Dry All®

Full Range of HVAC&R Line Products

ALUMINIUM 3-IN-1 HEAT EXCHANGER

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Dry All 3-in-1 Heat Exchangers are specially designed Heat Exchangers for Air Dryer application. These Heat Exchangers are a combination of the following three:

1. Pre-Cooler
2. Evaporator
3. Separator

This 3-in-1 Heat Exchanger provides high thermal transfer performance in a compact size for your Air Dryer system.

Functioning of 3-in-1 Heat Exchanger

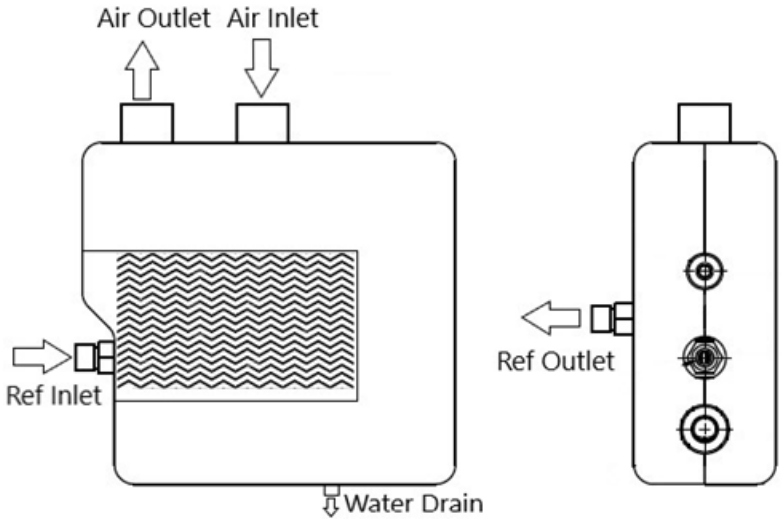
- In the first step Air-compressor compresses hot and moist air and sends it to the pre-cooler section of a 3-in-1 heat exchanger.
- In the next step the hot & moist air exchanges heat with treated cold air.
- In the third step this cooled & moist air enters the evaporator. Lowers down the temperature of cool and moist air and condensates out the water of the air by evaporation.
- After, the air moves to the separator, with centrifugal force and gravity, the condensate water can be separated from air. The condensed water will be drained from the water Outlet. Finally, the cool & dry air goes back to the pre-heater to be heated to the working temperature.

Role and Importance of each part of 3-in-1 Heat Exchanger

Pre-cooler:

Saves energy by exchanging heat from inlet and outlet air temperature.
Outlet air can be used directly. It is preheated to the working temperature.
Evaporator:
Condense out moisture from the air through our high-efficiency Heat Exchanger.
High Efficiency, low dew point, and low-pressure drop.

Separator:
Centrifugal force and Gravity separate moisture from the air.
Clogging-free, easy to maintain.



Sr.No	Model No	Processing Flow		Cooling Capacity kW	Air Pressure Drop (Bar)	Heat Exchanger Area (m^2)	
		Nm^3 / min	CFM			Air Side	Ref. Side
1	EHE-1N-G-Z	0.71	25	0.47	0.11	0.43	0.09
2	EHE-1.6N-G-Z	1.14	40	0.75	0.11	0.76	0.18
3	EHE-2.6N-G-Z	2.00	70	1.32	0.15	1.1	0.26
4	EHE-3.8N-G-Z	2.57	90	1.7	0.14	1.67	0.38
5	EHE-6.5N-G-Z	5.14	180	3.4	0.16	2.93	0.69
6	EHE-8.5N-G-Z	6.29	220	4.15	0.15	3.68	0.88
7	EHE-11.5N-G-Z	8.57	300	5.66	0.14	5.44	1.23
8	EHE-13.5N-G-Z	10.00	350	6.6	0.16	6.48	1.48
9	EHE-17N-G	12.86	450	8.2	0.16	12.4	1.7
10	EHE-20N-G	15.71	550	10.02	0.17	14.4	1.99
11	EHE-25N-G	18.57	650	11.86	0.15	18.4	2.55
12	EHE-35N-KZ	22.86	800	14.58	0.12	36.88	4.09
13	EHE-40N-KZ	28.57	1000	18.21	0.14	41.08	4.57
14	EHE-50N-KZ	34.29	1200	21.89	0.13	51.58	5.77

