



**Refrigerated Air Dryer
CAT-X1-283W
Techno-Commercial Proposal**

**Commercial
offer**

6 COMMERCIAL OFFER

water cooled

Offer Number: SMPL/SAL/OF/28/28739 Offer Date: 06/02/2023

Customer Details:

M/s Jindal Aluminium Limited
SP-2/333,RIICO Industrial Area, Bhiwadi Dist
Alwar-301019

1000 CFM

Sl. No	Product Code	Product Description	HSN Code	Qty	Rate (INR)	Amount (INR)
1	CAT-X1-283W	Refrigerated Air Dryer	84193900	1	6,55,000.00	6,55,000.00
2	CAT-M2-283 PF	Pre Filter with Timer drain	84219900	1	88,000.00	88,000.00
3	CAT-M2-283 FF	Final Filter with Timer drain	84219900	1	92,000.00	92,000.00
4	CAT-M2-283 CF	Carbon Filter with Timer drain	84219900	1	92,000.00	92,000.00

Basic Price: 9,27,000.00

In words: Nine Lakh Twenty Seven Thousand Rupees Only.

Terms and Conditions as detailed in Section 5.1

Kavan M C
Mob:7349142424

**For SANPAR MICROFILTERS
PVT LTD**

*Rs. 8,40,000/-
as above
set
Rs. 8,40,000/-
set*

CHECK LIST

DISCOUNT *ed Rate as above*

PRICE BASIS : FOR BHIWADI *FOR - JAL BWP.*

INCL / EXTRA

GST/IGST : *IGST: 18% Ex-bond.*

DELIVERY : *6 weeks from the date of order*

PAYMENT : *7 days from the date of receipt of material.*

WARRANTY : *one year from the date of supply.*

VALIDITY : *Revised*

CHECKED BY : _____

Authorized Signatory

*discussed with
Mr. Kavan and agreed
above*

SMPL/SAL/OF/28/28739

Offer Date: 06/02/2023



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Technical
Specifications

FINAL FILTER

SR. NO.	DESCRIPTION	UNITS	SANPAR
1.1	Make / Model		SANPAR/ CAT-M2-283 FF
1.2	Capacity (FAD)	Cfm	1000
1.3	Working pressure.	Bar(g)	7-8
1.4	Max. Air inlet temperature	Degree C	50
1.5	Micron Rating	micron	0.01
1.6	Filter Elements	Nos	2
1.7	Filter Element Material		Borosilicate glass fibre
1.8	Filter Housing M. O. C.		Carbon Steel
1.9	Filter End connections	DN	100
2	ACCESSORIES		
2.1	SANPAR Timer Drain		STD 450

CARBON FILTER

SR. NO.	DESCRIPTION	UNITS	SANPAR
1.1	Make / Model		SANPAR/ CAT-M2-283 CF
1.2	Capacity (FAD)	Cfm	1000
1.3	Working pressure.	Bar(g)	7-8
1.4	Max. Air inlet temperature	Degree C	50
1.5	Oil removal rate	Mg/m3	0.005
1.6	Filter Elements	Nos	2
1.7	Filter Element Material		Carbon granules
1.8	Filter Housing M. O. C.		Carbon Steel
1.9	Filter End connections	DN	100
2	ACCESSORIES		
2.1	SANPAR Timer Drain		STD 450



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6.1 Terms and Conditions

Price

Ex works Bangalore

PACKING & FORWARDING

Extra @3% on the basic price

GST

Extra @18%

DELIVERY

Within 12 weeks from the date of receipt of advance payment .

PAYMENT TERMS

50% advance and 50% against Proforma invoice.

WARRANTY

The equipment's supplied by SANPAR shall be warranted against any manufacturing defects or poor workmanship for a period of 12 months from the date of supply.

FREIGHT & INSURANCE

Extra on to pay basis

VALIDITY

Validity of our offer is for 30 days from the date of this offer.

LIMITATION OF LIABILITY

Notwithstanding anything to the contrary in this Agreement or the Purchase Order or any other mutually agreed document between the parties, the maximum liability for damages of the Contractor/Supplier, its servants or agents, shall under no circumstances exceed an amount equal to the Agreement or the Purchase Order Price. The Contractor/Supplier shall not in any case be liable for loss of profit or special, punitive, exemplary, indirect, or consequential losses whatsoever.



