GSA Air Accessories

HYA series, others
Auxiliary Equipment for Compressed Air Treatment
Global Standard Air & Gas

GSA
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Combination Air Dryer

Combination Air Dryer

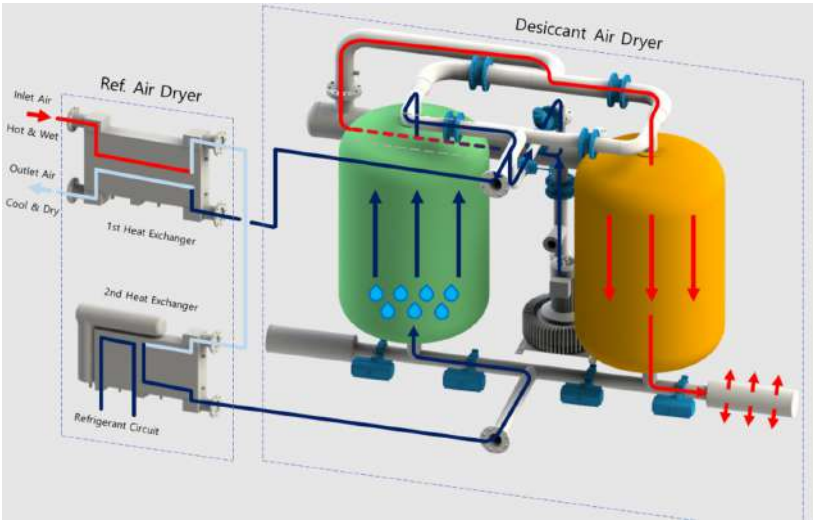
A combination air dryer consists of a refrigerated air dryer and a desiccant air dryer designed to dehumidify compressed air. Instead of being installed individually, they are assembled to be interacted with each other, enhancing product performances and reducing energy consumption.

This high-efficiency, low-cost eco-friendly combination air dryer is designed to enhance dehumidifying performances and reduce energy consumption by supplying compressed air cooled by the refrigerated air dryer to the desiccant air dryer and reheat and supply the dehumidified compressed air.

A regular combination air dryer can be operated with a non-cycling refrigerated air dryer and a heatless or heated regenerative desiccant air dryer. To save more energy, it adopted a 2nd or 3rd-generation energy-saving refrigerated air dryer and a zero-purge desiccant air dryer, reducing energy consumption innovatively.

Operating Mechanism

1. **Flowing into the refrigerated air dryer's 1st heat exchanger**
   The high-temperature compressed air and cold outlet air are heat-exchanged, reheating outlet air while cooling inlet air.
2. **Flowing into the refrigerated air dryer's 2nd heat exchanger**
   The pre-cooled compressed air is cooled up to a dew point by a refrigerant.
3. **Flowing into the desiccant air dryer**
   Produces dry compressed air (-40°C or below), using the desiccant charged in the Adsorption tower.
4. **Flowing into the refrigerated air dryer's 1st heat exchanger**
   Flows into the refrigerated air dryer's 1st heat exchanger; after heat-exchange with high-temperature inlet air, dry reheated air is supplied.



Features

AUTO Operation
The refrigerated air dryer is automatically run/stopped according to inlet air temperature, preventing unnecessary energy consumption.

Saving Operating Costs
Reduces operating costs with small power consumption of the regeneration heater and small amount purge air.

Decrease in Desiccant Costs
Reduces desiccant costs with a long replacement interval and small desiccant consumption.

Stable Performances
Guarantees stable dew points through combination with a refrigerated air dryer.

Custom-made Dryers

Indirect Cooling-type Air Dryer

Unlike a direct cooling system in which compressed air is directly cooled by a refrigerant in a heat exchanger, an indirect cooling-type air dryer enables the cooling and dehumidification of compressed air through an intermediate heating medium. For the intermediate heating medium, cooling water such as brine is commonly used.