Models Above are rated for Standard rating condition:

a. Inlet Air Temperature= 45°C
b. Inlet Air Pressure=7 Bar
c. Dew Point Temperature=3°C
d. Refrigerant=R134a

Correction Factor For Flow Rate								
Ambient Temp °C	30	35	40	45	50	55		
Factor (A)	1.20	1.05	1.00	0.91	0.79	0.60		
Inlet Temp°C	30	35	40	45	50	55		
Factor (B)	1.48	1.36	1.18	1	0.84	0.7		
Dew Point Temp°C	1	2	3	5	7	10		
Factor (C)	0.80	0.90	1.00	1.15	1.25	1.50		
Working Pressure Barg	1	3	5	7	9	11	13	15
Factor (D)	0.50	0.74	1.00	1.00	1.10	1.20	1.30	1.70

Selection of Model:

1. Please select Air Dryer model with higher value of Processing Flow (CFM), if the calculated flow rate is between the two values of Processing Flow (CFM).

Ex. If Processing Flow is given as 30 CFM, please choose Air Dryer Model - EHE-1.6N-G-Z.

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		Nm^3 / min	CFM			Air Side	Ref. Side
1	EHE-1N-G-Z	0.71	25	0.47	0.11	0.43	0.09
2	EHE-1.6N-G-Z	1.14	40	0.75	0.11	0.76	0.18

Technical Specification:

Max Working Pressure

A. Air Side
   a. 16 Bar (EHE-1N to EHE-13.5N）
   b. 13 Bar (EHE-17N to EHE-50N)

B. Refrigerant Side: 30 Bar

Max Working Temperature

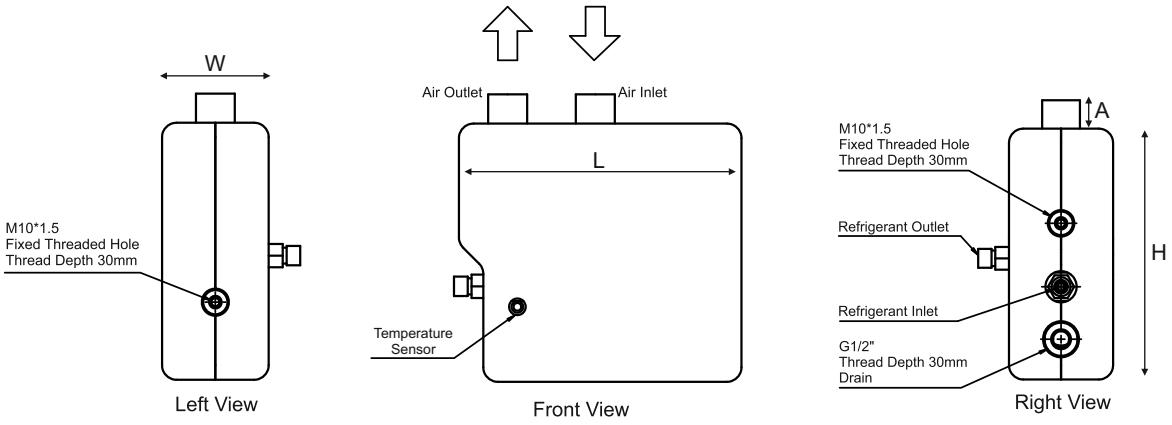
A. Air Side: 0°C to 65°C
B. Refrigerant Side: -10°C to 65°C

Conditions required for Air Dryer Selection

Air pressure in Bar
Air inlet temperature in °C
Dew point temperature in °C
Flow rate of air in CFM

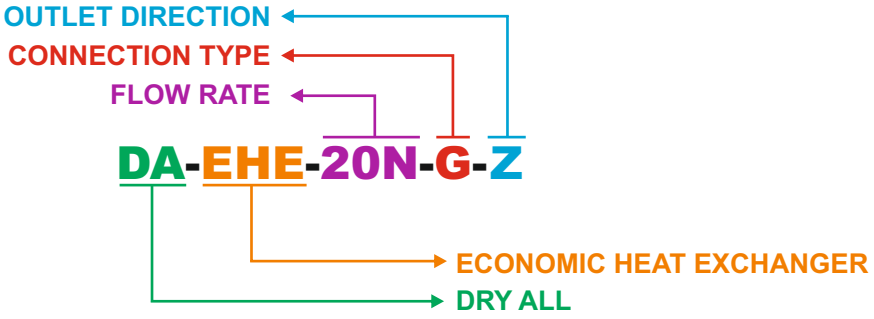
Some Important Instruction

- Liquid Line Filter Drier is a must to be before 3-in-1 in Heat Exchanger.
- The Dew Point Range should be between 3°C to 10°C.
- Air Inlet Temperature Range should be between 35°C to 50°C
- Dust Filter should be installed before Air Inlet of the Evaporator.



