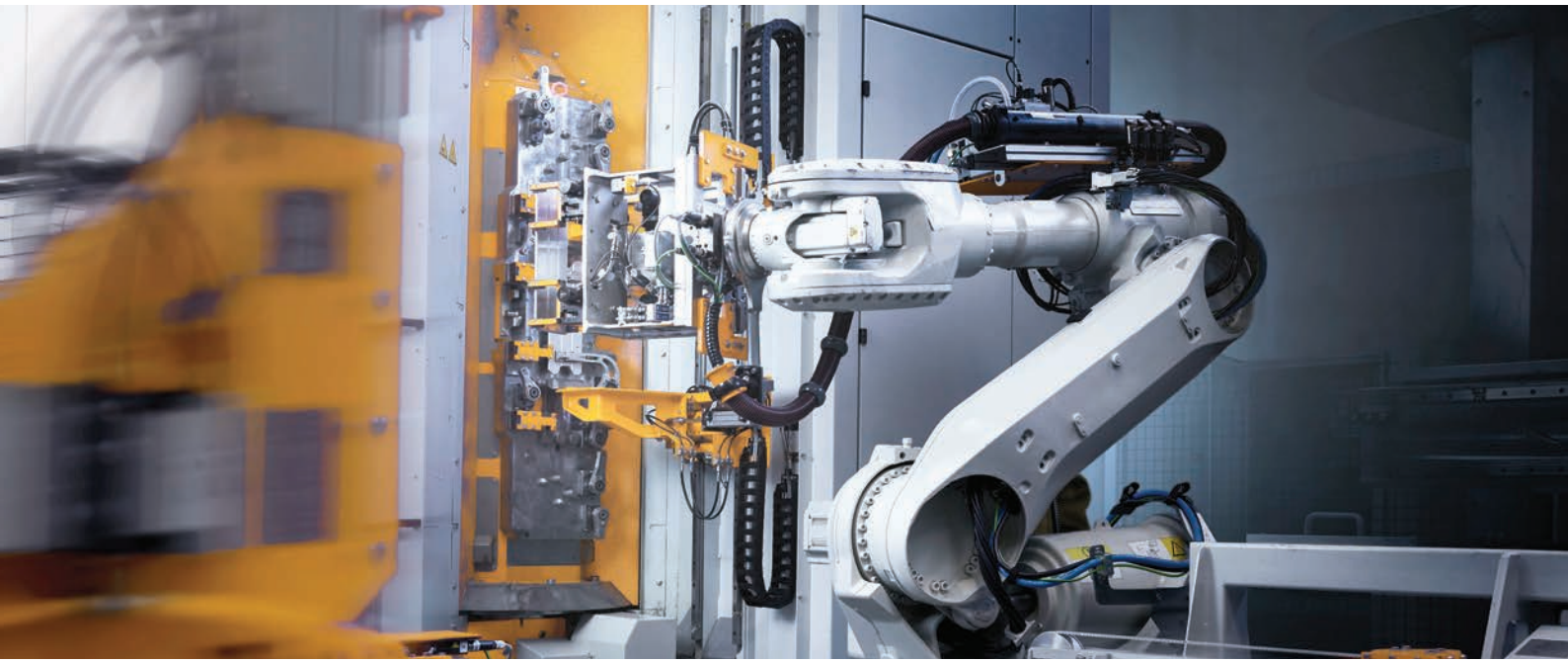
GSA Air Dryers

HYD-N series
Refrigerated air dryers

Global Standard Air & Gas



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Why Refrigerated Air Dryer ?

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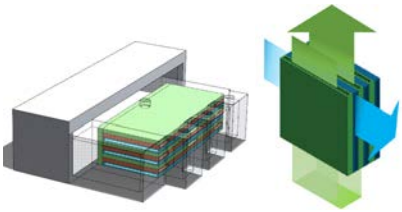
Compressed air dryer is as important as air compressors in order to keep your air system running at peak efficiency. All compressed air systems suffer from the common problems of dirt, oil and water contamination entering the system. These are intensified when air is compressed.
Fine particles and oil shall be removed by compressed air filters while condensate needs to be removed properly by a refrigerated/desiccant air dryer. Failure to remove these contaminents will result in serious problems within the compressed air system, such as pipe corrosion and damaged pneumatic equipment. So the moisture shall be removed effectively from inside air lines resulting in reducing maintenance costs associated with air line contamination.

In general, a refrigerated air dryer offers 2-10°C of pressure dew point (-22 thru -17°C in atmospheric pressure dew point). This machine is installed in processes where low-dew point is unnecessary such as semiconductor, food & drink and pharmaceutical industry. With great dehumidifying effects, it will keep your air system working at peak efficiently.

