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# HX SERIES

Compressed Air Dryers  
10 to 2400 scfm



Setting a new standard in Quality and Reliability



## ELIMINATE WATER FROM YOUR COMPRESSED AIR SYSTEM

Untreated compressed air is the unseen killer in all compressed air applications. Premature tool failure, product spoilage, failed instrumentation, damaged actuators and cylinders, are only part of the long list of casualties in the battle for increased productivity and profits.

It is all too common that compressed air is the forgotten utility in most facilities. Without proper treatment, this vital source of work is a wet, gritty, acidic brew, silently destroying all that it comes into contact with.



In this day and age, clean dry compressed air is a necessity not a luxury. The MACAIR HX Series of refrigerated air dryers is the key component in the ultimate solution for most applications. The installation of the right MACAIR HX Series dryer will show immediate results and effectively remove gross amounts of water from the compressed air system. Protection that you need to ensure the best chance of maximum productivity, reduced downtime, and enhanced profitability.

### WHERE WATER COMES FROM?

The atmospheric air entering a compressor intake contains water vapor. To compress air for industrial use your air compressor typically compresses approximately 7 cubic feet of ambient air to produce 1 cubic foot of compressed air at 100 psig. The net result is seven times as much water and contaminants inside your compressed air lines as outside. If not removed this water and contamination will mix with hot lubricants forming an acidic substance that will cause premature failure of your pneumatic tools and equipment, rust, scale and ultimately leaks in compressed air pipes.

### HOW IS THE WATER REMOVED?

The goal is to lower the dew point temperature in your compressed air system. Dew point temp is simply the temperature which water vapor changes (condenses) into liquid water. HX Series air dryers use refrigeration to lower the temperature of the compressed air, thereby lowering its dew point temp. As the temperature and dew point drops, the moisture condenses into a liquid and is separated from your compressed air and drained away. The end result is cool, clean, dry compressed air ready to work for you and not damage your pneumatic equipment.

## BUILT FOR YEARS OF TROUBLE FREE SERVICE MADE IN USA

The MACAIR family of refrigerated compressed air dryers are handcrafted by dedicated skilled craftsman in the suburbs of Detroit Michigan USA. MACAIR air dryers provide the user with an integrated system of high quality components that together make up an air dryer that will provide years of trouble free service. All components are sourced from only the best North American suppliers. Years down the road spare parts will always be readily available from MACAIR distributors or from HVAC suppliers through out North America. It is because of this fact and the confidence we have in our craftsman that we back all MACAIR dryers with a 2 year parts and labor warranty. When you purchase a MACAIR dryer you will receive the peace of mind that comes with a high quality **MADE IN AMERICA** product backed by one of the best warranty in the industry.



## ENERGY EFFICIENT REFRIGERATED AIR DRYERS

HX Series dryers have an average of 2.0 psid pressure drop. Many competitive dryers have as high as a 5.0 psid pressure drop across there heat exchangers. High pressure drops causes your air compressor to work harder to overcome the restriction thereby driving up the consumption and cost of electricity. Electricity costs accounts for approximately 50% of the air dryers total cost over the first 5 years of ownership. Every 2 psi of pressure drop across your dryer will increase your systems electrical costs by 2%. Low pressure drop equals low electrical costs. Example: A competitors 500 SCFM dryer that has a 5.0 psid pressure drop will cost over \$1098.00 more annually (Based on \$0.10 per KW) in electrical costs versus a MACAIR HX500 dryer with a 2.0 psig.

## HX SERIES FIVE STEP DRYING PROCESS

**STEP 1. PRECOOLING** – Hot saturated compressed air enters the pre-cooler section of the ADX heat exchanger module and flows thru channels were it is pre-cooled by out going cold air. The incoming air temperature is reduced approximately 30F.

**STEP 2. EVAPORATOR** - The pre-cooled air then enters the evaporator where it is cooled to its final dew point.

**STEP 3. SEPERATION** – The mixture of cold air and condensation flows into the separation chamber where is scrubbed by a stainless steel mesh and the liquid moisture is separated from the air stream.