A conventional direct cooling system consists of two different heat exchangers such as air-to-air heat exchanger and an air-to-REF heat exchanger. In contrast, an indirect cooling air dryer is comprised of three heat exchangers: air-to-air, heating medium-to-REF and heating medium-to-air heat exchangers. A coolant fluid used as a heating medium is usually high in heat capacity and specific heat. As a result, it ensures more stable dew points in certain circumstances such as rapid increase in load compared with a direct cooling method.

	Direct Cooling	Indirect Cooling
Heat Exchanger	Air to Air	Air to Air
	Air to Ref.	Cooling medium to Ref.
	-	Cooling medium to Air
System Configuration	Relatively simple	Complicated
Application	Good for small-medium size	Good for large size
Dew Point	Relatively stable	More stable than direct cooling

Active Carbon Tower Desiccant Air Dryer

An active carbon tower desiccant air dryer is a product with an active carbon tower added to the outlet of a regular desiccant dryer. It removes oil vapor and odor produced during air compression and offers better dew points.

The compressed air dried in a desiccant dryer flows into the active carbon tower. The active carbon removes oil, and oil contents ultimately reach 0.003mg/m3.

Applications

- Food production and packaging
- Beverage production
- Pharmaceuticals and medicine

Products

- Flow rate: 45-3400 Nm3/hr
- Able to control diverse processing time
- Easy maintenance through manual operation mode
- Noise minimized with a high-quality muffler
- '-40°C' dew point basically provided
- Up to -100 °C or below (option)
- Diverse design code : KS, ASME, DOSH, GOST

After-cooler

Why After-cooler?

The compressed air from air compressor is provided at temperature higher than ambient temperature by nearly 15°C due to the heat produced during compression. Such hot and humid compressed air increases load on a refrigerated or desiccant air dryer, reducing dehumidifying performances by increasing load on dehumidifying systems such as a refrigerated/desiccant air dryer.
An after-cooler is an auxiliary system designed to enhance dehumidifying performances by lowering load on a refrigerated or desiccant dryer by cooling high-temperature compressed air and discharging condensate.

After-cooler

Air-cooled After-cooler (HYA)

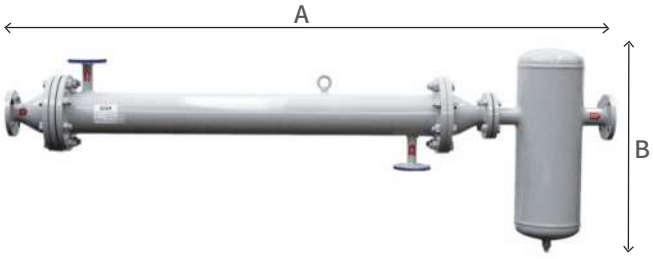
Cooling medium	Ambient air
Heat exchanger	Aluminum fin tube
Outlet temperature	Ambient temperature + 10°C
Components	• Air-cooled After Cooler • Pressure Gauge (excluding Small Size) • Drain (Option)

Water-cooled After-cooler (HYA-W)

Cooling medium	Coolant
Heat exchanger	Shell and tube heat exchanger
Outlet temperature	Coolant temperature + 5°C
Components	• Water-cooled after-cooler • Water separator (option) • Drain (option)

Water-cooled After-cooler

A water-cooled after-cooler is a system designed to cool high-temperature compressed air from an air compressor, using cooling water.
Condensate produced when hot compressed air is cooled is drained out through a water separator in the outlet of the water-cooled after-cooler.



✳ NOTE

- A water separator is optional.
- Water separator dimensions are subject to changes depending on specifications.

Design Conditions

• Inlet Pressure : 7 barg • Inlet Temperature : 60 °C(Max. 80 °C) • Coolant Temperature : 32 °C • Design Pressure : 9.7 barg

Model		Connection	Flow Rate	Coolant Connection	Coolant Flow Rate	Dimensions(mm)		Weight
		A	Nm³/min	A	ℓ/min	A	B	kg
HYA	100W	FLG. 50A	18	FLG. 25A	55	1990	620	142
	200W	FLG. 80A	30	FLG. 32A	105	2220	750	154
	300W	FLG. 100A	36	FLG. 40A	155	2580	750	196
	400W	FLG. 100A	42	FLG. 50A	210	2720	750	266
	500W	FLG. 150A	60	FLG. 65A	270	3060	1000	303
	600W	FLG. 150A	90	FLG. 80A	320	3220	1000	460

After-cooler

Air-cooled After-cooler

An air-cooled after-cooler is a system designed to cool high-temperature compressed air from an air compressor, using ambient air. Condensate produced when compressed air is cooled is discharged through a drain valve in the outlet.

