



**ING. L. & A. BOSCHI**  
IMPIANTI LIQUEFAZIONE E PRODUZIONE GAS TECNICI



## ORIGINAL SOURCE OF DESGNS AND TECHNOLOGY

UNIVERSAL COMPANY USES THE BRAND UNIVERSAL BOSCHI ITALY AS DR. BOSCHI OF ING. L & A BOSCHI GAVE THE PERMISSION OFFICIALLY TO USE THE BRAND NAME BOSCHI ITALY IN ALL THE OXYGEN NITROGEN AND ARGON PLANTS MANUFACTURED BY UNIVERSAL AS PER BOSCHI ITALY TECHNOLOGY ACQUIRED SINCE 1985.

THE FIRST COLUMN WAS DEVELOPED IN 1989 BY UNIVERSAL AT NEW DELHI AND DR. BOSCHI HIMSELF CAME TO UNIVERSAL FACTORY AND CERTIFIED THAT THE QUALITY CONFIRMED INTERNATIONAL STANDARDS.

## **AIR SEPARATION COLUMNS** ( 100% CRYOGENIC GRADE STAINLESS STEEL)

*AIR SEPARATION COLUMNS ARE THE MAIN PART OF THE OXYGEN PLANT PROCESS AND IT OPERATED UNDER SUB ZERO TEMPERATURES UPTO MINUS 190 DEGREES CENTIGRADE.*

UNIVERSAL BOSCHI OXYGEN PLANTS AIR SEPARATION COLUMNS USES HIGH DEGREE OF ENGINEERING SKILLS AND PERFECTION IN TECHNOLOGY WITH ORIGINAL DESIGNS AND ENGINEERING AND SKILLS INHERITED FROM EUROPEAN MANUFACTURERS ING L & A BOSCHI ITALY OVER MANY DECADES OF DEDICATED HARD WORK BY OUR TEAM UNDER OUR TECHNICAL DIRECTOR MR. SANJIV AGRAWAL ( B.E .)



**INSIDE PHOTO OF AIR SEPARATION COLUMN COLD BOX - LIQUID OXYGEN AND OXYGEN GAS PRODUCTION.**

**ALL PIPING AND SUBCOOLERS CONDENSOR UPPER LOWER COLUMN, EXCHANGERS IN 100% CRYOGENIC GRADE STAINLES STEEL**

**WHY 100% CRYOGENIC GRADE STAINLESS STEEL AIR SEPARATION COLUMN WAS DEVELOPED BY UNIVERSAL BOSCHI FOR OXYGEN NITROGEN PLANTS.**

- ❖ *INITIALLY IN THE 1960'S AND 70 S ALL THE AIR SEPARATION COLUMNS WERE MADE IN COPPER INCLUDING ALL THE INTERCONNECTING PIPING .*
- ❖ *ALL THE EUROPEAN MANUFACTURERS STARTED MANUFACTURING COLUMNS IN STAINLESS STEEL IN EARLY 1980 .*
- ❖ *THE COPPER COLUMNS HAD LOW LIFE AND WERE PRONE TO CRACKING UNDER PRESSURES AND EXTREME TEMPERATURE CONDITIONS.*
- ❖ *ALSO COPPER REACTS WITH OXYGEN TO MAKE IMPURITIES.SO STAINLESS STEEL OF CRYOGENIC GRADE*
- ❖ *THEREFORE UNIVERSAL ENGINEERS USED THE BOSCHI ITALY EUROPEAN PERFECTED AND PROVEN TECHNOLOGY TO MANUFACTURE WORLD CLASS AIR SEPARATION COLUMNS.*
- ❖ *UNIVERSAL STARTED MANUFACTURING LEAKPROOF AIR SEPARATION COLUMNS*

**UNIVERSAL R & D AND ENGINEERS HAS TAKEN 27 YEARS WITH BOSCHI ITALY TECHNICAL HELP AND ORIGINAL DESIGNS AND DRAWINGS TO MANUFACTURE A COLUMN WITH 100% STAINLESS STEEL CONDENSOR**



**100% cryogenic grade stainless steel column INSIDE PHOTO OF COLD BOX.**

(PHOTO TAKEN PRIOR TO SHIPMENT TO USA) FOR BONE DRY MEDICAL GRADE LIQUID /GAS OXYGEN PRODUCTION

**IMPORTANT NOTE :**

**UNIVERSAL IS THE FIRST COMPANY TO DEVELOP THE 100% STAINLESS STEEL COLUMN IN 2002 WITH THE ORIGINAL DRAWINGS AND DESIGNS ACQUIRED FROM ING. L & A . BOSCHI LEGALLY SINCE 1985 OVER ONE DECADE**

**BUYERS :** BEWARE OF FAKES AND COPIES AND ARE REQUESTED NOT BUY OR ENCOURAGE COPIES.AS THESE COPIES USE SUBSTANDARD MATERIALS DUE TO LACK OF ENGINEERING HIGHLY EXPLOSIVE .