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**Technical
Specifications**

5 TECHNICAL SPECIFICATIONS OF FILTER

PRE-FILTER

Pre-Filter uses coarse filter element capable of removing dust particles of size 3 microns. It uses particulate filtration technology to achieve an efficiency of 99.99%.

The filter housing is powder coated internally and externally to protect against corrosion and scratches. The filter is also aerodynamically designed to minimize pressure drops.

The filter elements are manufactured inhouse and quality tested to ensure consistent performance.

SR. NO.	DESCRIPTION	UNITS	SANPAR
1.1	Make / Model		SANPAR/ CAT-M2-283 PF
1.2	Capacity (FAD)	Cfm	1000
1.3	Working pressure.	Bar(g)	7-8
1.4	Max. Air inlet temperature	Degree C	50
1.5	Micron Rating	micron	3
1.6	Filter Elements	Nos	2
1.7	Filter Element Material		Pleated Cellulose Acetate
1.8	Filter Housing M. O. C.		Carbon Steel
1.9	Filter End connections	DN	100
2	ACCESSORIES		
2.1	SANPAR Timer Drain		STD 450



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Specifications**

4.5 Miscellaneous

SR. NO.	DESCRIPTION	UNITS	SANPAR
1	PACKAGE DATA		
1.1	Weight of Drying Unit (Empty / Operating)	kgs	---
1.2	Space Required (Length X Breadth X Height)	mm	-----
2	SCOPE OF SUPPLY		
2.1	Transportation		To pay
2.2	Inspection and Testing as Per Specification		As per Sanpar Quality Assurance Plan
2.3	Sound Protection If Necessary		Not applicable
2.4	Painting as Per Manufacturer's Standard		Powder coated
2.5	Commissioning and Mandatory Spares		Included
2.6	Spares for Two Years Continuous Operation (Separate Quote)		Can be provided on request
2.7	Special Tools and Tackles If Required		Not applicable
2.8	Supervision of Erection And commissioning		Included



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Testing & Standards

SANPAR is committed to design, manufacture and maintain its products to the satisfaction of the customer through continual improvement in the Quality Management System. We develop our solutions after careful consideration of technical and commercial data. Each product undergoes multiple tests and are designed according to international standards.

Standards	Description
ISO 8573-1:2010	Xeros refrigerated air dryer adheres to compressed air quality standard ISO 8573-1 Class 4 by maintaining PDP: +3°C at working pressure.
ISO 7183	Compressed air dryer is constructed as per ISO specification and testing methods
ISO 9001:2015	The entire operation of SANPAR is managed by the ISO 9001:2015 Quality Management System
Tests	Description
Nitrogen Test	Heat exchanger is filled with nitrogen and tested to ensure the absence of leaks.
Leakage Test	The refrigerant circuit is tested for leakage through the use of compressed air.



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4.4 ALARMS / SAFETY INTERLOCKS

SANPAR provides ten step alarm and safety interlocks to protect the dryer from unprecedented fluctuations and electrical discharge. Our dryers are equipped to automatically shut down in the event of a malfunction, thus protecting the dryer and other machines. Alarms for refrigerant leakage and RCCB are also provided for the safety of user. Refrigerant compressor is provided with a multitude of safety features against fluctuations in pressure and temperature.

SR. NO.	Component	Alarms/ Safety Interlocks	Description
1	Air dryer	Single Phase Preventer (SPP)	Protects against Phase failure, phase imbalance, phase reversal
1.1		Residual Current Circuit Breaker (RCCB)	Protects against electric shock
2	Refrigerant compressor	High pressure trip	Trips against high pressure. Provided with a manual reset
2.1		Suction pressure trip	Provided with automatic reset
2.2		High discharge temperature	Alarm & Compressor trips
2.3		High suction temperature	Alarm Provided
2.4		High condensation temperature	Alarm Provided
2.5		High Ambient temperature	
2.6		MPCB	Automatically disconnects the circuit in the event of overload or short circuits
3.0	Fan	MPCB	Automatically disconnects the circuit in the event of overload or short circuits
Make of electrical components			Schneider/ABB/Siemens

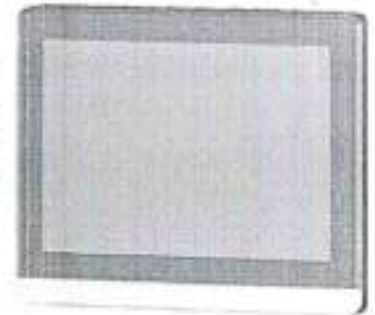


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**Technical
Specifications**

4.3 User Interface

The HMI controller actively monitors the health of the system. The simple and intuitive design helps the user understand air dryer status with minimal training. The controller provides real-time data including seven critical parameters to aid in taking informed decisions and maximize uptime.



