

# TEMP PLANT

PLATING EQUIPMENT AND MACHINERY MANUFACTURING

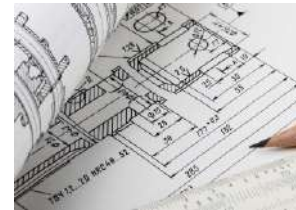
## TECHNOLOGY, DESIGNING AND EQUIPMENT SELECTING

The launching or rearranging of any manufacturing should be considered as the solution of several tasks (stages), each of which is **VERY IMPORTANT!** The equipment for finishing coatings is a custom solution in each case. Our company will help to develop the correct Technical Specifications, by which the technological process and equipment will be selected.



## SUPPLY AND ASSEMBLING

The series of actions that precedes putting into operation the equipment includes: recommendations for the room where it will be installed, consumables, installation itself, assembly, connection; if necessary, assistance in obtaining permits and certificates.



## COMMISSIONING AND TRAINING

Commissioning works take place after the final completion of the installation work. It is the final stage. In parallel with testing of each unit of equipment and adjusting the settings the training of personnel is carried out.



## MAINTENANCE SERVICE

TEMP Plant bears warranty obligations to the customer within the specified period including: planned repairs, the supply of spare parts, parts and components, consultancy support and site visits.



# PLATING EQUIPMENT



**PLATING EQUIPMENT** is intended to coat different products with one- or multi-layer, protective or decorative coatings.

According to the customers' requirements **TEMP** proposes the following **PLATING EQUIPMENT**:

- Automated and motorized plating lines
- Manual still-bath lines
- Polypropylene baths
- Plating baths
- Bell baths
- Drum baths
- Electroplating machines
- Polypropylene air ducts and lateral exhausts

**TEMP** Plant also produces **PLATING BATHS** with the outfit according to customers' technical requirements.

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# PLATING LINES AND MANIPULATORS

**TEMP** Plant offers plating lines and manipulators as separate plating equipment as well as turnkey solutions.

## PLATING LINES ARE USED FOR DIFFERENT TECHNOLOGICAL PROCESSES:

- Chroming
- Zinc Plating
- Chemical polishing
- Chemical blackening
- Anodizing
- Silver
- Tinning
- Blanching
- Coppering
- Dipping
- Degreasing
- Nickeling, etc.

## DEPENDING ON PURPOSE OF PLATING BATHS THEY CAN BE EQUIPPED AS FOLLOWS:

- Electric heaters
- Heat exchangers
- Temperature and level sensors
- Lateral exhausts
- Compressed air feed unit (bubbling device)
- Solution mixing device
- Filtration device
- Anchor/cathode rod swing device
- Overflow pockets
- Safety catch
- Shutoff and control valves
- Covers
- Thermal insulator (for hot fluid baths)

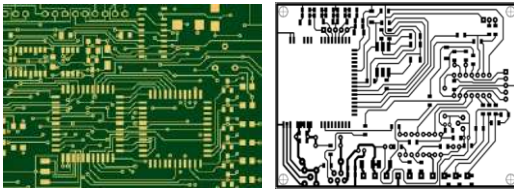
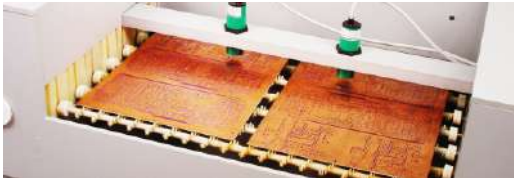


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# SPECIAL PROCESS EQUIPMENT FOR PCB MANUFACTURING



## MODULAR CONVEYOR LINES FOR PCB CHEMICAL TREATMENT:

- Caustic and acid etch
- Metal and photoresist stripping
- Chemical preparation before photoresist coating
- Chemical preparation before tinning
- Chemical and mechanical cleaning of printed circuit boards openings
- Chemical cleaning after tinning
- Photoresist, mask development