**CLICK LEGAL**



**COLD BOX COLUMN -STAINLESS STEEL -CRYOGENIC GRADE BUILT TO ASME STANDARDS**

### **PROCES SKID**

#### **WHAT IS PROCESS SKID**

*THIS IS A COMPLETE PACKAGED UNIT SKID MOUNTD WITH ALL ITEMS FROM THE AFTER COOLER , MOISTURE SEPERATORS, NITROGEN COOLER FREON CHILLER OIL ADSORBER HYDROCARBON FILTERS*

*MOLECULAR SIEVE BATTERY DUST FILTER ALL FACTORY FITTED AND SUPPLIED AS A PACKAGED UNIT READY FOR INSTALLATION.*



*PHOTO OF 2015 MODEL SKID MOUNTED PROCESS SKID FOR USA OIL AND HYDROCARBON FILERATION SYSTEM FOR HIGH AIR QUALITY AMERICAN STANDARDS AT UNIVERSAL BOSCHI DIVISION NEW DELHI*

### **HISTORY**

THE OXYGEN PLANTS IN THE EARLY 1960 AND 70'S USED ALL PARTS SUCH AS COOLER CASCADE COOLER FREON UNIT MOISTURE SEPERATOR MOLECULARSIEVE BATTERY IN ORDINARY MILD STEEL AND PIPES OF COOLERS ALSO IN IRON AND M.S. .

SUBSEQUENTLY IN EUROPE AND AMERICA WITH THE DEVELOPMENT OF HIGHER STRENGTH CARBON STEEL PIPES AND HIGH TENSILE MATERIALS ASTM 106 GRADE B PIPES SEAMLESS AND ALSO CARBON STEELS WERE DEVELOPED AND USED IN THE MANUFACTURE OF COOLERS AND MOLECULAR BATTERY OF OXYGEN PLANTS.

### **WHY PROCESS SKID WAS DEVELOPED WAS DEVELOPED BY UNIVERSAL IN 2002 FOR OXYGEN PLANTS**

- *ALL THE ITEMS COOLERS SEPERATORS COIL COOLERS MOLECULAR SIEVE BATTERY WERE SUPPLIED SEPERATELY WITH THE OXYGEN PLANT*
- *THERE WERE COMPLICATED CONCRETE FOUNDATIONS MADE AT SITE*
- *LOT OF COMPLICATED PIPING AT SITE DUE TO LACK OF PROPER WELDING FACILITIES LEAKAGE OCCURRED*
- *THERE WAS ALIGNMENT PROBLEMS AND LOT OF DELAYS IN INSTALLATION OF OXYGEN PLANTS WITH SO MANY SEPERATE PARTS*
- *THERE WERE CHANCES OF DAMAGE AND MISSING PARTS WHICH IS COMPLETELY ELIMINATED BY A PROCESS SKID*
- *THERE WERE OPERATIONAL PROBLEMS AS THERE WAS NO SINGLE POINT OF CONTROL*

**THE COMPLETE SET OF EQUIPMENTS AFTER THE AIR COMPRESSOR ARE NEATLY MOUNTES**



**PHOTO OF PROCESS SKID COOLERS IN 100% STAINLESS STEEL OPTIONAL FEATURE ( CORROSION PROOF)**

**ALL STAINLESS STEEL COOLERS TANKS AND PIPING SPECIALLY MADE FOR USA MARKET**

### **ADVANTAGES**

UNIVERSAL DEVELOPED THE FIRST PROCESS SKID IN 2002 WHICH ESSENTIALLY USES A BASE FRAME TO MOUNT ALL THE PROCESS EQUIPMENTS SUSCH AS COOLERS MOISTURE SEPERATORS NITROGEN COOLERS

## OIL AND HYDROCARBON FILERATION SYSTEM FOR AIR QUALIY OF .01 PPM

### EXPANDER ( FORMERLY EXPANSION ENGINE )

THE CRYOGENIC EXPANER NEW MODEL HAS BEEN DEVELOPED IN 100% STAINLESS STEEL AND MICRON FINISHED PARTS.

AFTER OVER 20 YEARS BY UNIVERSAL R & D DEPARTMENT AFTER TAKING FEED BACK OF OVER 400 EXPANDERS MADE BY UNIVERSAL WORKING IN DIFFERENT PARTS OF THE GLOBE.



