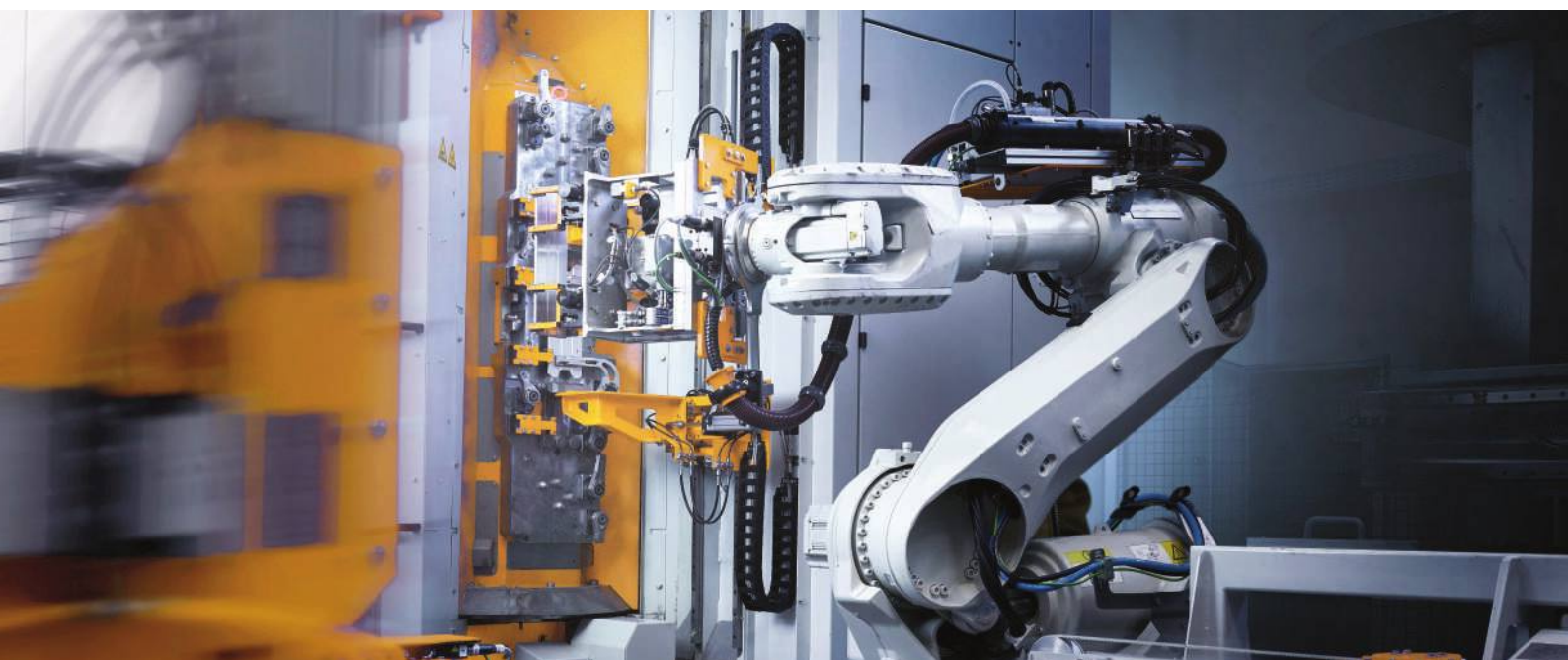


GSA Air Dryers

HYD-N series

Refrigerated air dryers (Non-cycling)

Global Standard Air & Gas



Why Refrigerated Air Dryer ?

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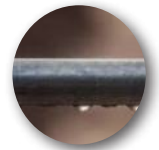
Compressed air dryer is as important as air compressors in order to keep your air system running at peak efficiency. All compressed air systems suffer from the common problems of dirt, oil and water contamination entering the system. These are intensified when air is compressed.

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 contaminants 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.

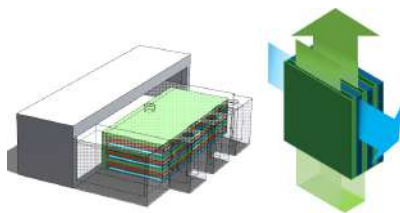


Internal Pipe Corrosion



External Pipe Sweating

GSA 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.

ISO 8573-1:2010 International Compressed Air Quality Classes

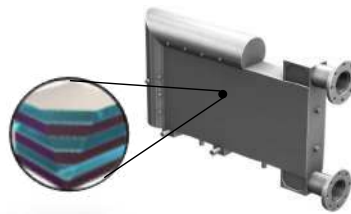
ISO 8573-1:2010 is an international standard for rating the quality of compressed air. It offers quantified guideline of contaminants in the compressed air including solid particles, moisture and oil. The compressed air quality rating is applied strictly to various industrial fields where high quality standards and requirements are essential such as food, drinks, medicine, spinning & weaving and electronics.

