TECHNICAL BROCHURE

Dehumidifier - Serie DHP

Why I need a Dehumidifier?

Dehumidification, or removing moisture from the air, is one method to control the environment when blasting and painting. It helps prevent flash rusting and promotes the curing of coatings. Most large painting suppliers such as Jotun and International Paints etc. will not guarantee their coatings if they are not applied in a controlled environment, making dehumidifiers critical for most large coating facilities and areas.

Corrosion (Rusting) and Humidity:

A correct painting / coating procedure means the surface of the steel to be 3 degrees Celsius or higher than the dew point to prevent the moisture from condensing on the steel surface. Moisture condensing on an abrasive blasted steel surface will create rust and will create a big problem with paint primer sticking to the steel surface. Moisture condensing on a new painted surface will also affect the curing (hardening) of the coating.

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Controlling The Painting Conditions:

There are a few methods for controlling the conditions so that moisture does not condense on the steel surface. One is to heat the steel being painted so that the surface temperature stays at least 3 degrees Celsius above the dew point. This is O.K. for small objects where heaters could be used. But it is usually very expensive to do for large surfaces such as the inside of a blasting room, oil storage tank or inside of a ship tank. The second proven method is to use dehumidification systems. There is a third method, which is to heat the air within the area, however this is only around 50% efficient and also not practical to heat the area in some climates and for overall operator comfort.

The major purpose and benefits of the dehumidification systems is to reduce the amount of moisture in the air, lower the dew point temperature, prevent moisture from condensing on the steel, and reduce the rate of corrosion (rust) on the steel surface.

Uses and Benefits of Dehumidifier Systems:

Dehumidifier systems have many uses in the construction industry that also relate to painting and coating activities. Surface preparation by high pressure (Hydroblasting) or (Waterjetting) can require a waiting period of a day or two while the surface completely dries, especially when there are cracks or cavities present between the joined or welded steel components. Dehumidification after (Hydroblasting) or (Waterjetting) will remove this water and moisture more quickly and also prevent the flash rusting which is a factor when utilizing or blasting with water. The main benefit of dehumidification is the ability to control the working environment. This will save money for a contractor and result in a better coating application. Contractors benefit from dehumidification equipment by lowering their downtime. There is no need to wait when the temperature conditions are out of specification because the environment inside the blasting area is controlled. Production work and painting can begin first thing in the morning. It also eliminates the stopping of painting due to those rainy days. Using a dehumidifier system will control the flash rusting on a blast-cleaned steel surface for a week or two. This allows the

contractor to abrasive blast the entire steel surface (or large portions of the surface) continuously without stopping for clean-up and priming. Putting on the primer in one application prevents blasting particles from landing on the surface primed the previous day and allows the primer to be applied as one continuous coat.

Dry air is also essential when blasting with steel abrasives. Moisture can condense in the blast pot when the unit cools overnight, causing the steel abrasive to rust. Dehumidifiers ensures the steel abrasives are kept dry and is an essential component of the overall abrasive blasting equipment set-up.

Key Usage Industries:

- Shipbuilding and Ship Repair Yards
- Oil & Gas Fabrication
- Oil refinery for cleaning the abrasive from the large storage tanks after blasting
- Oil & Gas offshore maintenance
- Large Blasting and Painting Rooms
- Ship dry dock
- Large maintenance projects
- Bridge Blasting projects
- Projects requiring a fast blast & painting turnaround, power stations, refineries

DHP Series - Technical Specifications

Model	DHP 6000	DHP 9000	DHP 12000	DHP 18000
Deshumidifier Airflow	6000 CMH	9000 CMH	12000 CMH	18000 CMH
Air Pressure	200 mm.AQ	250 mm.AQ	300 mm.AQ	400 mm.AQ
Evaporator Capacity	150.5 Kw 129569 Kcal/hs	191.4 Kw 164655 Kcal/hs	207.0 Kw 178448 Kcal/hs	379.6 Kw 326456 Kcal/hs
Compressor Capacity	SRC-S-113 30Kw / 40 Hp	SRC-S-133 37Kw / 50 Hp	SRC-S-163 45Kw / 60 Hp	SRC-S-285 82Kw / 110 Hp
Condenser Motors	2 x 2.2 Kw	3 x 2.2 Kw	3 x 2.2 Kw	6 x 2.2 Kw
Blower Motor	5.5 Kw	11 Kw	15 Kw	30 Kw
Electric Heater	27 Kw	54 Kw	54 Kw	72 Kw
Power Comsumption	66.9 Kw	108.6 Kw	120.6 Kw	197.2 Kw
Discharge Air Connection	2 x Ø 280 mm	3 x Ø 280 mm	4 x Ø 280 mm	6 x Ø 280 mm
External Dimension	L: 3.08 m W: 2.2 m H: 2.22 m	L: 3.8 m W: 2.3 m H: 2.42 m	L: 3.8 m W: 2.3 m H: 2.52 m	L: 6.2 m W: 2.3 m H: 2.5 m
Overall Weight	3 ton.	3.5 ton.	4 ton	7.2 ton
Enclosure Structure	Fully Containerized			
Intake Air Temperature	10 ~38 ° C			
Discharge Air Condition	After Heating 25°C ± 3°C			
Dew Point	10° C			
Relative Humidity	≤ a 45%			
Air Filter	90 % efficiency			
Machine Noise	≤ 80 db(A)			
Control Panel	IP 55			

Note: we reserve the right to change the dimension & specs without prior notice.

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Major components & Material Type

- Electrical Motor – Based Local branded Motor – Optional CE approved available
- Compressor – Refcomp / Bitzer brand or of equivalent standard
- Solenoid Valves - Emerson (USA)
- Expansion Valve / High & Low Pressure controller - Danfoss (Denmark)
- Hand & Receiver Valve - Castel (Italy)
- Vibration Absorber - Packless (USA)
- Electrical Components - Telemecanique (France)
- Evaporator coil - Copper tube & Copper fins / Corrosion Resistant Stainless Steel Structure
- Condenser coil - Copper tube & Aluminium fins / Corrosion Resistant Stainless Steel Structure
- Cooling Chamber – Corrosion Resistant Stainless Steel Structure
- Heater Coil – Corrosion Resistant Stainless SteelCompresor - Refcomp / Bitzer o de nivel equivalente

Conclusion:

- Dehumidification lowers the moisture content in air to control corrosion of the abrasive blasted surface.
- Prevent moisture condensation on newly applied coatings.
- Proper dehumidification can keep a blast-cleaned surface from rusting for at least a week under most ambient conditions.
- Dehumidification can also be used for drying concrete prior to painting and is essential for keeping steel abrasive from rusting.

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Industrial Solutions

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