Features

1 Easy bypass piping
Easy bypass piping for maintenance with wide inlet-outlet spaces

2 Convenient power connection
A terminal block needed for power connection exposed, ensuring easy and convenient power connection

3 Diverse drain
Able to assemble various types of drains with a wide gap between the floor and drain outlet

4 Great heat-exchange efficiency
Ensures great heat-exchange efficiency through precise expansion, using corrugated aluminum fin and phosphorus-deoxidized copper tube

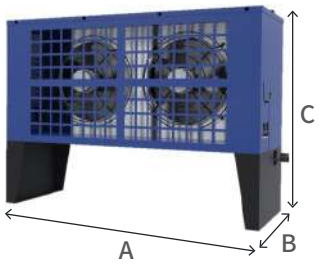
Technical Specification

Design Conditions

- Inlet Pressure : 7 barg
- Inlet Temperature : 60 °C(Max. 80 °C)
- Ambient Temperature : 2~40 °C
- Design Pressure : 9.7 barg

References

- Large models bigger than those stated in the specifications above are also customizable.
- The specifications are subject to changes without notice for product improvement.
- High-pressure or special-purpose models in addition to the proposed specifications are also customizable.
- Models other than those stated in the electrical specifications above are also customizable.



Model		Connection	Flow Rate	Fan Size	Power Consumption	Power Supply	Dimensions(mm)			Weight
		A	Nm³/min	mm	kW	V / Ph / Hz	A	B	C	kg
HYA	20AN	PT 25A	1.0	230 X 1	0.03	220 / 1 / 50, 60	500	230	590	15
	25AN	PT 25A	3.2	230 X 1	0.03		500	230	590	16
	40AN	PT 25A	5.1	300 X 1	0.07		600	300	700	23
	50AN	PT 40A	7.8	250 X 2	0.15		900	370	710	40
	80AN	PT 50A	12.7	300 X 2	0.14		1,030	370	760	46
	100AN	PT 50A	17.5	350 X 2	0.2		1,160	400	810	55
	150A	PT 80A	28.0	450 X 2	0.4	380 / 3 / 50, 60 440 / 3 / 50, 60	1,690	460	1,095	180
	200A	FLG. 100A	41.0	500 X 2	0.4		1,780	425	1,245	210
	300A	FLG. 100A	52.0	550 X 2	0.8		1,880	480	1,360	230
	400A	FLG. 125A	65.0	450 X 4	0.8		1,830	470	1,615	300
	500A	FLG. 150A	75.0	500 X 4	0.8		1,975	475	1,685	350
	600A	FLG. 150A	95.0	550 X 4	1.6		2,075	530	1,840	370

Receiver Tank

What Receiver Tank Can Do?

A receiver tank is the auxiliary apparatus of a compressed air supply system. It temporarily stores the compressed air from an air compressor and supports its efficient operation.

Why Receiver Tank?

- Increase in air compressor management costs due to short load/no-load interval of an air compressor
- Temporarily stores hot air from an air compressor, releases condensate by cooling the compressed air naturally and reduces load on the compressed air system
- Minimizes pressure changes which affect production processes or quality
- Secures the stability of manufacturing processes in emergency situations

Technical Specification

Design Conditions

- Inlet Pressure : 9.7 barg
- Design Temperature : 100°C

References

- Models under ASME in addition to KS are also customizable.
- High-pressure models with high design pressure are also customizable.
- Large models bigger than those stated in the specifications above are also customizable.
- The specifications are subject to changes without notice for product improvement.

