

Universal Industrial Plant Mfg. Co. (P) Ltd.
(Certified ISO 9001:2000 Company and CE)
IN COLLABORATION ING.L&ABOSCHI,ITALY

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Dear Sir,

SUB: TYPE 'A' WITH STAINLESS STEEL TRAYS

With reference to your mail we would like to know what type of plant you want :

A (1st Grade) 100% stainless steel (cryogenic grade) Air Separation Unit with the **TRAYS** which are die fitted inside the columns with leakproof argon welded technique and stainless steel re-boiler technology. Also all pipes will be in stainless steel to avoid any impurity for medical.

B (2nd Grade) Old type of copper column with copper trays(ordinary type) upper and lower column with old type of gas soldering and brazing without any flange joints and single welded structure (Disposable type)

C (3rd Grade) Old type copper modified with all copper columns and trays. Upper and lower column with old type of gas soldering/ brazing without any flange joints, only the outer shell outside the copper column/ tray is coated to give false look of stainless steel. Putting Stainless steel coating on Copper can be dangerous and explosive.

We would like to mention that Type A which is 100% Stainless steel will have all parts like trays & columns internally also in stainless steel (cryogenic grade) for very high purity 99.7% and leakproof operation confirming to European specifications. In this type of technology very sophisticated and state of the art technology & machinery are required to manufacture as per CE specifications because CE quality is one of the highest and strictest quality mark given by European communion and passport for good to enter Europe and first world countries.

It has come to our notice that many local Indian / Chinese manufacturers who do not have technology to manufacture stainless steel are coating copper to look like stainless steel but inside is old type of copper.

Engineering analysis of a typical 2nd Grade / 3rd Grade plant offered by local Indian / Chinese manufacturer to show old type of copper columns as stainless steel.

1. **Suction Filter** – M.S. Vessel consists of perforated sheet covered with Wire Mesh. This assists in removing dust from air before suction to air compressor.

THIS IS OLD TYPE LOCAL CHEAP FABRICATION AND NOT OF DESIGN NOT LATEST.

2. Air Compressor - Reciprocating multistage horizontal, positive displacement, piston type with Inter-coolers, Electric Motor and Starter including flywheel, Foundation Bolts, Motor Pulley, V-belts, Belt Guard, Slide Rails for the Motor.

LOCAL COMPRESSORS. CRANK SHAFT BREAKS. MANY PHOTOS AVAILABLE.

3. After Cooler – M. S. High Pressure Cooler consisting of M.S. High Pressure Tube Bundle submerged in cold circulating water.

OLD TYPE OF DESIGN NOT SKID MOUNTED. LEAKAGE AS MATERIAL IS M.S AND NOT CARBON STEEL.

4. Moisture Separator–2 Nos. - This is a cylindrical shape vessel made of M.S. duly fitted with Drain Valves for removal of moisture present in the process air.

OLD TYPE OF DESIGN NOT SKID MOUNTED. LEAKAGE AS MATERIAL IS M.S AND NOT CARBON STEEL. EXPLOSION WIL TAKE PLACE AS THERE IS PRESSURE ISIDE THE VESSEL AND NOT CARBON STEEL.

5. Cascade Cooler - This is a specially designed vessel consisting of High Pressure Coils in two separate chambers. The process air that passes through this Cooler is cooled through incoming Nitrogen from the A.S.U. These coils are immersed in water with a provision for water level indicator.

CASCADE OLD TYPE OF DESIGN NOT SKID MOUNTED. LEAKAGE AS MATERIAL IS M.S AND NOT CARBON STEEL. EXPLOSION WIL TAKE PLACE AS THERE IS PRESSURE ISIDE THE VESSEL AND NOT CARBON STEEL.

6. Activated Carbon/ Alumina Filter - This equipment is made of M.S. cylindrical shape vessel with activated carbon/Alumina with 2 Nos. sand filters inside. This assist absorption of Hydro-Carbons in the process air.

THIS CANNOT REMOVE OIL UNDER ANY CIRCUMSTANCES .ONE PLANT IN SYRIA EXPLODED DUE TO OIL GOING TO COLUMN AND ANOTHER PLANT IN AFRICA THE ACTIVATED CARBON WITH FINE PARTICLES OF CRUSH COAL ENTER THE AIR SEPARATOR AND WILL CHOKE THE TRAYS PERMANENTLY

7. Molecular Battery - filled with Molecular sieve type 13X with a regenerating heater. (It absorbs moisture, CO₂, traces of Acetylene and other hydrocarbons.

MOLECULAR SIEVE BATTERY - THIS CANNOT REMOVE OIL UNDER ANY CIRCUMSTANCES .ONE PLANT IN SYRIA EXPLODED DUE TO OIL GOING TO COLUMN AND ANOTHER PLANT IN AFRICA THE ACTIVATED CARBON WITH FINE PARTICLES OF CRUSH COAL ENTER THE AIR SEPARATOR AND WILL CHOKE THE TRAYS PERMANENTLY

8. Ceramic Filter - This equipment is made of M.S. and is cylindrical in shape. It consist of micro ceramic filter to avoid entry of dust to the A.S.U.

