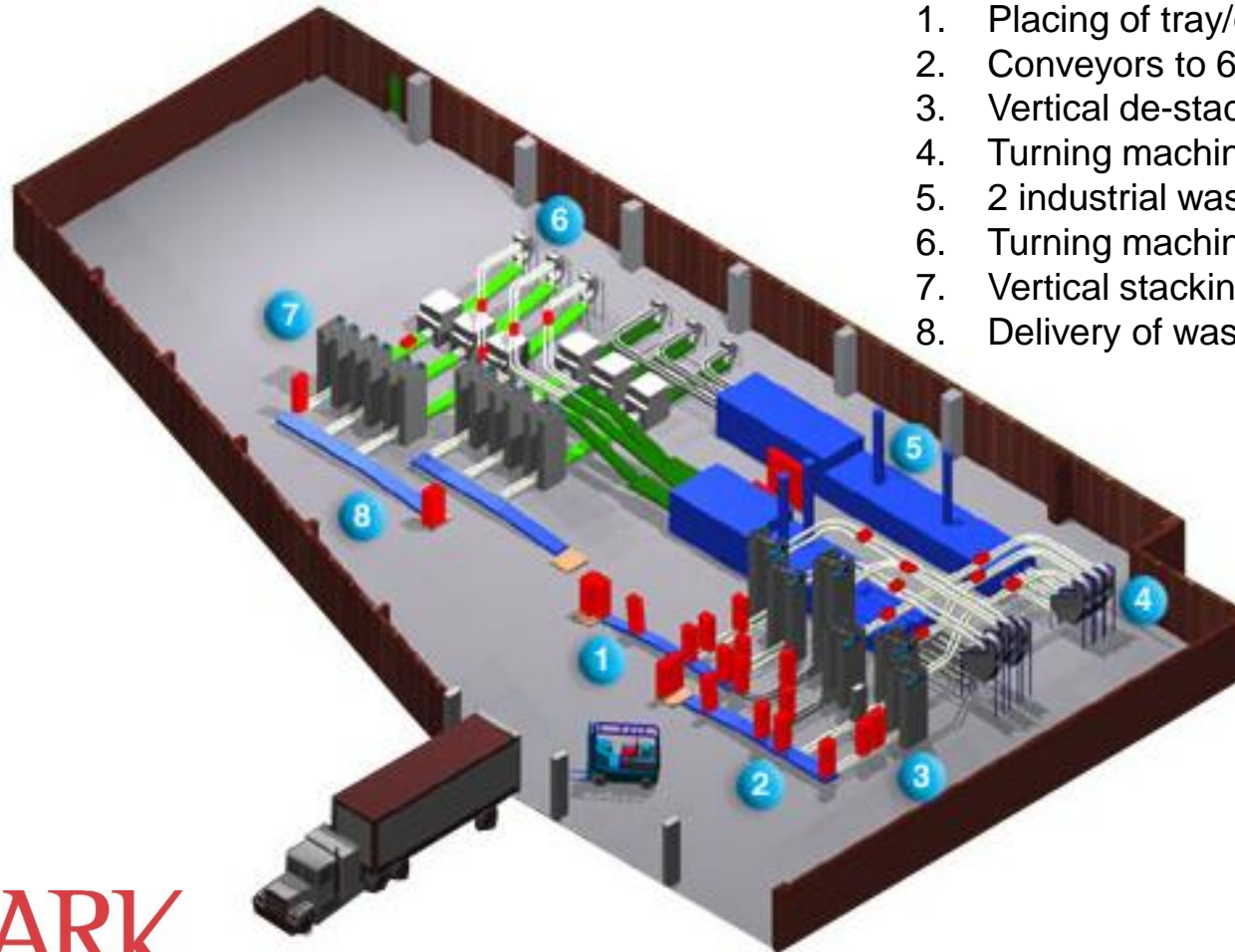


1. C-turner with waste hopper
2. Dissolving section
3. Heavy duty wash pump
4. Nozzle pipes in high pressure wash section
5. U-shaped wash tunnel
6. After-rinse section
7. Drying section
8. Filter screw with dirt separation
9. External chain conveyor

