

## SEP Series – Gas Dryer With Integral Separator

### All in one: Dryer, Separator, Recuperator

Designed as a critical component in Refrigerated Air Dryers and Gas Drying equipment, GEA PHE Systems SEP Series sets the standards for performance, versatility and small size. We have taken three of the essential components of a gas drying system - Dryer, Separator and Recuperator - and combined them into one brazed product. Based on years of heat exchanger experience, and using field proven designs of GEA PHE Systems' advanced industrial heat transfer plates, the SEP Series is a work horse for Air Dryers and special gas drying systems up to 2,000 sCFM (3400 Nm<sup>3</sup>/hr).



#### Features

##### Constant Outlet Gas Dew Point

Unlike any drier/separator of its kind, the outlet dew point remains nearly constant, from full load to part load.

##### Standard & Custom Models

Plate counts can be adjusted for the following:

- Variable size Dryer section, depending upon dew point and pressure drop targets
- Variable size Recuperator section, depending upon gas outlet temperature & pressure drop targets.

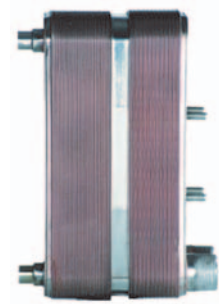
##### Flexible Cooled Dryer Section

Dedicated technical solutions and versions are available for DX Refrigeration or Liquid Cooled Dryer Section

##### Refrigeration Oil Management

For DX Refrigeration versions, using an exclusive multi-pass method, refrigerant velocities assure oil return, at full and part load, for two speed and variable speed compressors.

# SEP Series – Brazen Plate Heat Exchangers Technology

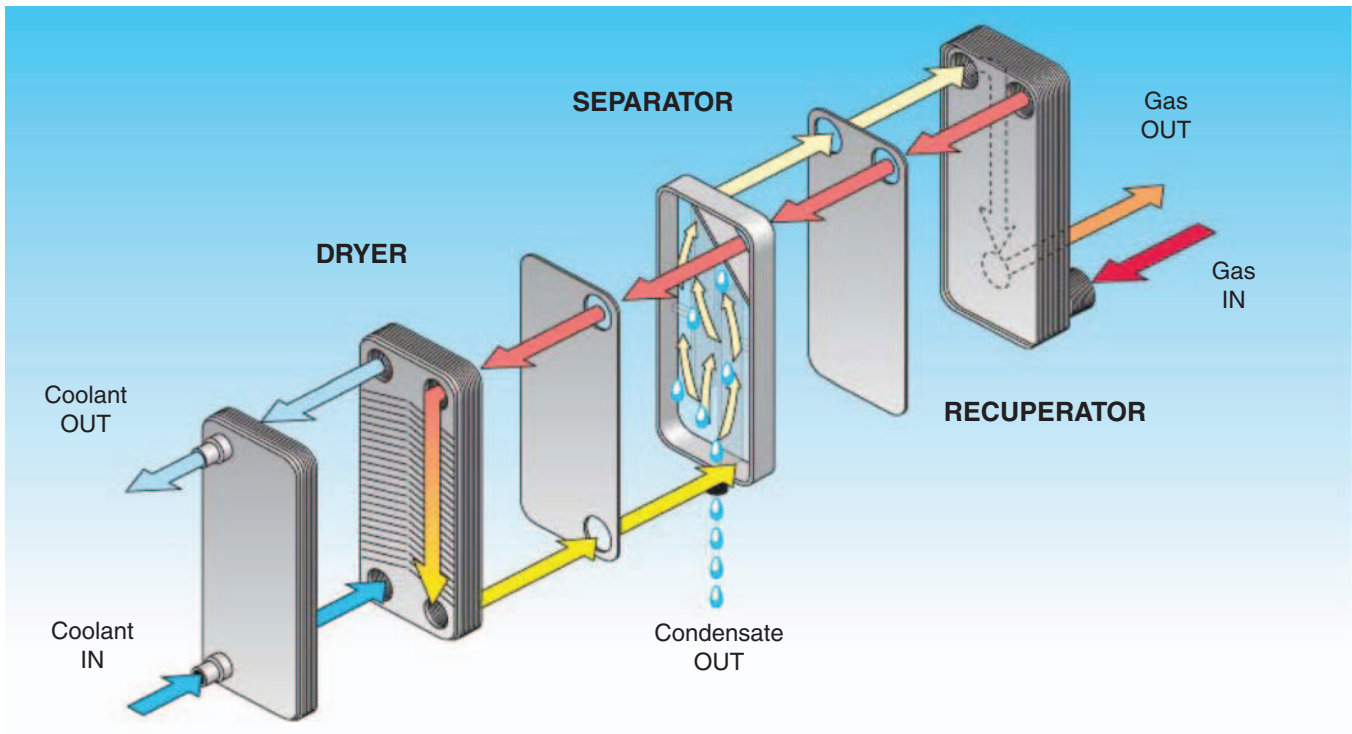


Warm gas enters the Recuperator section and exchanges heat with the cooler leaving gas. Entering gas is pre-cooled, prior to entering the dehydration dryer section to reduce the mechanical cooling load.