Model		Capacity	Connection	O.D.	Height(H)	Anchor Hole	Weight
		m3	A	mm	mm	mm	kg
G S	0003A	0.3	25A	609	1,450	16	150
	0005	0.5	40A	660	1,770	16	210
	001	1	50A	916	1,908	16	400
	0015	1.5	50A	1,013	2,246	16	560
	002	2	65A	1,150	2,358	20	832
	0025	2.5	80A	1,284	2,559	20	970
	003	3	80A	1,299	2,720	20	1,300
	0042	4	100A	1,489	2,820	20	1,500
	005	5	100A	1,504	3,437	20	1,750
	0061	6	150A	1,626	3,460	22	2,500
	007	7	150A	1,626	4,078	22	2,700
	008	8	150A	1,606	4,580	22	3,000
	010	10	200A	1,878	4,287	24	3,100
	012	12	200A	1,960	4,657	24	3,800
	013	13	200A	2,134	4,300	24	4,000
	016	16	250A	2,480	4,025	24	5,000

Condensate Drain

Condensate Drain

A condensate drain is essential apparatus designed to prevent system failure, extend the life of the equipment and prevent a product defect by periodically discharging condensate which is produced during dehumidification of compressed air.

HAD-10

TECHNICAL DATA	
Operating Temp.	2 ~ 60°C
Operating Press.	0.5~16barg
Type	Float
Inlet Connection	PT 15A
Outlet Connection	PT 6A
Dimension(D x H, mm)	68Φ x 102
Weight	0.1 kg

HAD-20

TECHNICAL DATA	
Operating Temp.	2 ~ 60°C
Operating Press.	0.5~16barg
Type	Float
Inlet Connection	PT 15A
Outlet Connection	PT 6A
Dimension(D x H, mm)	84Φ x 184
Weight	0.5 kg

HAD-100

TECHNICAL DATA	
Operating Temp.	2 ~ 60°C
Operating Press.	0.5~16barg
Type	Disk
Inlet Connection	PT 15A
Outlet Connection	PT 15A
Dimension(D x H, mm)	86Φ x 175
Weight	0.8 kg

EDV-15T/40T

TECHNICAL DATA	
Operating Temp.	2 ~ 60°C
Operating Press.	0~15barg
Type	Elec. Timer
Inlet Connection	PT 15A
Outlet Connection	PT 15A
Dimension(D x L x H, mm)	95 x 90 x 102
Weight	0.6 kg

DM Series

TECHNICAL DATA	
Operating Temp.	2 ~ 80°C
Operating Press.	0.8~16barg
Type	Level Sensing
Inlet Connection	PT 15A
Outlet Connection	PT 10A
Dimension(D x L x H, mm)	165 x 80 x 155
Weight	1.3 kg

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Differential Pressure Gauge / Desiccant

Differential Pressure Gauge

Indicate differential pressure by detecting pressure at the inlet and outlet of the filter and allows a user to check when a filter element should be replaced

HDI30

TECHNICAL DATA	
Operating Temp.	2 ~ 60°C
Operating Press.	Max. 16 barg
Green Area	0~0.6 bar
Red Area	0.6~0.9 bar
Mounting Bolt	M5
Dimension(D x L x H, mm)	40 x 40 x 35
Weight	0.03 kg

HDI50

TECHNICAL DATA	
Operating Temp.	2 ~ 60°C
Operating Press.	Max. 16 barg
Green Area	0~0.6 bar
Red Area	0.6~0.9 bar
Mounting Bolt	M5
Dimension(D x L x H, mm)	64 x 72 x 68
Weight	0.15 kg

Desiccant

A desiccant used includes carbon molecular sieve (CMS) and zeolite molecular sieve (ZMS) for nitrogen and oxygen production, including activated alumina needed to dehumidify compressed air.

Activated Alumina

PACKING	
Desiccant Size [mm]	4~6
Small Packing	20 kg
Large Packing	1000 kg

Carbon Molecular Sieve

PACKING	
Desiccant Size [mm]	Pellet
Small Packing	40 kg
Large Packing	137 kg

Zeolite Molecular Sieve

PACKING	
Desiccant Size [mm]	3A/4A/5A/13X
Small Packing	40 kg
Large Packing	120 kg