## Lanemark Tank Heating Burner Systems

### Cleaning (Industrial Washing Machines) – Plastic/Metal Tray/Crate Washers

Example of a distribution centre which includes plastic/metal tray/crate washing machines



1. Placing of tray/crate stacks for de-stacking
2. Conveyors to 6 de-stacking machines
3. Vertical de-stacking machines
4. Turning machines to empty waste
5. 2 industrial washing machines
6. Turning machines prior to stacking
7. Vertical stacking machines
8. Delivery of washed tray/crate stacks

## Lanemark Tank Heating Burner Systems

### Cleaning (Industrial Washing Machines) – Plastic/Metal Tray/Crate Washers

Example of a food distribution centre which includes a plastic/metal tray/crate washing machine.



1. Feeding of pallets with soiled trays/crates
2. Depalletizing unit, sideways feeding of empty pallets to washer
3. Compact pallet washer
4. Discharge of empty pallets
5. Turning of tray/crate stacks
6. Vertical de-stacking unit
7. 180° turning of trays/crates to empty waste
8. Manual stacking option
9. Pre-rinse unit; feeding to washing unit
10. Flume washing unit with pre-rinse, washing, and after-rinse
11. Tray/crate turner
12. Vertical stacking unit; feeding stacks to palletizer
13. Palletizing unit
14. Discharging of clean crates, stacked on pallets



## Lanemark Tank Heating Burner Systems

### Cleaning (Industrial Washing Machines) – Plastic/Metal Tray/Crate Washers

Example of a distribution centre which includes plastic/metal tray/crate washing machines.