The gas then proceeds to the Dryer section and is cooled to design Dew Point using either mechanical refrigeration or liquid.

The gas then proceeds through a specially designed moisture Separator section, where condensate drops out into the bottom of the separator. Moisture and Condensate is removed from the gas.

The gas then proceeds back through the Recuperator section where it is heated up by the incoming warm gas. Leaving Gas is Heated above the Dew Point to prevent condensation on external piping.



## Options

For customers willing to use their own external moisture separator, GEA PHE Systems also provides the AP Series, similar to the SEP Series but without the integral separator. The Dryer section of the AP Series is equipped with one additional connection in order to extract the gas at design Dew Point to the external separator. The Recuperator section is also equipped with an additional connection to re-inject the dried gas to be heated up.

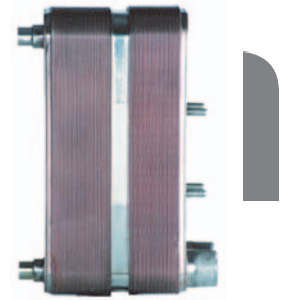
**Both SEP Series and AP Series are available with:**

- Mounting Stud bolts, standard
- Various fitting sizes & types such as sweat/solder, pipe thread, Victaulic and others
- Optional Insulation Kit
- Optional Mounting Bracket



# SEP Series – Brazed Plate Heat Exchangers

## Gas Dryer With Integral Separator



Extremely reliable and field proven, GEA PHE Systems' SEP Series are very cost efficient gas dryers for all industrial applications. Supplied with customized connections of your chosen type and size. Typically, refrigerant or coolant connections on front, gas connections on back. Equipped with 1/2" condensate drain at the bottom of the separator, stud bolts for easy mounting and optional mount brackets. Copper brazed 316L Stainless steel plates. SEP Series models are rated up to 450 psig at 350°F (31 bar at 176°C) refrigeration side.

All SEP Series models are UL listed and have optional ASME, Canadian CRN and European PED (CE) code approvals.

### Quick Selection Guide (up to 2000 sCFM)

AIR SIDE				CAPACITY		SELECTION		TECHNICAL DATA					
Flow Rate		Pressure Drop		BTU/hr	kW	SEP Series	Size	Volume		Net Weight		Depth	
sCFM	Nm <sup>3</sup> /hr	PSI	kPa					gal	liter	lbs	kg	in	mm
10	17	1.3	9	411	0.1	SEP3x8-8/6		0.06	0.2	6.2	2.8	1.7	43
20	34	2.3	16	821	0.2	SEP3x8-12/8		0.09	0.3	7.0	3.2	2.3	58
25	42	2.2	15	1,026	0.3	SEP3x8-14/10		0.11	0.4	7.6	3.4	2.6	66
45	76	2.8	19	1,847	0.5	SEP3x8-20/16		0.15	0.6	9.2	4.2	3.7	94
55	93	2.8	19	2,257	0.7	SEP3x8-24/20		0.18	0.7	10.4	4.7	4.4	112
75	127	2.8	19	3,078	0.9	SEP5x12-14H/12L-2		0.11	0.4	16.3	7.4	3.3	84
100	170	3.0	21	4,104	1.2	SEP5x12-20H/14L-2		0.15	0.6	18.9	8.6	4.1	104
125	212	2.9	20	5,129	1.5	SEP5x12-24H/20L-3.5		0.180	0.7	25.3	11.5	5.0	127
150	255	2.9	20	6,155	1.8	SEP5x12-30H/24L-3.5		0.23	0.9	28.5	12.9	7.9	201
200	340	3.0	21	8,207	2.4	SEP5x12-40H/36L-3.5		0.31	1.2	35.5	16.1	8.0	203
250	425	3.0	21	10,258	3.0	SEP5x12-56H/50L-3.5		0.43	1.6	45.1	20.5	10.8	274
300	510	3.0	21	12,310	3.6	SEP10x20-22L/22L-4		0.17	0.6	86.5	39.2	4.1	104
400	680	3.0	21	16,413	4.8	SEP10x20-30L/30L-4		0.23	0.9	102.8	46.6	5.0	127
500	850	2.8	19	20,516	6.0	SEP10x20-40L/40L-6		0.31	1.2	129.6	58.8	6.5	165
625	1062	3.0	21	25,644	7.5	SEP10x20-50L/52L-6		0.38	1.5	152.0	69.0	10.4	264
800	1359	2.8	19	32,825	9.6	SEP760Lx80/30-6		0.61	2.3	174.8	79.3	15.4	391
1000	1699	2.6	18	41,031	12.0	SEP760Lx100/40-6		0.77	2.9	209.0	94.8	20.0	508
1200	2039	2.7	19	49,236	14.4	SEP760Lx120/50-8		0.92	3.5	270.8	122.8	24.2	615
1400	2379	3.5	24	57,442	16.8	SEP760Lx140/50-8		1.07	4.1	293.6	133.2	27.0	686
1600	2719	3.8	26	65,648	19.2	SEP760Lx110/60-10		0.84	3.2	276.8	125.6	24.2	615
1800	3058	4.0	28	73,854	21.6	SEP760Lx120/70-10		0.92	3.5	299.6	135.9	27.0	686
2000	3398	4.8	33	82,060	24.0	SEP760Lx130/70-10		1.00	3.8	311.0	141.1	28.4	721