Internal Pipe Corrosion

External Pipe Sweating

Heat exchanger of refrigerated air dryer



GSA uses a high-efficiency aluminum heat exchanger. The heat transfer area of the aluminum heat exchanger is greater than that of other types of heat exchangers. Therefore, it can offer great dehumidifying performances with high efficiency and stable dew points

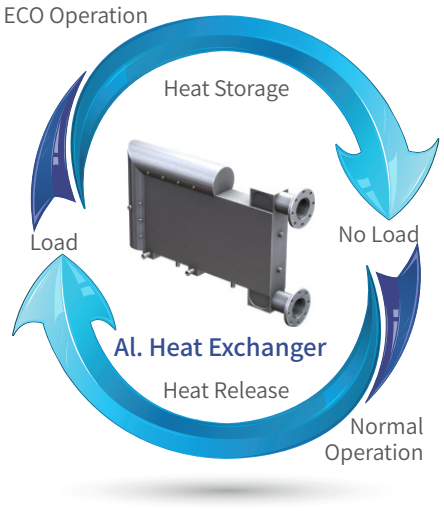
GSA's aluminum heat exchanger is divided by three different sections: the first is for air-air heat exchanging, the second is for air-refrigerant heat exchanging and the third is the separator with oversized demister for removing moisture from the compressed air cooled in the second heat exchanger.

The first section of the heat exchanger reduces electrical energy with decreasing load of the refrigerant compressor by exchanging the heat of the hot inlet air and cold compressed air cooled down to the dew point in the second section of the heat exchanger. The cold compressed air cooled down to the dew point meets hot inlet air from the air compressor, and increases the outlet temperature of the compressed air. As a result, it can prevent pipes from sweating. The separator with oversized demister enhances dehumidifying performances by removing condensate efficiently from the humid compressed air cooled down in the second section of the heat exchanger.

Energy-saving, Refrigerated Air Dryer

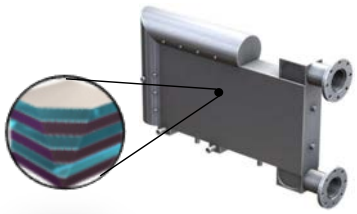
GSA's energy-saving refrigerated air dryer is a cycling system designed to save energy in a simple and efficient fashion. It is relatively simple, compact and highly reliable compared to products which use variable-speed drive (VSD) designed to control the RPM of the refrigerant compressor and a brushless DC (BLDC) motor or those with phase change materials (PCM) or thermal mass.

The aluminum heat exchanger of the energy-saving refrigerated air dryer plays a role of thermal mass which has great heat transfer performances. Since the product is made with a single material, it has no thermal resistance. Therefore, cooling energy stored in the heat exchanger can be utilized efficiently. It generates the greatest efficiency at the lowest costs when load is low or the compressed air use pattern is intermittent with a long length of time by maximizing the use of cooling energy accumulated in the heat exchanger.



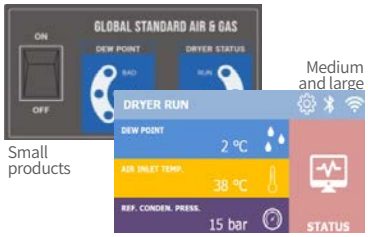
Highly Reliable Refrigerated Air Dryer

Diverse Innovative Technologies



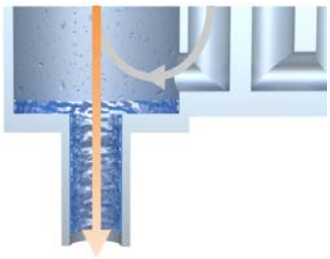
High-efficiency Aluminum Heat Exchanger

With a high-efficiency aluminum heat exchanger, GSA refrigerated air dryer offer larger heat-transfer area and performance guarantees of stable dew point than any other brands adopting other types of heat exchangers such as shell & tube and plate ones. Made with the same material, GSA air dryer has no thermal resistance and is free from heat exchanger freeze-up or corrosion.



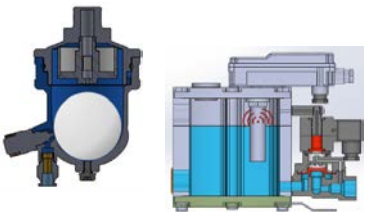
Smart and Simple Controller

The simple and functional controller helps users read the exact dew points. You can also monitor the dew point and status of your dryer by your mobile phone.
You can check various operation information through the 4.3” color TFT LCD touch-type controller, and you can easily and conveniently manage the dryer anytime, anywhere through smart control and communication functions. (Options or some products)



Efficient Condensate Separation

A larger volume of the demister-installed separator can separate a large volume of condensate efficiently. Therefore, GSA refrigerated air dyers deliver stable performances and dew points even under diverse load and pressure.