**STEP 4. DRAIN** – After the moisture is separated from the air stream it gathers in a quite zone and is drained away by the automatic drain valve.

**STEP 5. REHEATING** – After the air exits the separator and the moisture is drained away the air stream enters the reheater where it flows through channels where it is reheated by the incoming hot air. The outgoing air reheated to approximately 25 to 30F within the incoming air temp and then exits the ADX heat exchanger module.



# “It’s whats inside that counts”

HX series dryers are built to withstand the harshest industrial environments using only the highest quality components and assembled by highly skilled craftsman. Quality features built into every HX series dryers.

## ADX ALUMINUM HEAT EXCHANGER MODULE

The ADX heat exchanger module combines the air to air air to refrigerant heat exchangers and moisture separator all in one compact all aluminum module. Because of the compact design and no interconnecting piping pressure drops average 2.5 psig, the lowest in the industry.

## HOT GAS BYPASS VALVES

Allows dryer to operate at a constant dew point from 0 to 100% load without the possibility of freeze ups.

## HEAVY DUTY FAN CYCLING CONTROL

Cycles the condenser fans on and off to maintain proper head pressure during fluctuating ambient temperatures. (Air-cooled only)

## SIMPLE, RELIABLE CONTROLS

- Suction Pressure Gage (HX125 and up)
- Discharge Pressure Gage (HX800 and up)
- Digital Dewpoint Indicator
- Readout On-Off Switch
- Power On Light

## REFRIGERANT ACCESS PORTS

All models include high and low side refrigeration system access ports for easy servicing.

## DIGITAL DEWPOINT INDICATOR

Electronic Temperature indicator provides precise, continuous outlet air dew point temp readout of the air stream. (Std. on HX75 and above)

## ELECTRONIC TIMER DRAINS

Feature fully adjustable timer mechanism, and large orifice for trouble free operation.

## ZERO LOSS DRAINS

Energy efficient drains ensure that valuable compressed air is not lost when condensate is ejected. (optional)

## ENERGY EFFICIENT HERMETIC COMPRESSOR

Tecumseh and Copeland compressors are used, they are Made In The USA , are proven and are the most widely used compressors.

## OVERSIZED CONDENSERS

Assures proper operation in the harshest industrial environments. Dryers can withstand up to 140F Inlet air and 120F ambient temps.



**SPECIFICATIONS & DIMENSIONS**

MODEL	CAPACITY (1) SCFM		REFRIG COMP HP	IN/OUT NPT	Pressure Drop (psid)	DIMENSIONS			SHIP WGT (LBS)	REF	AVAILABLE VOLTAGES
	38 f pdp	50 f pdp				W	L	H			
	HX10A	10				14	1/6	3/8 O.D.			
HX20A	20	28	1/5	1/2	0.50	12	17	20	80	R134a	
HX25A	30	41	1/4	1/2	1.20	12	17	20	85	R134a	
HX40A	40	55	1/4	1/2	1.20	12	17	20	90	R134a	
HX55A	55	76	1/3	1/2	2.00	12	17	20	95	R134a	
HX75A	75	104	1/2	1	2.00	18	26	26	135	R134a	
HX100A	100	138	1/2	1 1/2	2.00	18	26	26	148	R134a	
HX125A	125	173	3/4	1 1/2	1.90	23	33	32	225	R134a	
HX150A	150	207	3/4	1 1/2	2.00	23	33	32	235	R134a	
HX200A	200	276	1	1 1/2	2.00	23	33	32	250	R134a	220-1-60
HX250A	250	345	1 1/2	1 1/2	2.00	23	33	32	295	R134a	230-3-60 460-3-60 575-3-60
HX300A	300	414	1 1/2	1 1/2	1.95	23	33	32	310	R134a	
HX400A	400	552	2	2	1.95	29	46	37	486	R404a	
HX500A	500	690	3	2	2.00	29	46	37	526	R404a	
HX625A	625	863	3	2	2.10	29	46	37	530	R404a	
HX800A	800	1104	4	3	2.10	38	50	59	855	R404a	
HX1000A	1000	1380	5	3	2.15	38	50	59	865	R404a	
HX1200A	1200	1656	6	3	2.13	38	50	59	900	R404a	
HX1600A	1600	2208	7.5	3	2.30	40	56	72	1400	R404a	
HX2000A	2000	2760	10	3	2.10	40	56	72	1595	R404a	
HX2400A	2400	3312	12	4	2.50	40	56	72	1755	R404a	