Key benefits of SANPAR HMI are:

- **User Interface** – The touch screen display with working process and sensor locations help in monitoring health of the system.
- **Data logging** – Stores event history and helps in preventive maintenance planning. The user can also keep track of fluctuations and trends using graphs.
- **Remote monitoring** – Users are able to monitor the dryer from the comfort of their office using computers, also eliminating human error.

SR. NO.	DESCRIPTION	CAT-X1-283W
1	HMI	
1.1	Make	SANPAR
1.2	Display	7" WVGA touch screen
1.3	Protection class	IP 65
2	Programmable logic Controller With HMI	Digital
2.1	Pressure dew point	Indication with Control facility
2.2	Inlet Temperature	Indication facility
2.3	Outlet Temperature	Indication facility
2.4	Condensing Temperature	Indication with Control facility
2.5	Suction Temperature	Indication with Control facility
2.6	Discharge Temperature	Indication with Control facility
2.7	Water inlet Temperature	Indication facility
3	COMMUNICATION	
3.1	Ethernet port	Provided



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Technical
Specifications

4.2 Components

1	REFRIGERATION COMPRESSOR		
1.1	Type		Scroll
1.2	Make		Emerson/Danfoss
1.3	Quantity		1
1.4	Refrigerant		R 134a
1.5	Power supply	V/Ph/Hz	415±10% / 3 / 50
1.6	Power Consumption	kW	6
NOTE: Power consumption mentioned are the catalogue figures of the compressor manufacturer at rated conditions			
2	CONDENSER		
2.1	Type		Plate Type
2.2	MOC		SS304/316 Plate
3	EXPANSION VALVE / CAPILLARY		Capillary / TEV
3.1	EVAPORATOR		
3.2	Type		Plate Type
3.3	Air Inlet / Outlet Temperature	Degree C	50/ 48-50
3.4	MOC – Plate		Aluminum
4	DRYER CANOPY		
4.1	Type		Box Type Fully enclosed
4.2	Skid (Base frame)		'C' Channel / IS 808 L angles
4.3	Doors – MOC		IS 513 Sheet Metal
4.4	Electrical Panel		Separate Canopy placed inside the dryer
5.5	Finish		Pretreated and powder coated
5	DRAIN		
5.1	Type		Automatic drain
5.2	Electronically operated		Provided



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Technical
Specifications

4 TECHNICAL SPECIFICATIONS

4.1 Technical Specifications of Dryer

SR. NO.	DESCRIPTION	UNITS	CAT-X1-283W
1	Model		CAT-X1-283W
1.1	Type of Dryer		Refrigerated Non-cyclic-Direct expansion
1.2	Make		SANPAR
1.3	Series		XEROS
1.4	Capacity (FAD)	Cfm	1000
1.5	Working Pressure	bar(g)	7-8
1.6	Outlet Dew Point	Degree C	+3
1.7	Max. Inlet Air Temperature	Degree C	50
1.8	Press. Drop across system	bar	< 0.18
1.9	Refrigerant		R 134a
1.10	Power supply	V/Ph/Hz	415±10% /3/ 50
2	End connections		
2.1	Air Inlet/outlet connection	DN	100
2.2	Water Inlet/outlet connection	DN	25
3	Utility cooling water condition		
3.1	Cooling water temperature	Degree C	34
3.2	Pressure (operating / design)	Kg/cm ² g	3/5
3.3	Allowable pressure drop (Water side)	Kg/cm ²	0.6
3.4	Hardness	ppm	<30
3.5	Water flow	lpm	70