### SKID MOUNTED MEDIUM CAPACITY EXPANDER WITH ALL STAINLESS STEEL HEAD FOR DEVELOPED COUNTRIES NEW MODEL

- ✓ **MAIN FEATURES OF NEW MODEL EXPANDER FOR** *COMPLETE SKID MOUNTED -FACTORY ALIGNED*
- ✓ *INCORPORATES NEW TECHNOLOGY AND COOLING SYSTEM AND CAN BE INTEGRATED WITH PLC .*
- ✓ *LONG TROUBLE FREE WORKING CYCLES.*
- ✓ *NEW DESIGN HAS CORROSION PROOF STAINLESS STEEL HEAD AND HOUSINGS.*
- ✓ *VERY HIGH EFFICIENCY COMPARED TO CONVENTIONAL EXPANSION ENGINES USING MILD STEEL IRON HEAD AND PARTS BY OTHER INDIAN MANUFACTURERS*

- ✓ *LOW WORKING PRESSURES OF 5 TO 7 BAR FOR SELECT MODELS*
- ✓ *OIL FREE DESIGN*
- ✓ *AIR COMPRESSOR ( OIL FREE ) NEW TECHNOLOGY*

*AS WE ARE ALL AWARE THAT OXYGEN IS EXPLOSIVE WHEN UNDER PRESSURE COMES IN CONTACT WITH THE UNIVERSAL HAS DEVELOPED A WIDE RANGE OF OIL FREE AIR COMPRESSORS FOR SELECT MODELS AND DEVELOPED COUNTRIES FACING STRINGENT SAFETY REQUIREMENTS . THESE ARE READY TO START PACKAGED UNITS AND ARE **OIL FREE DESIGNS***



*OIL FREE SKID MOUNTED PACKAGED AIR COMPRESSORS AT UNIVERSAL BOSCHI FACILITY*

## **WHY UNIVERSAL OFFERS WORLD CLASS OIL FREE AIR COMPRESSORS SOLUTIONS**

- *COMPRESSORS AVAILABLE IN INDIA ARE MOSTLY OIL LUBRICATED OIL PISTON TYPE.*
  - *CONVENTIONAL AIR COMPRESSORS ARE ALL OIL LUBRICATED MAY NOT DESIGNED TO RUN CONTINUOUSLY*
  - *KIRLOSKAR IND INGERSOL RAND INDIA MAKE AIR COMPRESSORS ARE MOSTLY OIL LUBRICATED*
  - *ALL PARTS ARE RUBBING WITH HEAVY CRANKSHAFTS AND RECIPROCATING MECHANISM AND ARE SUBJECT TO BREAKAGES .*
  - *INGERSOL RAND DEVELOPED OIL PISTON COMPRESSOR IN 1923 .IS OLD TECHNOLOGY*
  - *OXYGEN PLANTS NEED VERY HIGH QUALITY OF OIL FREE AIR WHICH INDIAN PISTON OIL COMPRESSORS*
  - *SAFETY REQUIREMENTS DO NOT PERMIT OIL LADEN AIR TO ENTER COLUMN AND MIX WITH OXYGEN*
  - *MANUY ACCIDENTS ARE REPORTED EAXH YEAR OF OXYGEN PLANTS HAVE HEVY BULKY OIL PISTON AIR COMPRESSORS*
  - *OIL FREE AIR COMPRESSORS PROVIDE A COMPLETELY OIL FREE SOLUTION.*
  - *MANUFACTURERS OF OXYGEN PLANTS SUPPLYING OIL PISTON AIR COMPRESSORS OF KIRLOSKAR AND INGERSOL RAND MAKE IN INDIA WITH HIGH SAFETY COMPROMISES..*
  - *UNIVERSAL FELT THE DIRE NEED TO DEVELOP THE COMPLETE RANGE OF OIL FREE SOLUTION FOR OXYGEN PLANTS*
  - *MEDICAL OXYGEN NOT ALLOW OIL PISTON AIR COMPRESSORS*
  - *FOOD GRADE NITROGEN AND HIGH QUALITY NOT PERMIT HYDROCARBONS ABOVE 0. 3 TO 3PPM.*
- BUYERS : DO NOT USE MUTI-4 STAGE OIL PISTON AIR COMPRESSORS FOR OXYGEN PLANTS.AS OIL CARRYOVER CAN BE VERY HIGH AND POSE SAFETY RISKS.***

## **ATLAS COPCO ROTARY AIR COMPRESSORS -MOST PREFERRED IN THE WORLD**

### *ROTARY AIR COMPRESSORS ATLAS COPCO USED IN UBT AND SELECT MODELS*

- ✓ *TROUBLE FREE OPERATION*
- ✓ *OIL FREE RANGE OF ROTARY AIR COMPRESSORS AVAILABLE BY ATLSA COPCO*
- ✓ *NO SURPRISES WITH SUDDEN BREAKDOWNS LIKE PISTON COMPRESSORS*
- ✓ *ARE HIGHLY RELIABLE*
- ✓ *USES WORLD CLASS TECHNOLOGY*
- ✓ *SAVE UPTO 50 % OVERALL AVERAGE POWER BILLS*
- ✓ *AVOID BREAKDOWNS OF YOUR OXYGEN PLANTS*
- ✓ *IMPROVE PRODUCTION EFFICIENCY BY UPTO 100%*
- ✓ *INCREASE PROFITS BY USING ATLAS COPSO AIR COMPESOORS*

**Reliable Rotatary Atlas Copco Air Compressor Options Available With  
UBT/SELECT Models**

**SAVE TROUBLE- SAVE POWER UPTO 50%**