## Lanemark Tank Heating Burner Systems

Tray/Crate Washing Installation: Numafa, Holland



2 off TX20N each rated at 80kW max gas input

## Lanemark Tank Heating Burner Systems

Tray/Crate Washing Installation: Norbert Dentressangle, UK

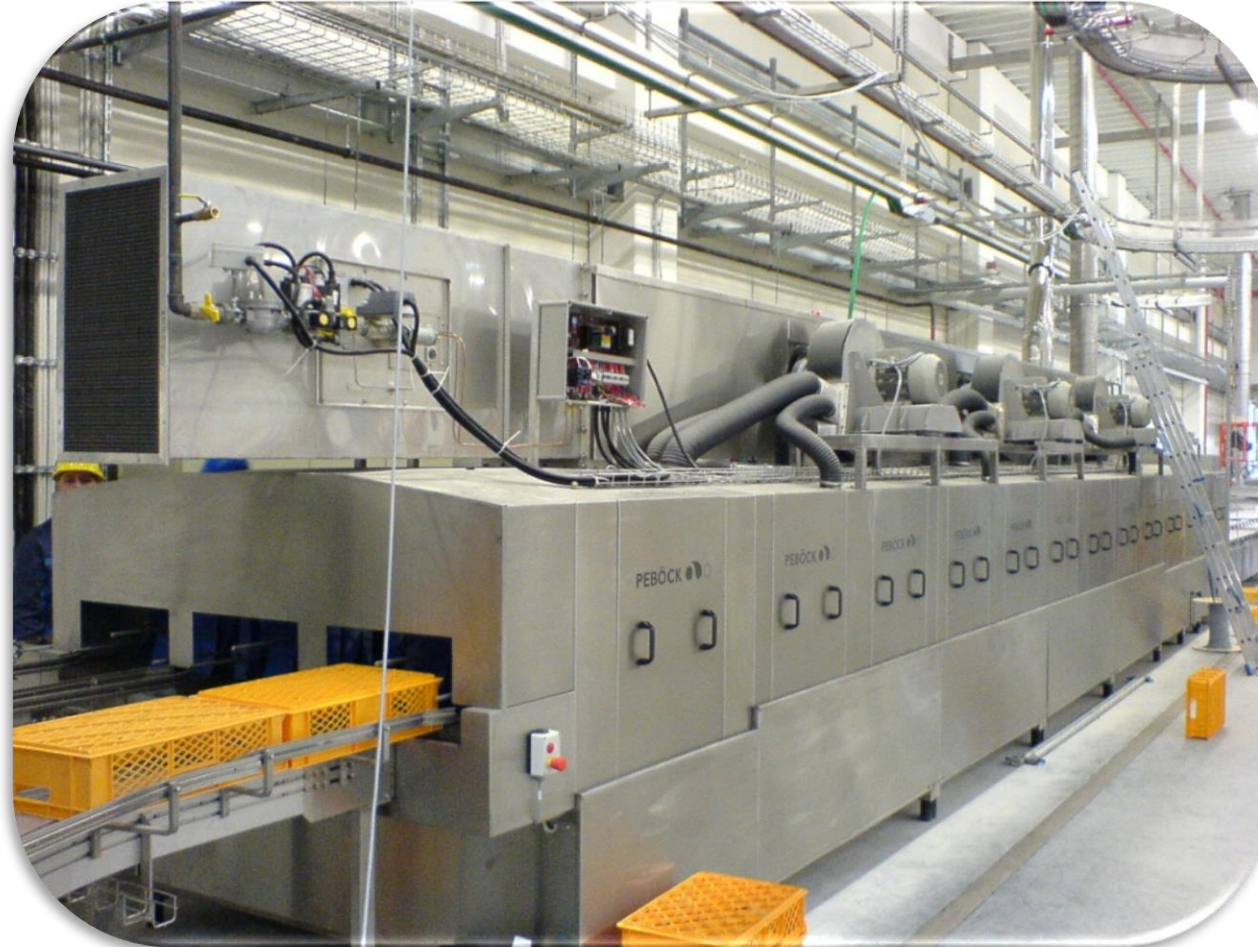


2 off TX40N each rated at 286kW max gas input  
1 off TX60N rated at 689kW max gross input



# Lanemark Tank Heating Burner Systems

Tray/Crate Washing Installation: MTV Pebock, Germany



1 off TX30N each rated at 145kW max gas input  
1 off TX30N each rated at 121kW max gas input  
1 off TX20N each rated at 60kW max gas input

## Lanemark Tank Heating Burner Systems

### Cleaning (Industrial Washing Machines) – Industrial Bottle Washers

Bottle washing machines are used primarily in the food and drinks industry and are suitable for the following types of bottles:

- Plastic (PET) bottles
- Glass bottles



The machines are generally designed to clean various types of glass bottles or plastic bottles either round or odd shaped, subjecting it to a series of distinct processing operations. The washing is by means of powerful stationary water jets in three different sections with varying duration. The output attained from this equipment can range to meet the process demands.





# Lanemark Tank Heating Burner Systems

## Cleaning (Industrial Washing Machines) – Industrial Bottle Washers

A bottle washing machines is designed to wash and sanitize the bottles in compliance with the food and drinks regulations as required and will typically include the following:

1. Unit where the residual liquid in the bottles is disposed of
2. Pre washing
3. Hot washing with appropriate chemicals
4. Pre rinsing washing
5. Washing with disinfectants
6. Final rinsing

<http://www.youtube.com/watch?v=a1f01aF2h8w&feature=related>



## Lanemark Tank Heating Burner Systems

Bottle Washing Installation: Kulmbacher Brewery, Germany



2 off TX60N each rated at 460kW max gas input

# Lanemark Tank Heating Burner Systems

Lanemark TX series high efficiency, small diameter immersion tube tank heating systems offer and uses the most cost effective method of heating process liquids which are used in many areas of industry.