XEROS SERIES Refrigerated Air Dryer

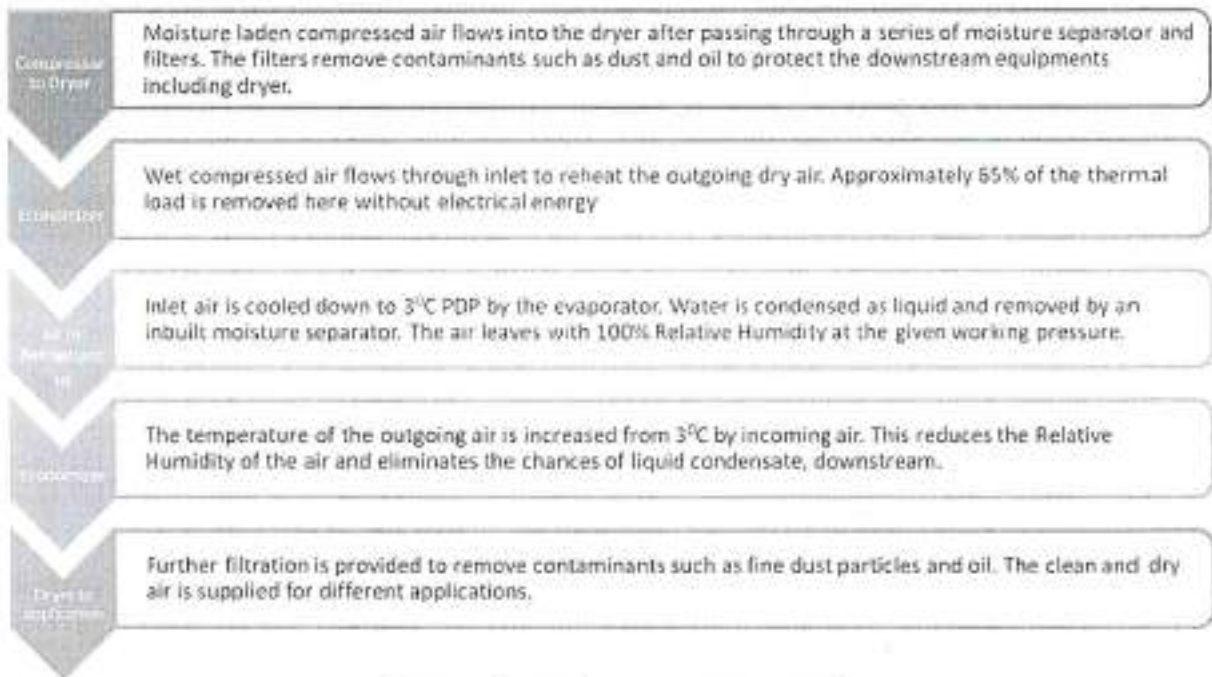
Xeros series dryers are designed to handle high air flow rates from 150 – 6000 cfm. Xeros is the result of consistent evolution in design and manufacturing process over a period of 27 years. They are available in air & water cooled variants to cater to a wide range of applications.