Sr.No	Model No.	Length (mm)	Width (mm)	Height (mm)	Conn. Height (mm)	Refrigerant Connection		Air Side Connection	Water Drain Size	Weight (Kgs)
		L	W	H	A	In	Out			
1	DA-EHE-1N-G-Z	290	110	265	30	3/4"-16UNF	3/4"-16UNF	G3/4"	G1/2"	3.5
2	DA-EHE-1.6N-G-Z	290	110	265	30	3/4"-16UNF	3/4"-12UNF	G1"	G1/2"	4.5
3	DA-EHE-2.6N-G-Z	290	110	265	30	3/4"-16UNF	3/4"-12UNF	G1"	G1/2"	5.3
4	DA-EHE-3.8N-G-Z	390	183	290	30	3/4"-16UNF	1-1/4"-12UNF	G1-1/2"	G1/2"	7.5
5	DA-EHE-6.5N-G-Z	390	183	290	30	3/4"-16UNF	1-1/4"-12UNF	G1-1/2"	G1/2"	10.6
6	DA-EHE-8.5N-G-Z	390	183	290	30	3/4"-16UNF	1-1/4"-12UNF	G1-1/2"	G1/2"	11.5
7	DA-EHE-11.5N-G-Z	470	219	330	30	3/4"-16UNF	1-1/4"-12UNF	G2"	G1/2"	17.5
8	DA-EHE-13.5N-G-Z	470	219	330	30	3/4"-16UNF	1-1/4"-12UNF	G2"	G1/2"	19.4
9	DA-EHE-17N-G-Z	606	300	443	30	3/4"-16UNF*	1-3/4"-16UNF*	G2-1/2"	G1/2"	28
10	DA-EHE-20N-G-Z	606	300	443	30	3/4"-16UNF*	1-3/4"-16UNF*	G2-1/2"	G1/2"	31
11	DA-EHE-25N-G-Z	606	300	443	30	3/4"-16UNF*	1-3/4"-16UNF*	G3"	G1/2"	38
12	DA-EHE-35N-G-Z	740	300	856	60	1-3/4"-16UNF	1-3/4"-16UNF	OD Ø108mm	G1/2"	60
13	DA-EHE-40N-G-Z	740	300	856	60	1-3/4"-16UNF	1-3/4"-16UNF	OD Ø108mm	G1/2"	66
14	DA-EHE-50N-G-Z	740	300	856	60	1-3/4"-16UNF	1-3/4"-16UNF	OD Ø108mm	G1/2"	78

Additional Temperature Sensor and Mounting ports are provided as per models



Available Connection on Air Side

Model No	
EHE 1N-25N	EHE 35-50N
G/RC/NPT/FL-Flange	GC- GROOVED COUPLING/FL-Flange

The Benefits of using Dry All 3-in-1 Heat Exchanger

Multi-functional Compact Unit: Simplified design consolidates a pre-cooler, evaporator, and separator in a single high-integrity heat exchanger.

Saves Energy: Users reduce system operating costs as compressors work less because heat transfer performance is 3-5 times higher compared to traditional shell and tube type heat exchangers while also maintaining extremely low-pressure drop (less than 0.2 bar).

Saves time: 3-in-1 (air-to-air heat exchanger, refrigerant evaporator for air and air-water separator) design is compact and easier for the user to install compared to traditional heat exchangers used in air dryers.

Durable: The combination of high-quality corrosion-resistant aluminium body in junction with superior expertise in brazing technology makes for an extremely durable and reliable working unit.

Environmentally Friendly: Its reduced size and high efficiency require less refrigerant to operate when compared to traditional Air Dryer.

