



REFRIGERATION AIR DRYERS
MDX from 400 to 84000

T E C H N O L O G Y Y O U C A N T R U S T

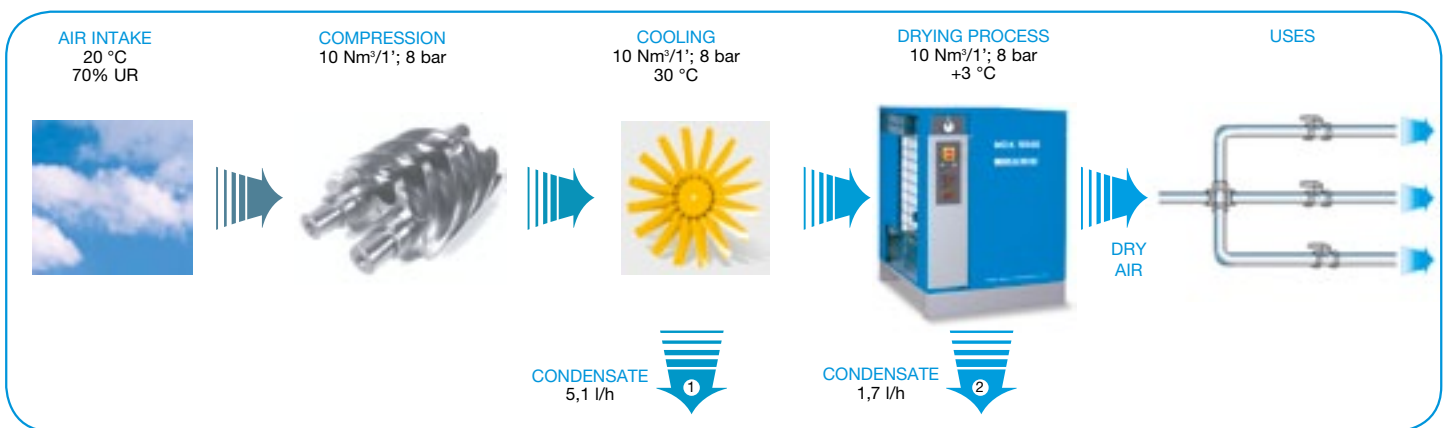
Using a dryer is worth it

Humidity is a component of atmospheric air, which can be found in our compressed air distribution systems and the machines that use the compressed air in the form of condensate and/or vapour.

If the condensate can be easily separated and discharged, humidity, in the form of vapour, will follow the compressed air flow all the way to the final product.

When it then cools, a part of this humidity present in the compressed air condenses and over time causes serious damage to the distribution network, the machines using the compressed air and the final product.

For example, 5.1 l/h of condensate is separated from a compressor with an output capacity of 10 Nm³/min and an ambient intake air temperature of 20°C and 70% relative humidity, whilst operating at a delivery pressure of 8 bar(g) and cooling the air to 30°C. 1



If the compressed air is then dried further to a dewpoint of +3°C, an additional 1.7 l/h of condensate can be separated. 2

The distribution unit costs less

and can be installed without slopes to drain points, without separators and without condensate drains, but with simple “T” slopes coming directly from the distribution ring.

Longer life

for pneumatic equipment, as the use of dry air guarantees reliable performance over time.

Lower maintenance costs:

- for the distribution network, as there is no need to clean line separators or check the operation of the drains, which at times may even be spread over very wide areas.
- for machine applications and pneumatic tools, as the absence of condensate eliminates the main cause of breakdowns.

Greater productivity

because of fewer untimely breakdowns due to machine faults.

Energy savings

due to fewer line pressure drops.

Higher final product quality

both for applications where compressed air comes directly into contact with the product and where the air acts purely to assist movement of the machine's servomechanisms.

It increases profits and improves the company's image.

That's why maintenance managers, production managers, and air compressor specialists ensure their systems have a DRYER.

Quality • Installation • Maintenance

Mark is one of the world's leading manufacturers of dryers and is the only air compressor manufacturer that designs and produces all the dryers they use for their range of compressors in their own factory.