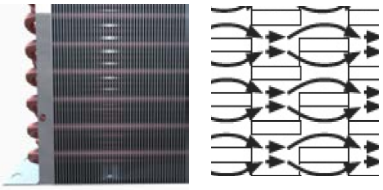


Highly Reliable Drain without Compressed Air Loss

The efficiency of compressed air equipment has been improved by applying a ball type or level sensor type auto drain trap that is free from compressed air loss. The ball-type auto drain has excellent operating performance. The drain malfunction or failure rate due to oil or particles contained in compressed air is low. Maintenance is very convenient.

Minimization of Compressed Air Loss with Low Differential Pressure

We minimized differential pressure with a large heat-transfer area and sufficient cross section for the passage of compressed air. We enhanced heat-exchange efficiency and reduced differential pressure by minimizing resistance. As a result, the GSA dryer performs the enhanced efficiency of the compressed air system with lower operating costs.



Efficiency Maximization with High-efficiency Condenser

For stable performances even under unfavorable circumstances in tropics, we adopted grooved copper tubes and corrugated split fins. In addition, we use a condenser performing high heat transfer coefficient under great fin tightness with complete and uniformtube expansion. GSA refrigerated compressed air dryers are performance-proven under diverse area including tropics.

Technical Specification

Design condition

- Inlet Pressure : 7barg
- Inlet Temperature : 38°C
- Pressure Dew Point (PDP) : 2 ~ 10°C
- Ambient (Cooling water) Temperature : 32°C
- Design Pressure : 14barg

References

- The numbers in parentheses denote the specifications of water-cooled products.
- The 800N or greater air-cooled products are basically a condenser-separated type.
- All models use either R-134a or R-22 refrigerant. Other models adopting different types of refrigerants are available.
- The flowrate is based on 60Hz. The other electrical specifications are available.
- Custom-made are the units of which operating pressure is 15 barg or higher.
- Large models bigger than those stated in the specifications are custom-made. The company has the right to make any changes for continuous product improvement.

Model		Connection	Air Compressor applied	Flow rate	Power Consumption	Power Supply	Dimensions (mm)			Weight
		A	HP	㎥/min	kW	V / Ph / Hz	A	B	C	kg
HYD	5N	PT 15A	5	0.7	0.3	220 / 1 / 50, 60	355	420	575	30
	7N	PT 15A	7	1	0.31		355	420	575	30
	10N	PT 20A	10	1.4	0.32		355	420	575	30
	15N	PT 25A	15	1.9	0.39		428	508	709	45
	20N	PT 25A	20	2.7	0.51		428	508	709	45
	30N	PT 25A	30	3.9	0.9		358	658	864	66
	50N	PT 40A	50	6.7	1.4		408	708	952	89
	75N	PT 50A	75	10.5	2.1		458	798	1045	120
	100N	PT 50A	100	14.2	2.3	380 / 3 / 50, 60 440 / 3 / 50, 60	458	858	1145	126
	150(W)N	PT 65A	150	21(22.5)	2.9(2.5)		565	1005	1330	172(170)
	200(W)N	FLG. 80A	200	30(32.1)	4.18(3.78)		550	1200	1447	240(230)
	250(W)N	FLG. 100A	250	39(41.7)	4.4(4)		700	1200	1580	260(250)
	300(W)N	FLG. 100A	300	47(50.3)	4.6(4.2)		700	1200	1580	270(260)
	400(W)N	FLG. 100A	400	56(59)	9.7(8.9)		900	1591	1915	600(500)
	500(W)N	FLG. 150A	500	66(70.6)	11.7(10.9)		1200	1800	1830	940(780)
	600(W)N	FLG. 150A	600	85(91)	12.7(11.9)		1200	1800	1830	1100(780)
	800(W)N	FLG. 200A	800	120	20(18.5)		1500	1900	2150	1200(950)
	900(W)N	FLG. 200A	900	140	25.45(23.2)		1500	1900	2000	1250(1,010)
	1200(W)N	FLG. 200A	1200	180	30.15(27.9)		2000	1900	2150	1400(1,300)

Correction Factors

Correction Factor by Inlet Air Temperature												
Inlet Air Temperature (°C)	25	30	38	43	47	50						
Correction Factor	1.15	1.05	1.00	0.7	0.6	0.55						
Correction Factor by Inlet Air Pressure												
Inlet Air Pressure (barg)	4	5	6	7	8	9	10	11	12	13	14	
Correction Factor	0.77	0.86	0.93	1.00	1.05	1.1	1.14	1.18	1.21	1.24	1.27	
Correction Factor by Ambient Temperature (Air-cooled type)												
Ambient Temperature (°C)	27	32	37	40	45	50						
Correction Factor	1.02	1.00	0.8	0.75	0.65	0.5						