SEP Series	OUTLINE DIMENSIONS				CENTERLINE DIMENSIONS				STANDARD CONNECTIONS		
	Size	Width		Height		Width		Height		Ref. Inlet	Ref. Outlet
	in	mm	in	mm	in	mm	in	mm			
SEP3x8	3.3	85	7.8	199	1.5	38	6	152.4	1/2" SWEAT	1/2" SWEAT	3/4" MNPT
SEP5x12	4.9	124	12.1	308	2.7	68.9	9.9	251.5	5/8" SWEAT	7/8" SWEAT	1-1/2" MNPT
SEP10x20	9.8	148	20.3	515	6.5	165	17	432	5/8" SWEAT	7/8" SWEAT	2" MNPT
SEP760L	10.2	259	20.5	521	5.4	137	16.3	414	5/8" SWEAT	1-1/8" SWEAT	3" MNPT

Note: Volume is for refrigerant side

### Operating conditions

#### Refrigeration Versions:

Designed for R22, R407C, R134a  
Special models for R410A

#### Liquid Cooled Versions:

Chilled water, Glycol and other liquids

#### Dew Point Range:

32°F to +60°F (0°C to 16°C) for typical Air Dryers  
32°F to 300°F (0°C to 149°C) typical designs for special gases

#### Pressure Ratings:

##### Standard model:

450 psig at 350°F (31 bar at 176°C) refrigerant side  
150 psig at 350°F (10 bar at 176°C) gas side

##### Optional rating:

650 psig at 350°F (45 bar at 176°C) refrigerant side  
150 psig at 350°F (10 bar at 176°C) gas side

# GEA PHE Systems – Industrial Brazed Plate Heat Exchangers

## Other Product Series

### MPN Series – Multipurpose Industrial Heat Exchangers

MPN Series is designed specifically for multi-purpose Steam, Process and Swimming Pool applications, where chlorine, salt, biological elements, low acid concentrations or chemical treatments are present. The MPN Series is rugged, yet very compact, representing the latest technology in heavy duty plate heat exchangers. The Nickel-Chrome brazed, high Molybdenum grade stainless steel plates offer significant improvements in reliability over traditional stainless steel materials with high efficiency heat transfer for applications up to 240 gpm per unit.

All MPN Series models have male pipe thread connections and mounting stud bolts. Other connections are available upon request. MPN Series models are rated up to 300 psig at 350°F (21 bar at 176°C).



### MCN Series – Industrial Refrigeration Condensers

Designed for brackish water, chlorinated and swimming pool water or fluids with corrosion potential or micro-biological elements, MCN models are compact work horses for Condenser applications up to 80 tons. All models are fabricated from Nickel-Chrome brazed high Molybdenum grade stainless steel with stainless steel sweat connections on the refrigerant side (front) and female pipe thread connections on the fluid side (rear). A zinc anode and anode fitting are included. MCN Series models are rated up to 450 psig at 350°F (31 bar at 176°C).



### OC Series – Industrial Oil Coolers

Designed as a critical component in Power and Hydraulic systems, the OC Series is extremely reliable and field proven. GEA PHE Systems OC Series are very cost efficient oil coolers for all industrial applications. Supplied with customized oil connections of your chosen type and size. Equipped with 1/2" oil drain on front, stud bolts for easy mounting and optional floor mount brackets. Copper brazed 316L Stainless steel plates. OC Series models are rated up to 450 psig at 350°F (31 bar at 176°C).



### DW Series – Double Wall Vented

GEA PHE Systems DW Series represents the most advanced technology to get the job done where local and national plumbing codes and health codes require, or where extra safety to prevent cross-contamination of fluids is needed, Double Wall Vented is the perfect choice. The DW Series is a hybrid plate heat exchanger that has significant advantages over shell&tube and other methods of double wall vented designs, where size, weight, performance and cost are important issues. Double Separation in Food Process glycol to water, make-up water, special fluids and gases are all typical industrial process applications for heating and cooling with the DW Series. MPN Series models are rated up to 300 psig at 350°F (21 bar at 176°C).

Contact details at:

[www.geaphena.com](http://www.geaphena.com)

The specifications contained in this printing unit are intended only to serve the nonbinding description of our products and services and are not subject to guarantee. Binding specifications, especially pertaining to performance data and suitability for specific operating purposes, are dependent upon the individual circumstances at the operation location and can, therefore, only be made in terms of precise requests.

Your contact:



GEA Heat Exchangers

GEA PHE Systems North America, Inc  
100 GEA Drive  
York, PA 17406  
Toll Free: 1-800-774-0474  
Phone: 1-717-268-6200  
Fax: 1-717-268-6163  
[www.gea-phe.com/usa](http://www.gea-phe.com/usa)  
E-mail: [info.geaphena@geagroup.com](mailto:info.geaphena@geagroup.com)