Quality

High reliability achieved through the development of the dryers in the MDX range.

First-class components that have been tested under the most adverse operating conditions.

Constant dewpoint under any load condition.

Automatic operation.

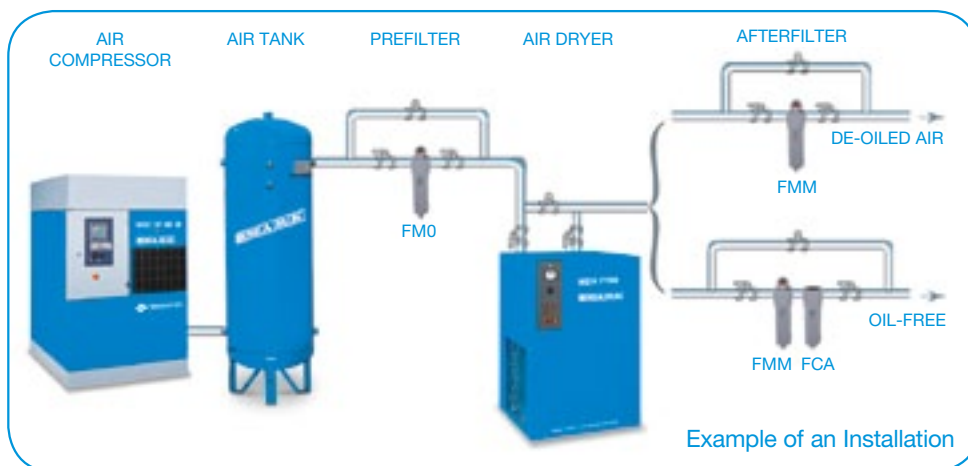


Installation

Its unique light and compact design makes it easy to transport by whatever means you choose to use. Installation of the MDX dryer is simple and does not require any special equipment nor any special foundation work, whether it is a new system or an update to an existing system.

All that's necessary is a pneumatic and an electrical connection and the dryer is ready to use.

Installation is only complete once filters have also been fitted.



Example of an Installation

Maintenance

Years of experience, the quality of the components we use, the generous size of the unit, its simple design and effective control system all contribute towards making these units safe and reliable over time.

All the dryers in the MDX range have been designed and built with particular attention given to its operation and performance using first-class components that have been tested in the field for many years.

The refrigerant dryer offered by MARK is a unit that:

- requires low maintenance and long intervals between overhauls;
- has few components subject to stress.

Savings • Environment



Savings

High energy savings due to low pressure drops throughout the system.

No wastage of compressed air because of the intelligent automatic discharge of condensate.

A cleaner compressed air distribution network without leakage.

Greater reliability and longer life of applications.

Less and easier maintenance due to the reliability of the components and the easy access to any internal component.

Safe and reliable operation.

Intelligent automatic discharger of condensate

Advantages

- **Discharges only water, NOT compressed air**
= Energy savings
- **Noise-free, no acoustic impact**
= Environmental protection



Additional environmental friendliness thanks to the right ecological gas

Complies with current EC regulations

Thermal insulation to guarantee high efficiency

One step ahead with **R410A** :

- 25% Energy Saving by use of rotary refrigerant compressor technology
- extreme low Global Warning Potential (GWP)



That's why maintenance managers, production managers, and air compressor specialists make sure their systems have a DRYER made by MARK



MDX dryers • Layout

① REFRIGERANT COMPRESSOR

driven by an electric motor, cooled using refrigerant fluid and protected against thermal overload.

② REFRIGERANT CONDENSER

air-cooled and with a large exchange surface for high thermal exchange.

③ IP 54 MOTOR-DRIVEN VENTILATOR

for the condenser cooling air flow.

④ AIR/REFRIGERANT EVAPORATOR

with high thermal exchange and low leakage rates.

⑤ CONDENSATE SEPARATOR

High-efficiency.

⑥ AIR-AIR EXCHANGER

with high thermal exchange and low load losses.

⑦ REFRIGERANT FLUID SEPARATOR

high-efficiency refrigerant fluid.