Specific advantages compared with alternative tank heating methods:-

- Low operating costs - operating efficiencies of >90% gross calorific value >90% net calorific value
- TX small diameter immersion tube heat exchangers occupy minimal tank space. This enables smaller tanks to be used for new plant designs and allows simple replacement of other heating systems for retrofit applications. TX immersion tubes can be configured in multi-pass shapes to ensure that they remain well clear of internal tank fillings or processing areas.
- Tank heat input and immersion tube performance calculations are easily carried out using Lanemark's dedicated design software.
- Heat exchangers can be configured to fit rectangular tanks and horizontal or vertical cylindrical tanks utilising helical coil heat exchanger arrangements where necessary.
- Induced draught combustion air arrangement allows multiple burner systems to be connected to a common flue, reducing individual burner control.
- Single heat exchanger installation requires only two pipe flange fittings, usually in one tank wall.
- Operates with low gas supply pressures.
- Firing into rubber lined or fibre glass tanks is permitted due to low initial heat exchanger surface temperature at tank connection.
- Fully compatible with Lanemark TXD burner systems so that they may be incorporated into schemes where multiple TXD/TX burner arrangements are required.

**Typical Applications**

- **Product finishing**  
(metal parts, steel strip, wire products, etc.)
  - Pre-treatment and treatment processes including alkali/caustic degreasing
  - phosphating
  - hot water rinsing
  - aluminium etching
  - anodising
  - boxes and line coatings
  - Dip tanks
  - Spray systems
  - Hot water supply systems
- **Cleaning**  
(industrial washing machines)
  - Plastic crate washers
  - Parts washers
  - Bottle washers
- **Food and Drink Production**
  - Hot water tanks
  - Mini brewery wortoppers
  - Cleaning in place (CIP) tanks
  - Animal scalders
  - Blanchers

TX burners conform with European Standard EN 746 Part 2 as appropriate and are pre-wired and tested prior to despatch.

**Installation**

A modular Lanemark TX immersion tube burner system includes a cylindrical burner assembly built to withstand typical tank heating operating environments, a compact monoblock valve gas train, burner controls mounted in a protective control box (which can include a digital temperature controller), exhaust damper and an exhaust fan which can be coupled to multiple TX/TX burner installations.

	✓ Standard equipment	● Options
Fuels	✓ Natural gas	● Propane
Control voltages	✓ 230V	● 110V
Exhaust fan electrical supplies	✓ 400V/3ph/50Hz	● 230V/1ph/50Hz
Flame sensing	✓ Flame electrode	● UV scanner
Heat output control options	✓ On/Off or High/Low	● Modulating

**LANEMARK**  
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**TX TANK HEATING SYSTEMS**

**TX BURNERS DATA**

Model	Tube Size	Maximum Heat Input
TX15	1½" (40mm)	45 kW (150,000 Btu/h)
TX20	2" (50mm)	80 kW (275,000 Btu/h)
TX25E	2½" (65mm)	140 kW (475,000 Btu/h)
TX30	3" (75mm)	220 kW (750,000 Btu/h)
TX40	4" (100mm)	440 kW (1,500,000 Btu/h)
TX60	6" (150mm)	730 kW (2,500,000 Btu/h)

## TX series burner systems:

•Operation : High/Low or On/Off

The TX system includes a burner assembly, compact monoblock valve train, burner controls, exhaust damper and an exhaust fan.

Model	Tube Size	Maximum Heat Input	
TX15	1½" (40mm)	45kW	(150,000 Btu/h)
TX20	2" (50mm)	80kW	(275,000 Btu/h)
TX25E	2½" (65mm)	140kW	(475,000 Btu/h)
TX30	3" (75mm)	220kW	(750,000 Btu/h)
TX40	4" (100mm)	440kW	(1,500,000 Btu/h)
TX60	6" (150mm)	730kW	(2,500,000 Btu/h)

## Lanemark Tank Heating Burner Systems

The operation of the TX series burner system is On/Off or High/Low. The TX burner system can also be specified as either Modulating Gas only or Modulating Gas + Air.