Process

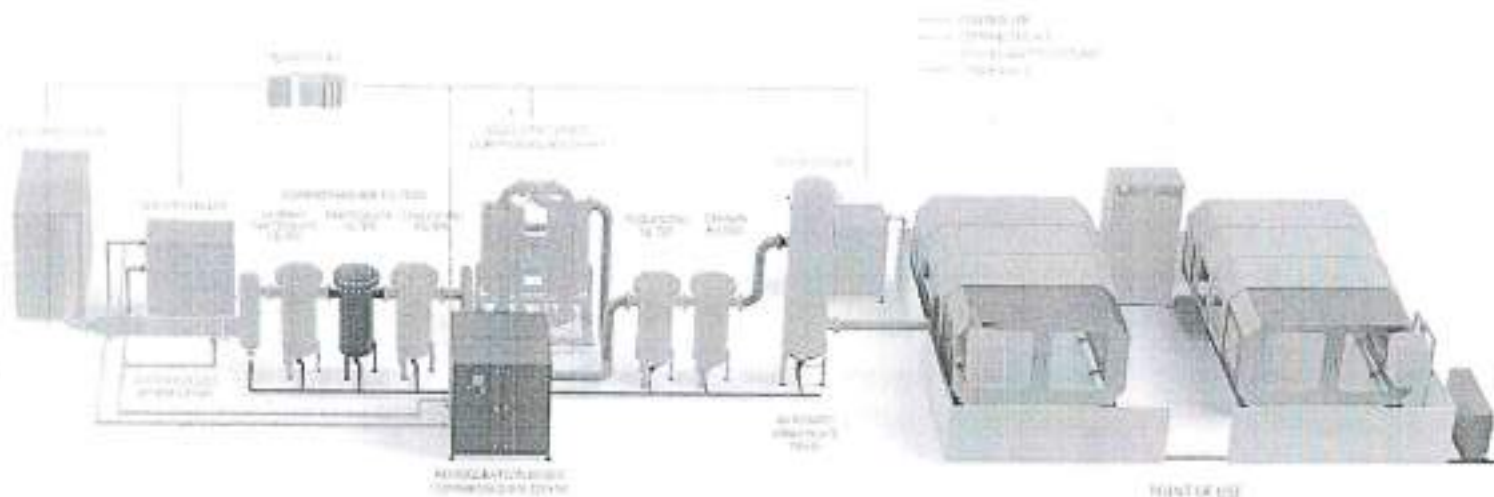


Equip

01. Compressor inlet
02. 5" (125mm) 100 micron moisture separator
03. Compressor outlet
04. Condensate drain
05. 4000 BTU/hr evaporator
06. Wet purge condenser
07. Dry purge condenser
08. Fan
09. Filter
10. Temperature sensor
11. Expansion valve



Scope of supply as per proposal





**Refrigerated Air Dryer
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**Revision
History**

2 REVISION HISTORY

Revision No.	Date	Description of Changes	Reason for Change

Vacuum Brazed Aluminium Heat Exchanger



more than Copper coil heat exchanger



Compact Design

Reduced footprint without compromising performance



- Economizer Air/Water Heat Exchanger
- 3-in-1 Refrigerant Heat Exchanger
- Moisture Separator
- Terminal Block

3 in 1 Completely Integrated System



Economizer

Able to sub cool air without external electrical energy source by greater than

Refrigeration Components

Components with high **EER** and **COP** are selected to minimize power consumption & maximize drying efficiency



Scroll Compressor

Fewer moving parts and less torque variation compared to reciprocating compressor, resulting in smooth and quiet operation. Hence, long life guaranteed.

Rust Prevention

Dryer inlet made of **SS 304** to prevent corrosion

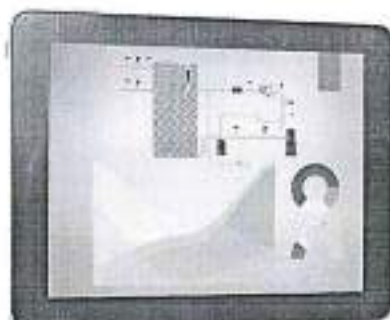
Eco-friendly Refrigerants

R134a and R407c with low Global Warming Potential (GWP) is used.



Beat the heat

Our dryer is designed for tropical conditions where average ambient temperature & humidity is higher than temperate zone.



Industry 4.0

- Monitor health of system
- Data Logging
- Remote Monitoring
- Preventive Maintenance
- Enhanced Uptime

Optional Accessories

- Pressure Sensor
- Dew Point Sensor
- Automated Control System



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**Project
Overview**

1 Project Overview

Offer No	SMPL/SAL/OF/28/28739
Offer Date	Dated: 06/02/2023
Customer Details	
Customer Address: M/s Jindal Aluminium Limited SP-2/333,RIICO Industrial Area, Bhiwadi Dist Alwar-301019	Consignee Address: M/s Jindal Aluminium Limited SP-2/333,RIICO Industrial Area, Bhiwadi Dist Alwar-301019
Contact Person	Mr Rajgopal
Email Id	purchase.bhiwadi@jindalaluminium.com
Mob	9611195368
Document Overview	Techno-commercial offer for the requirement of Refrigerated Air Dryer with Filters
Scope of Supply	
Sanpar's Scope	<ul style="list-style-type: none">• Refrigerated Air Dryer of capacity 1000cfm with Pre Filter, Final Filter & Carbon Filter
Customer's Scope	<ul style="list-style-type: none">• Outlet Piping: Piping to connect Refrigeration Dryer, Air receiver and end application.• Inlet Piping: Piping to connect Compressed Air Line to Air Receiver & Refrigeration Dryer.• Electrical Wiring: Electrical wire from switch board to dryer.