## AUTOMATIC MANIPULATOR LINES FOR PCB CHEMICAL-GALVANIC METALLIZATION:

- Chemical metallization
- Galvanic metallization
- PCB permanganate cleaning before metallizing
- Direct metallization
- Prelamination oxydation of PCB layers
- PCB top coating (gold, silver plating)

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# EQUIPMENT FOR PLATING WASTEWATER TREATMENT

Water treatment equipment works by the combined method which includes reactant treatment and advanced treatment in the ion exchanger. The treatment is carried out within the permissible limits of heavy metal ions and their compounds amounts in water, which are regulated by the customer's regional rules.

**OUR TREATMENT PLANT IS DESIGNED TO WORK WITH SINGLE OR SEVERAL PLATING LINES. IT INCLUDES THE FOLLOWING EQUIPMENT:**

- Holding tanks for acid-alkali and chromic wastes
- Holding tanks for strong solutions
- Wastewater treatment reactors
- Reactant preparation and batching units
- Separated sludge catcher
- Press filter for sludge drying
- Ion exchange unit for deep purification of wastewater
- Control system of the plant
- Treated water return system for further rising

**PRODUCTIVITY OF PLANTS:**

- When treatment of acid-alkali-bearing wastewater 1...6 m<sup>3</sup>/hour
- When treatment of chrome-bearing wastewater 1...2 m<sup>3</sup>/hour

**REQUIRED SPACE: 25...50 m<sup>2</sup>**

Plant configuration, volume of wastewater, layout and design concept, degree of process automation are determined based on the customers' technical requirements.

**OPTIONAL EQUIPMENT:**

- Degreasing solution purification unit
- Chrome electrolyte recovery unit
- Non-ferrous and precious metals recycling plant



# ROUND CONTAINERS, TANKS AND VESSELS



**TEMP** Plant manufactures vessel equipment out of chemically resistant polymeric materials of **SIMONA** Company (Germany):

- Polypropylene **PP**
- Polyvinyl chloride **PVC**
- Polyethylene **PE**
- Polyvinylidene fluoride **PVDF**

The tanks and vessels with capacity from 500 to 20.000 liters and with the required outfit can be used as follows:

- Holding tanks
- Reactors
- Catchers in wastewater neutralization and treatment units
- Plating baths

Water storage containers, and tanks for other purposes according to the customers' technical requirements. Tanks and vessels are produced with flat or conical bottom made by rolling, thermal diffusion and extrusion welding with modern equipment of **INGENIA**, **WEGENER**, **MUNSCH** and **LEISTER** (Germany).

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# MACHINERY MANUFACTURING AND METALWORKS

## METAL WORKING SERVICES:

- Blanking on:
  - ✓ guillotine shears
  - ✓ band-saw machines
  - ✓ gas-oxygen cutting machines
- Laser cutting
- Lathe works on: capstan and turret lathes screw-cutting lathe CNC lathe
- Turning and boring
- Jig boring
- Horizontal boring
- Milling on:
  - ✓ plane-milling machine
  - ✓ vertical-milling machine/ horizontal-milling machine
- Gear-hobbing
- Grinding
- Thread-grinding
- Gear shaping
- Drilling on vertical and radial drilling machines
- Shaping on planing machines
- Slotting
- Broaching on horizontal broaching machine
- CNC milling
- Bending on bending and forming machine
- Rolling
- Stamping – sheet cutting, punching, bending on presses
- Welding of carbon and stainless steel, aluminum
- Heat treatment
- Plastic goods production - PP, PVC, PE, PVDF



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# MACHINERY MANUFACTURING AND METALWORKS



With a great quantity of lathes and machines at our disposal **TEMP** Plant offers its customers the following:

- Manufacturing of custom metal parts or constructions
- Repair and duplication of worn parts
- Gear manufacturing
- Repair and production of parts and units for military hardware (hydraulic cylinders, rollers, caterpillar track, etc.)
- Production of sanitary ware casting lines

Metalworking services are provided according to the technical specification. In case of its absence, the specification may be developed on the basis of the provided sizes, pictures, designs or parts/metal structures themselves.