THIS CANNOT REMOVE OIL UNDER ANY CIRCUMSTANCES .ONE PLANT IN SYRIA EXPLODED DUE TO OIL GOING TO COLUMN AND ANOTHER PLANT IN AFRICA THE ACTIVATED CARBON WITH FINE PARTICLES OF CRUSH COAL ENTER THE AIR SEPARATOR AND WILL CHOKE THE TRAYS PERMANENTLY

9. Expansion Engine - a vertical reciprocating machine for expanding air from operating pressure to 5kg/cm². Complete with Fly Wheel, Pressure Gauges Motor, Motor Pulley, V-belts, Belt Guard, Inter-connecting Copper Pipes and bursting disk for safety.
THIS IS OLD DESIGN WHERE YOU WILL HAVE CONSTANT PROBLEM OF OIL LEAKAGE AND WEARING OF VALVES
10. Cold Box - consists of Air Separation Column with Heat Exchangers for heat transfer between the incoming air and the out going cold Nitrogen and Oxygen. Cold Box is equipped with expansion valves for controlling the operation of the Plant and delivery of the products. Control Panel and Defrost Heater for the Cold Box is provided with the Plant. Cold Box is insulated with perlite powder.
**COLD BOX INTERNALLY IS NOT MADE OF STAINLESS STEEL BUT MADE OF COPPER AND ORDINARY MILD STEEL.
THE TRAYS / COLUMNS ARE NOT MADE IN STAINLESS STEEL AS TECHNOLOGY FOR STAINLESS STEEL TRAYS IS NOT AVAILABLE IN ASIA.
THIN COVER OF STAINLESS STEEL SHEET IS GIVEN ON COPPER TRAYS / COLUMNS AND ALL PIPES ARE ALSO COPPER NOT 100% STAINLESS STEEL.**
11. Liquid Oxygen Pump - a single cylinder equipment which will fill bone dry Oxygen into cylinders. The Pump is supplied with Motor Pulley & V-belts.
THE PUMP IS NOT IN STAINLESS STEEL AND NOT OIL FREE DESIGN.
12. (a) Gas/Air Lines - Pipelines for the Process Air, Nitrogen and Oxygen as per standard Layout.
THE PLANT IS NOT SKID MOUNTED . EACH PART IS SUPPLIED SEPARATELY AND ALSO GAS/AIRLINES ARE NOT FACTORY FITTED.
b) Filling Manifolds, Gauges, Valves, Indicators, Safety Devices, and Testing Kit.
**THIS IS MADE IN BRASS WHICH CAN EXPLODE.
EVEN FLEXIBLE FILLING CONNECTIONS ARE OLD TYPE COPPER.**
13. Insulation – Insulation wool with wire mesh for insulation of Cascade Cooler, Alumina Filter, Molecular Battery, Pipelines.
cannot use.
**WOOL OR INSULATION IN THE LAST 30 YEARS.
THERE ARE NO INSULATORS AND WILL RESULT IN LOSS OF COLD AND LOSS OF PRODUCTION AND PURITY.**





With best regards

**Ing. L & A BOSCHI ITALY
CUSTOMER CARE**

SEE OUR SALIENT FEATURES CHECKLIST OF COMPARISON.

**PLEASE BUY EUROPEAN/AMERICAN BRANDED PLANTS FOR
CRYOGENIC EQUIPMENT**

**DETAILED COMPARISON BETWEEN LOCAL INDIAN PLANTS
NON-BRANDED (OLD TYPE COPPER)
AND UNIVERSAL 'BOSCHI' ITALY BRAND OXYGEN PLANTS
(ISO 9001:2000 AND CE CERTIFIED)**

LOCAL/ OLD COPPER TYPE	UNIVERSAL
	
<p align="center">Old Type</p>	<p align="center">New Type</p>
	
<p>Old type without process skid. Takes very long time in installation at site and heavy losses in production</p>	<p align="center">Compact Process Skid</p>



Local Old Copper Type, Indian/Chinese



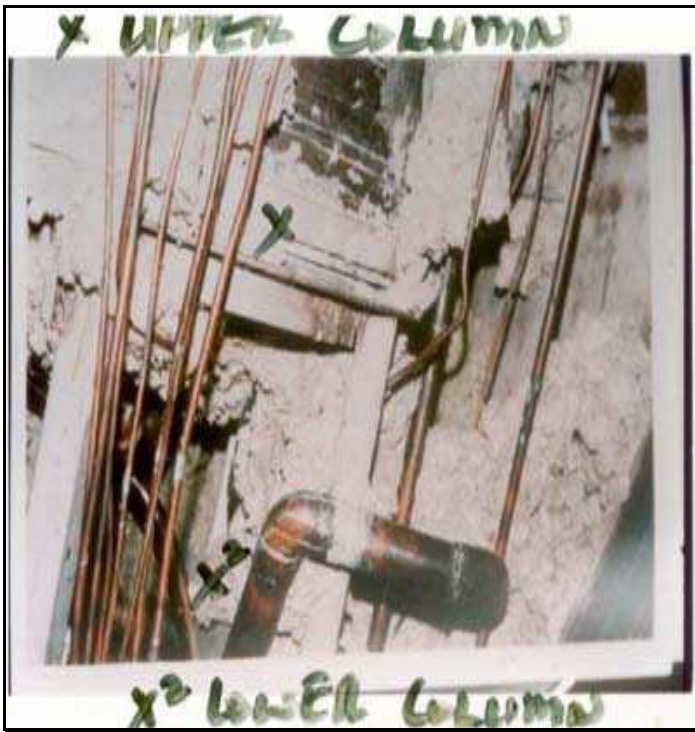
Universal 'Boschi' Italy Brand



Leakage in Cold Box made from copper



Air separation columns



Explosion of Copper lines/ column used by non-branded manufacturer.



Leakproof 100% stainless steel columns



Leakage in cold box due to explosion of Copper line.



Argon welded leakproof stainless steel columns, with all stainless steel lines.