SANPAR MICROFILTERS PVT LTD
PLOT NO.5, 2ND CROSS, KSSIDC INDUSTRIAL ESTATE,
BOMMASANDRA II STAGE, BANGALORE-560099



REFRIGERATED AIR DRYER
TECHNO-COMMERCIAL PROPOSAL
Xeros series

CAT-X1-283W

PROPRIETARY NOTICE

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ORDER NO: 0023020353
 ORDER DATE: 02-08-2023
 ORDER NO: 0023020353
 ORDER DATE: 02-08-2023

INVOICE NO: 0122000808
 DATE: 01/08/2022
 MECHANICAL MAINTENANCE
 Last Party:

QUANTITY: 1
 DESCRIPTION: REGENERATED WATER COOLED AIR DRYER, VOLUME- 1000 CFM, WORKING PRESSURE- 0-10 KG/CM2, DRA
 POINT - 2 G TO 5 DEG C, WITH PRE FILTER, CARBON FILTER & POST FILTER
 Qty: 1.00 Unit: DCS

Item ID & Description	Unit	Qty	Cost	Rate	Net	Net Amt	Net Amt	Net Amt	Net Amt
949428.00		9.00	9.00		1120325.0	1120325.0	170891.0	0.0	949428.0
940856.00		18.00	18.00		1110031.0	1110031.0	169251.0	0.0	940856.0
18.00		18.00	18.00		64660.0	64660.0	11846.0	0.0	71600.0
428042.0		60000.0	9240.0	0.0	9240.0	9240.0	0.0	0.0	11800.0

Party Code & Name: A1223 AOBNE HYDRO CONTROLS, JAIPUR
 Party Code & Name: S.B. AIR ENGINEERS, ALWAR
 Party Code & Name: S.B. AIR ENGINEERS, ALWAR
 Party Code & Name: S.B. AIR ENGINEERS, ALWAR

Payment Terms: 7 DAYS AFTER RECEIPT OF MATERIAL
 Price Basis: Five On Road-OUR WORKS AT BHINDRI BY ROAD
 Other Condition: THE ABOVE PRICE IS CONSIDERING PRICE OF PRE FILTER @ 62000 X 1 NOS, POST FILTER @ 96936 X 1 NOS, CARBON FILTER @ 96936 X 1 NOS, 5 YEARS WARRANTY

30% ADVANCE ALONG WITH AMT VALID FOR 20 WEEKS FROM THE DATE OF ISSUANCE 60% WITH 10% GST AGAINST PI BEFORE DISPATCH & 10% AFTER COMPLETION SUBJECT TO SUBMISSION OF CORPORATE GUARANTEED VALID FOR ONE YEAR WITHIN 30 DAYS.

90% + GST AMT DELIVERY WITHIN 7 DAYS FROM THE DATE OF RECEIPT OF MATERIAL, 10% WITHIN 30 DAYS SUBJECT TO SUBMISSION OF PMS VALID FOR ONE YEAR FROM THE DATE OF COMPLETION OR WITHIN 30 DAYS OF RECEIPT OF COMPLETION.

Free On Road-OUR WORKS AT BHINDRI BY ROAD
 Free On Road-OUR WORKS AT BHINDRI BY ROAD
 THE ABOVE PRICE IS CONSIDERING PRICE OF PRE FILTER @ 62000 X 1 NOS, POST FILTER @ 96936 X 1 NOS, CARBON FILTER @ 96936 X 1 NOS, 5 YEARS WARRANTY.

Prepared By: [Signature]
 Verified By: [Signature]
 Approved By: [Signature]

Remarks: 0.70
 37,900/-

Item CD & Description	Qty	Rate	Disc	Net	Cost	WGT	ISST	Excise Tax	Freight	Others	Brand	TotalDmt Price	Gross Amt Rs Ps	CENVAT Amt Rs Ps	Net Of CST/VAT	Net Amt Rs Ps	Delivery Date
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USER NAME	APPROVER REMARKS
ABHISEK DABU	Please approve
RAJENDRA C SARDIA	
VAASUN KUMAR RUSTAGI	
HAARISHI	
SHANKARANAND MISHRA	
SHANKARANAND MISHRA	
ABHISEK DABU	

SUPPLIER NAME	TECHNICAL REMARK
S R AIR ENGINEERS	
AIRHEN ENGINEERS & SERVICES PRIVATE LIMITED	
INDUSTRIAL EQUIPMENT COMPANY	
ADVAR HYDRO CONTROLS	