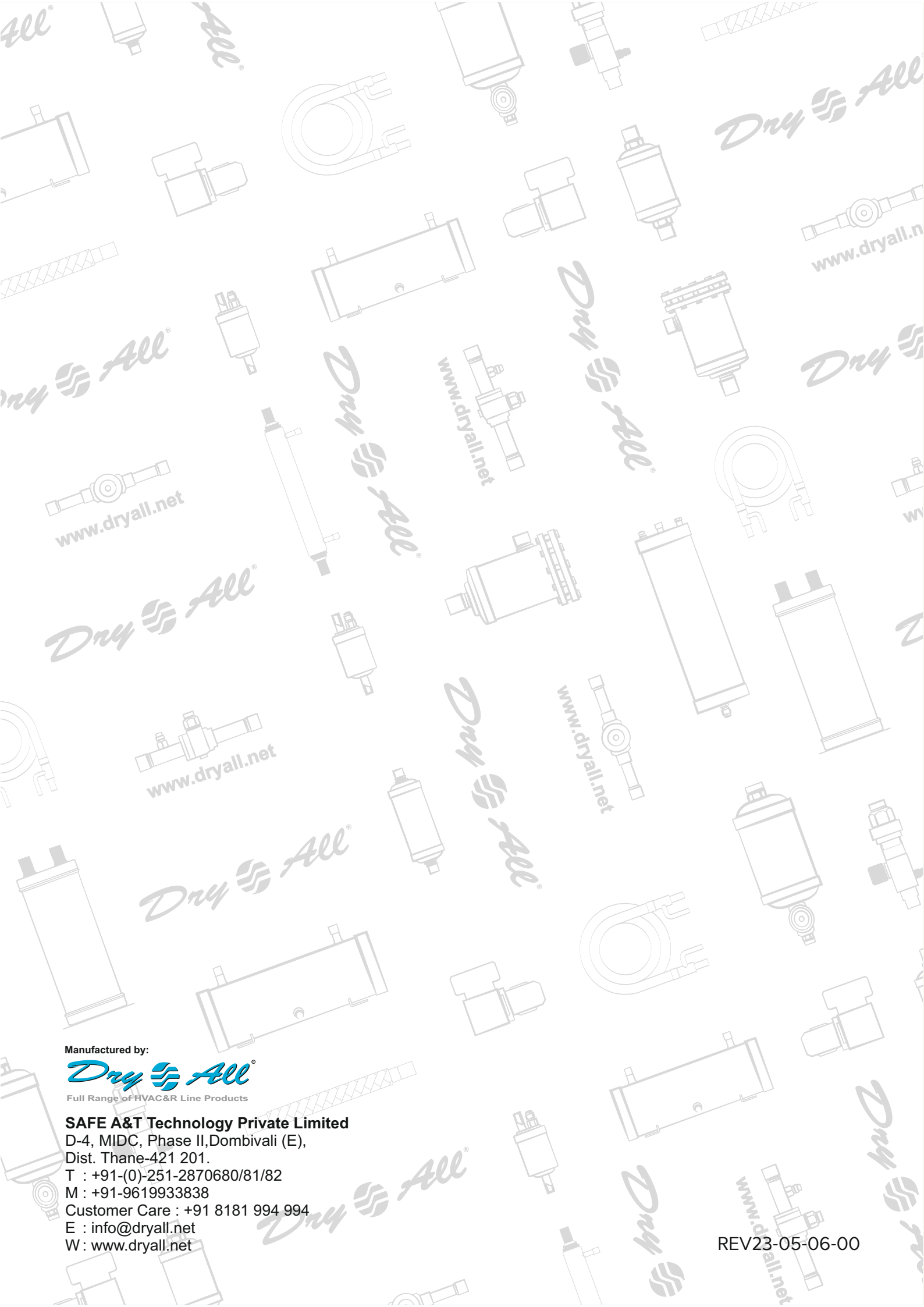
Flexible: Product specifications can be made according to different needs, helping users improve heat transfer efficiency and functioning within their system.

Application of Compressed Air

- Compressed air energy storage
- Air braking systems
- Refrigeration Unit using a vortex tube
- Air start systems in engines
- In operation and control of valves and instruments
- Spray painting
- Dental and medical services
- Pneumatic hammers and drills
- Pneumatic nail gun
- Sand-blasting
- Air blow-guns

Benefits of using Dry Compressed Air

- Low maintenance costs
- Can handle high loads over long periods
- Easy to store and transport



Manufactured by:

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Full Range of HVAC&R Line Products

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