

## COST COMPARISION OF VARIOUS TYPES OF AIR DRYERS (Eg. Calculation for 1000 Cfm Air dryer)

No.	Type of Air dryers	Heatless Type Dryer	Refrigeration Type	Blower reactivated	No-Loss Splitflow Dryer	Heat of Compression
1	Capacity	1000 Cfm	1000 Cfm	1000 Cfm	1000 Cfm	1000 Cfm
2	Pressure	7 Kg/Cm <sup>2</sup>	7 Kg/Cm <sup>2</sup>	7 Kg/Cm <sup>2</sup>	7 Kg/Cm <sup>2</sup>	7 Kg/Cm <sup>2</sup>
3	Inlet Temperature	45 deg C	45 deg C	45 deg C	45 deg C	180 Deg C
4	Type of Inlet Air Condition	Oil Flooded/Oilfree	Oil Flooded/Oilfree	Oil Flooded/Oilfree	Oil Flooded/Oilfree	Oil Free
5	Atmospheric Dewpoint Temperature	-40 deg C	-26 deg C	-40 deg C	-40 deg C	-40 deg C
6	Purge Loss	15.00%	Nil	Nil	Nil	Nil
7	Power consumed in the form of	Controller and Air loss	Refrigeration Compressor	Controller, Blower and Heater	Heater and Water	Controller and Water
8	Power Required in KW					
	a) Controller	0.2	0.2	0.2	0.2	0.2
	b) Refrigeration Comp	0	4.8	0	0	0
	c) Blower (Runs 7 Hrs 30 Min in 8+8 Hrs Cycle)	0	0	4.5	nil	nil
	d) Heater (Runs 4 Hrs 30 Min in 8+8 Hrs Cycle)	0	0	30	30	nil
	e) Power Loss (15% of 1000 cfm is 150 cfm, Power considered as 1 hp produces 4 cfm)	28	0	0	0	0
	f) Water Consumption/Pump Power	0	0	0	3	3
	Total Power consumption per day considering 24 Hrs	28.2	4.82	34.52	33.02	3.02
9	Power consumption Per day / Power Loss per day @ 24 Hrs KWH	672	116	828	792	72
10	Power cost per day considering Rs 7 per KWH	4707	810	5799	5547	507
11	Power cost per Year @ 365 Days	1718186	295562	2116766	2024786	185186
12	Maintanace Cost in % of Capital cost	10 to 15	10 to 15	10 to 15	10 to 15	10 to 15
13	Capital Cost Approximate for Basic Machine	Low	Low	High	High	High
14	Maintanance Skill Requirement	Nil	Skill Required	Skill Required	Skill Required	Skill Required

Cost Saving Per Year = Difference between operational cost for 2 selected Models

Payback Period in Months =  $(\text{Capital cost for selected machine} / \text{Costs saving per year}) \times 12$

Please Note that the Following while selecting the dryer

1. Dewpoint Requirement
2. Inlet Temperature and Pressure to the dryer
3. Compressor Type Lubricated or Non Lubricated
4. Oil Content required at end point for selecting the filters
5. Water Availability and Quality