GSA refrigerated air dryers, designed with the latest technologies and extensive manufacturing knowhow offer more advanced features and performance guarantees than other brands on the market. GSA guarantees a constant dew point to keep compressed air systems operating at peak efficiency meeting ISO8573.1 Compressed Air Quality Class IV-V.

ISO8573-1:2010 CLASS	Solid particles			Moisture [°C]	Oil [mg/m3]
	0.1 - 0.5µm	0.5 - 1µm	1 - 5µm		
1	≤ 20,000	≤ 400	≤ 10	≤ -70°C	0.01
2	≤ 400,000	≤ 6,000	≤ 100	≤ -40°C	0.1
3	-	≤ 90,000	≤ 1,000	≤ -20°C	1
4	-	-	≤ 10,000	≤ 3°C	5
5	-	-	≤ 100,000	≤ 7°C	

Highly Reliable Refrigerated Air Dryer

Diverse Innovative Technologies



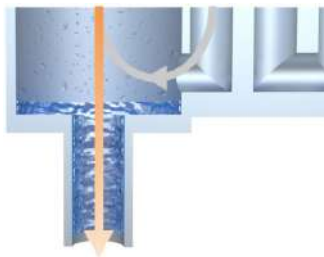
High-efficiency Aluminum Heat Exchanger

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.



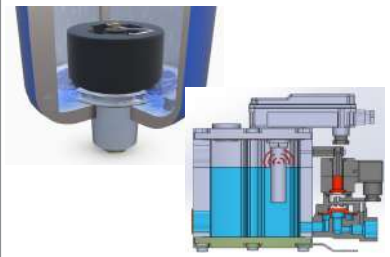
Smart and Simple Controller

The simple and functional controller helps users read the exact dew points. In addition, it is easy to check energy savings through the ECO lamp. In addition, diverse controllers featuring a 4.3" color TFT touch panel and mobile communication specifications (WIFI, BT) are also offered as an option.



Efficient Condensate Separation

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



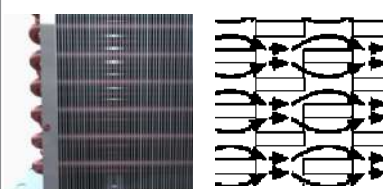
Highly Reliable Drain without Compressed Air Loss

An auto drain featuring a magnetic float which is free from compressed air loss is applied, enhancing the efficiency of compressed air facilities. The magnetic float ensures great operating performances and minimizes performance drop or failure in the drain caused by oil, dirt and various contaminants.



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 uniform tube expansion. GSA refrigerated compressed air dryers are performance-proven under diverse area including tropics.



Technical Specification

Design condition

- Inlet Pressure : 7 barg
- Inlet Temperature : 38 °C
- Pressure Dew Point (PDP) : 2 ~ 10 °C
- Ambient (Cooling water) Temperature : 32 °C
- Design Pressure : 14 barg
- Design Temperature : 70 °C

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	Nm ³ /min	kW	V / Ph / Hz	A	B	C	kg	
H Y D	5N	PT 15A	5	0.5	220 / 1 / 50, 60	247	557	723	36	
	7N	PT 15A	7	0.8		247	557	723	36	
	10N	PT 20A	10	1		247	557	723	36	
	15N	PT 25A	15	1.5		428	508	709	45	
	20N	PT 25A	20	2.6		428	508	709	45	
	30N	PT 25A	30	3.9		358	658	864	66	
	50N	PT 40A	50	6.7		408	708	952	89	
	75N	PT 50A	75	10.5		458	798	1045	120	
	100N	PT 50A	100	14.2	458	858	1145	126		
	150(W)N	PT 65A	150	21(22.5)	2.9(2.5)	380 / 3 / 50, 60 440 / 3 / 50, 60	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)	28	33	38	43	48	53	58	63	68	70		
Correction Factor	1.46	1.20	1.00	0.85	0.73	0.63	0.55	0.48	0.42	0.40		
Correction Factor by Inlet Air Pressure												
Inlet Air Pressure (barg)	4	5	6	7	8	9	10	11	12	13	14	15
Correction Factor	0.84	0.9	0.95	1	1.03	1.06	1.09	1.11	1.13	1.15	1.17	1.18
Correction Factor by Ambient Temperature (Air-cooled type)												
Ambient Temperature (°C)	27	32	37	40	45	50						
Correction Factor	1.05	1.00	0.92	0.82	0.76	0.69						