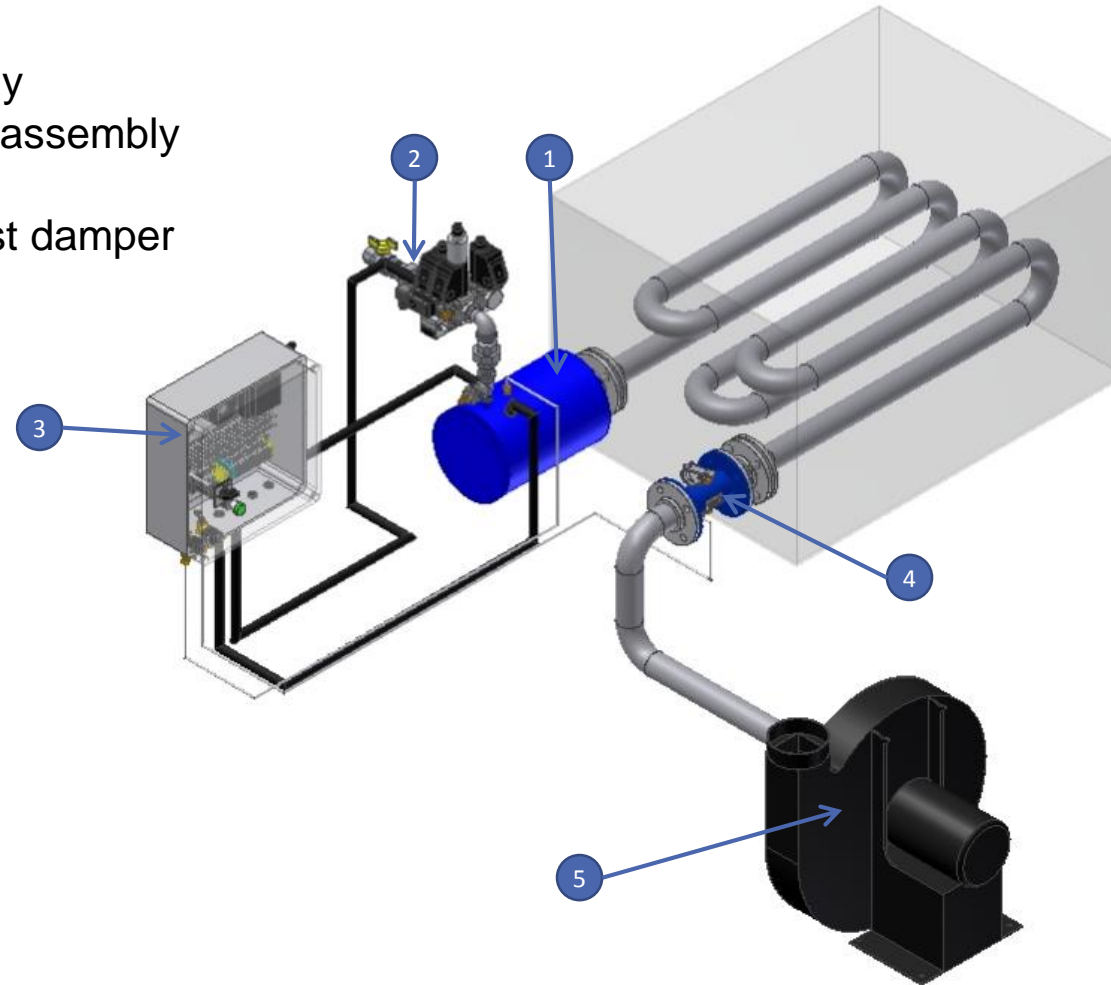
	Standard Equipment	Options
<b>Fuels</b>	Natural gas	Propane gas
<b>Control Voltages</b>	230V	110V
<b>Exhaust Fan Electrical Supplies</b>	400V/3ph/50Hz* (*60Hz option also available)	230V/1ph/50Hz*
<b>Flame Sensing</b>	Flame Electrode	U.V. Cell
<b>Heat Output Control Options</b>	On/Off  <i>or</i>  High/Low	Modulating ( <i>gas only</i> ) 0-10V DC <i>or</i> 4-20mA <i>or</i> 3 wire valve positioning  <i>or</i>  Modulating ( <i>gas + air</i> ) 0-10V DC <i>or</i> 4-20mA



## Lanemark Tank Heating Burner Systems

A typical Lanemark TX series high efficiency, small diameter immersion tube tank heating systems comprises:

1. Burner assembly
2. Gas valve train assembly
3. Control box
4. Flanged exhaust damper
5. Exhaust fan



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