NOTES:

- Capacity is based on CAGI Standard No. ADF100. Inlet Temp 100 F, Inlet Pressure 100 psig Ambient Temp 100 F at 38 F PDP. For conditions other than standard use the correction factors below.
- Dryers maximum operating pressure is 232 psig for higher pressures consult factory.
- Pressure drop across dryer is less than 5 PSID. Avg pressure drop is 2.5 PSID.
- Aircooled condensers are standard on all models. Watercooled condensers are available.
- Information in this catalog is subject to change without notice.
- H Series prefilters are recommended before the HX SERIES dryers. See H Series catalog.**
- For Larger Sizes Consult Factory.

**HX Series Correction Factors**

**Rated Capacity (SCFM) x F1 x F2 x F3 x F4 = Actual Dryer Capacity**

<b>Inlet Pressure</b>	<b>PSIG</b>	<b>85</b>	<b>100</b>	<b>115</b>	<b>145</b>	<b>185</b>	<b>232</b>
<b>Correction Factor</b>	<b>F1</b>	0.97	1	1.03	1.07	1.13	1.16

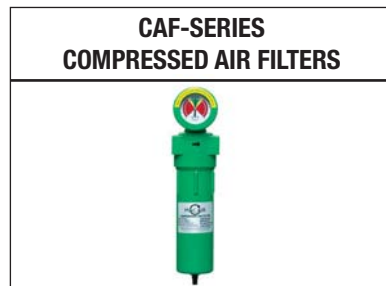
<b>Inlet Temp.</b>	<b>F</b>	<b>85</b>	<b>100</b>	<b>115</b>	<b>125</b>	<b>130</b>
<b>Correction Factor</b>	<b>F2</b>	1.05	1	0.79	0.65	0.56

<b>Ambient Temp.</b>	<b>F</b>	<b>80</b>	<b>90</b>	<b>100</b>	<b>105</b>	<b>115</b>
<b>Correction Factor</b>	<b>F3</b>	1.16	1.03	1	0.95	0.93

<b>Dewpoint Temp.</b>	<b>F</b>	<b>38</b>	<b>45</b>	<b>50</b>
<b>Correction Factor</b>	<b>F4</b>	1	1.24	1.28

## STANDARD & OPTIONAL FEATURES

MODELS	HX SERIES				
	10 - 25	40 - 100	125 - 300	400-625	800 - 2000
<b>GAUGES</b>					
Refrigerant Suction Press.	S	S	S	S	S
Refrigerant Discharge Press.	O	O	O	O	S
Dewpoint Temp Indicator	O	S	S	S	S
Air Out Pressure	O	O	O	O	O
<b>DRAINS</b>					
Electric Programmable Drain	S	S	S	S	S
Float Type Drain	O	O	O	O	O
Zero Air Loss	O	O	O	O	O
<b>CONTROLS</b>					
On/Off Switch	S	S	S	S	S
Power On Light	S	S	S	S	S
High Temp Warning Light	S	O	O	O	O
High Temp Alarm (Audible)	O	O	O	O	O
Thermostatic Expansion Valve	O	O	O	O	S
Hot Gas Bypass Valve	S	S	S	S	S
Fan Cycling Switch	S	S	S	S	S
High/Low Ref Pressure Shutdown	O	S	S	S	S
Suction Accumulator	O	O	O	O	S
Receiver Tank	O	O	O	O	S
Crankcase Heater	O	O	S	S	S
Compressor Relay/Contactor	S	S	S	S	S
Compressor Overload	S	S	S	S	S
<b>MISC.</b>					
Refrigerant Access valves	S	S	S	S	S
Heavy Duty Steel Cabinet	S	S	S	S	S
Powder Coated Cabinet	S	S	S	S	S
Power Cord	S	S	O	O	O



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