#### **WELDING EQUIPMENT:**

TEMP Plant has the extensive expertise in manufacturing of welding tables and fixing accessories intended to facilitate and optimize welders' work.

**MAX SIZE OF WELDING TABLE: 3000 X 1800 mm**

If necessary, modular tables can be arranged in any needed configuration. We will help you to select fixtures for your welding needs.

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# SANITARY WARE PRODUCTION LINES

## SANITARY WARE CASTING LINES

This equipment is manufactured by the slip casting into plaster molds.

Main components:

- Welded frame made of painted shaped metal tubes
- Lifting mechanism
- Roller track
- Cooling fans
- Slip line
- Water supply

## DRYING CHAMBER

It is used for drying of ceramics cast on the lines. The drying process is carried out by way of convection at the temperature of +65°C.

Main components:

- Welded frame made of painted shaped metal tubes (insulated with sandwich panels)
- Six sectional manually operated gates
- Lifting mechanism
- Air distributor

## GLAZING MACHINE

It is used to glaze the interior surfaces of sanitary ware.

Main components:

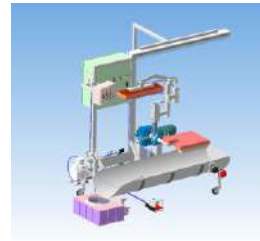
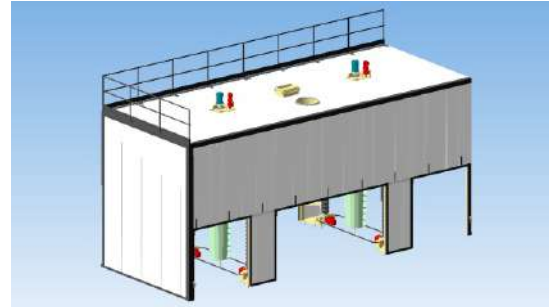
- Welded frame made of shaped stainless tubes
- Electro mechanical drive
- Diaphragm pump
- Magnetic filter
- Control box

## GLAZING CHAMBER

It is used to glaze the exterior surfaces of sanitary ware.

Main components:

- Welded frame made of shaped stainless tubes and plated with stainless steel
- Revolving table
- Two tanks for glaze



# PIPE WELDING EQUIPMENT



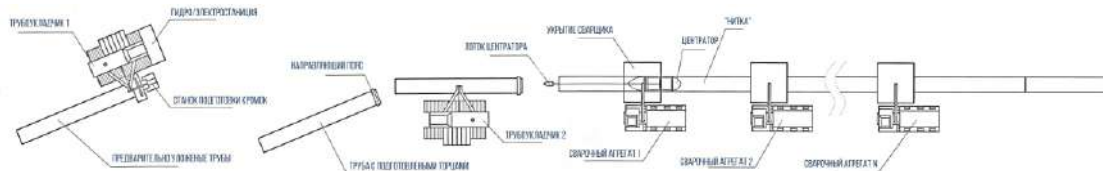
**TEMP** Plant is the main Ukrainian manufacturer and supplier of premium quality welding and support equipment for construction and repair of pipelines with different diameters.

The **reliable and efficient equipment** for mains construction:

- Automatic orbital welding complex
- Multi jointing lines
- Internal line up clamps: hydraulic, self-propelled, with copper backing ring
- External clamps: sectional, excentric, screw-type, tong-type
- Pipe facing machines
- Welding units: tracked, wheeled
- Induction pipe joint heaters

## OPTIONAL EQUIPMENT


- Welding tent
- Gas pipe-cutting machine
- Pumping machinery - tracked, wheeled
- Weld rod oven



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**TEMP** PLANT  
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