⑫ HOT GAS BYPASS VALVE

controls the refrigerant capacity under all load conditions preventing any formation of ice within the system.

MDX 7700



MDX 50000



⑬ ⑭ INSTRUMENT PANEL

for control, consisting of: dewpoint level indicator, ON/OFF switch, voltage indicator and fault alarm.

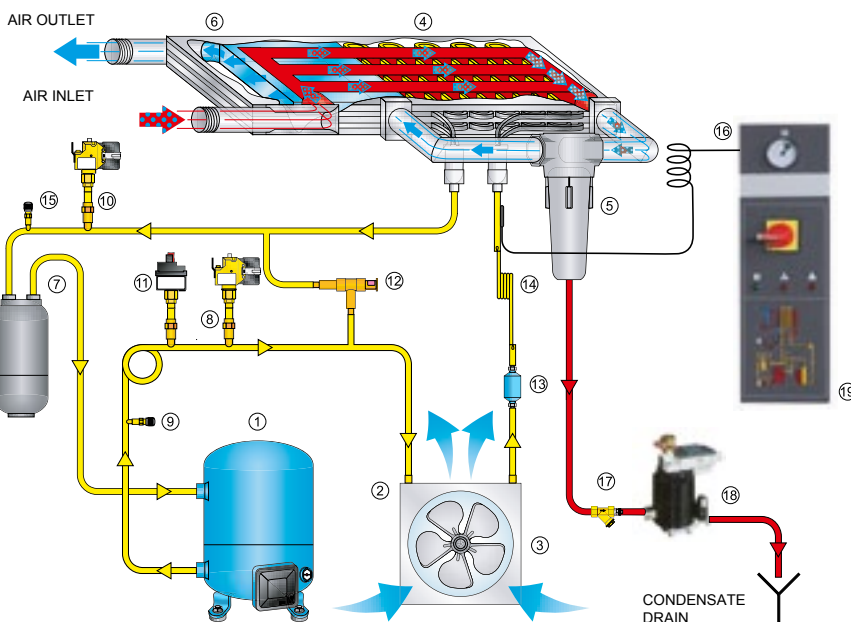
⑮ AUTOMATIC DISCHARGE OF CONDENSATE

which is ecological and capable of preventing unwanted discharge of compressed air.

⑰ COLLECTOR FILTER

for collecting any impurities to protect the condensate discharge system.






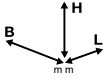

⑱ FILTER Refrigerant.



LAYOUT MDX 50000

- ① Refrigerant fluid compressor
- ② Condenser
- ③ Motor-driven ventilator
- ④ Air/Refrigerant Evaporator
- ⑤ Condensate separator with a demister filter
- ⑥ Air/air heat exchanger
- ⑦ Refrigerant fluid separator
- ⑧ Maximum pressure switch
- ⑨ Service valve
- ⑩ Minimum pressure switch
- ⑪ Pressure switch, fan control
- ⑫ Hot gas bypass valve
- ⑬ Refrigerant fluid filter
- ⑭ Capillary Tube
- ⑮ Service valve
- ⑯ Dewpoint thermometer
- ⑰ Impurity collector
- ⑱ Automatic discharge of condensate
- ⑲ Instrument panel

TECHNICAL DATA (according to ISO 7183 and Cagi Pneurop PN8NTC2)

Type													refrigerant gas
	bar	psi	m³/1'	m³/h	cfm	W	V/Hz/Ph	gas/DN	L	W	H	Kg	
MDX 400	16	232	0,350	21	12,4	130	230/50/1	3/4" M	350	500	450	19	R134a
MDX 600	16	232	0,600	36	21,2	164	230/50/1	3/4" M	350	500	450	19	R134a
MDX 900	16	232	0,850	51	30,0	190	230/50/1	3/4" M	350	500	450	20	R134a
MDX 1200	16	232	1,200	72	42,4	266	230/50/1	3/4" M	350	500	450	25	R134a
MDX 1800	16	232	1,825	110	64,4	284	230/50/1	3/4" M	350	500	450	27	R134a
MDX 2400	13	188	2,350	141	83,0	609	230/50/1	1" F	370	500	764	44	R404A
MDX 3000	13	188	3,000	180	106	673	230/50/1	1" F	370	500	764	44	R404A
MDX 3600	13	188	3,600	216	127	793	230/50/1	1 1/2" F	460	560	789	53	R404A
MDX 4100	13	188	4,100	246	145	870	230/50/1	1 1/2" F	460	560	789	60	R404A
MDX 5200	13	188	5,200	312	184	1072	230/50/1	1 1/2" F	460	560	789	65	R404A
MDX 6500	13	188	6,500	390	230	1190	230/50/1	1 1/2" F	580	590	899	80	R404A
MDX 7700	13	188	7,700	462	272	1446	230/50/1	1 1/2" F	580	590	899	80	R404A
MDX 10000	13	188	10,000	600	353	1818	400/3/50	2" F	735	898	962	128	R410A
MDX 12000	13	188	12,000	720	424	2013	400/3/50	2" F	735	898	962	146	R410A
MDX 15000	13	188	15,000	900	530	2636	400/3/50	2" F	735	898	962	158	R410A
MDX 18000	13	188	18,000	1080	636	3568	400/3/50	2" F	735	898	962	165	R410A
MDX 24000	13	188	24,000	1440	848	3900	400/3/50	3" F	1020	1082	1535	325	R404A
MDX 30000	13	188	30,000	1800	1060	4460	400/3/50	3" F	1020	1082	1535	335	R404A
MDX 35000	13	188	35,000	2100	1237	5550	400/3/50	3" F	1020	1082	1535	350	R404A
MDX 45000	13	188	45,000	2700	1589	6715	400/3/50	DN125	1020	1082	1535	380	R404A
MDX 50000	13	188	50,000	3000	1766	6800	400/3/50	DN125	1020	2099	1535	550	R404A
MDX 70000	13	188	70,000	4200	2472	10200	400/3/50	DN125	1020	2099	1535	600	R404A
MDX 84000	13	188	84,000	5040	2966	12300	400/3/50	DN125	1020	2099	1535	650	R404A

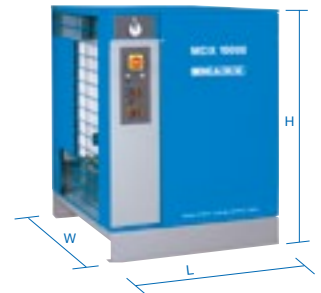
NOTES:

① Reference conditions:

- Operating pressure: : 7 bar (100 psi)
- Operating temperature : 35 °C
- Room temperature: : 25 °C
- Pressure dewpoint: : +3 °C +/- 1
- Available in different voltages and frequency

Optional for MDX (400-1800):

- Bypass + filter support
- Filter support



Limit conditions:

- Working pressure : 16 bar (232 psi) MDX 400-1800
- : 13 bar (188 psi) MDX 2400-84000
- Operating temperature : 55 °C
- Min/Max room temperature : +5 °C; +45 °C

Correction factor for conditions differing from the project $K = A \times B \times C$

Room temperature	°C						Operating temperature	°C								
	25	30	35	40	45	30		35	40	45	50	55				
A	1,00	0,92	0,84	0,80	0,74	(MDX 400-7700)	B	1,24	1,00	0,82	0,69	0,58	0,45	(MDX 400-7700)		
	1,00	0,91	0,81	0,72	0,62	(MDX 10000-84000)		1,00	1,00	0,82	0,69	0,58	0,49	(MDX 10000-84000)		
Operation pressure	bar															
	5	6	7	8	9	10	11	12	13	14	15	16				
C	0,90	0,96	1,00	1,03	1,06	1,08	1,10	1,12	1,13	1,15	1,16	1,17	(MDX 400-7700)			
	0,90	0,97	1,00	1,03	1,05	1,07	1,09	1,11	1,12							(MDX 10000-84000)

The new flow rate value can be obtained by dividing the current or real flow rate by the correction factor related to the real operation conditions.

The company reserves the right to make any changes from the point of view of continuous product improvement.



According to

