

► MCC SERIES CATALYTIC CONVERTER

FILTRATION AND SEPARATION ◀

Oil-free compressors are seen as the ideal solution for any application that requires oil-free air. For this reason, the majority of compressed air users prefer to install an oil-free compressor in their system.

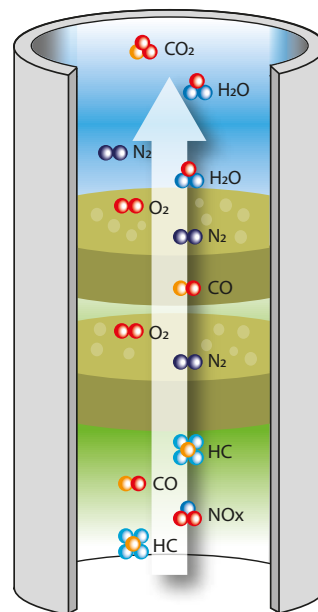
However, oil-free compressors are more costly than their oil lubricated counterparts and do not necessarily deliver truly oil-free compressed air. Like all compressors, oil-free compressors can deliver what they receive from the ambient air. In industrial environments the ambient air typically contains between 0.05 to 0.5 mg/m³ of oil (hydrocarbons). When this atmospheric (ambient) air is compressed to 7 bar, the oil concentration output level of the oil-free compressor increases to between 0.4 and 4 mg/m³. This could not be considered oil-free air and will be a problem for the site if oil-free air is a strict requirement.

Mikropor has a more cost-effective solution to minimise compromises in a compressed air system with the new MCC Catalytic Converter. The MCC eliminates residual oil in compressed air by means of a catalytic reaction between the oil-laden air and the reactant (catalyst).

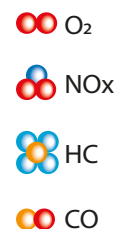
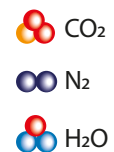
Mikropor's Catalytic Converters use a process of catalytic oxidation to actively transform the oil and hydrocarbons in compressed air and convert them to H₂O and CO₂ by utilizing a special type of catalyst.

Mikropor is delighted to present MCC which can be used as a perfect technical solution to obtain an oil-free compressed air system for a wide variety of industries. MCC Catalytic Converters deliver Class 0 oil-free compressed air in accordance with the ISO 8573-1 International Standard.

Oil content in compressor outlet air is reduced to less than **0.0025 mg/m³** by using heat-reactivated catalyst.



The clean exhaust exits the converter



With the effect of exhaust gases entering the catalyst, oxidation of carbon monoxide (CO) and unburned Hydrocarbons (HC) and reduction of Nitrogen oxides (NO_x) occurs



Advantages

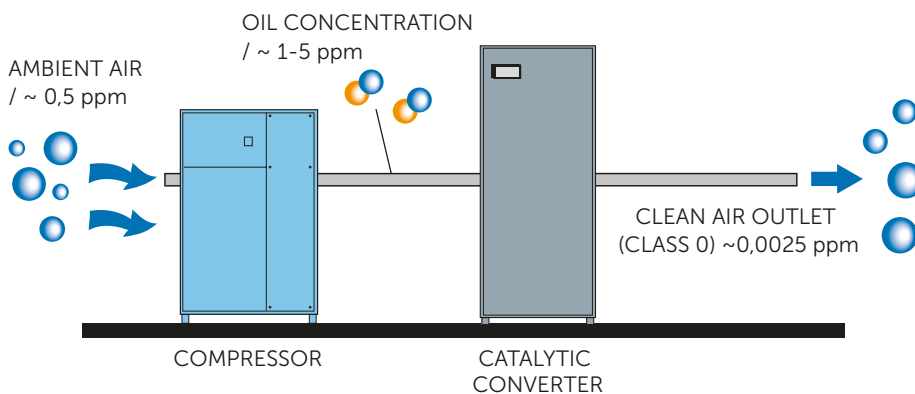
Mikropor’s MCC Catalytic Converters have less investment & operating cost compared to oil-free compressors and provide;

- Cost reductions (By investing in an oil-flooded compressor with an MCC rather than using an oil-free compressor)
- Maintenance cost reductions
- Extended filter change periods
- Eliminated additional costs for separating oil condensate
- Avoidance of costly production standby and shutdown.
- Consistent air quality which will remain at the same level for the lifetime of the catalyst
- Extended service life of downstream equipment
- Reduced energy consumption (maximum 0.01 kWh/m³ at maximum load)

Technical Structure Of MCC Series Catalytic Converter



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|--|--------------------------------------|
| 1. Compressed Air Containing Oil From Compressor | 7. Catalyst (Inside the Tank) |
| 2. Mist Eliminator | 8. Oil Indicator |
| 3. Particulate Filter | 9. Minimum Pressure Closing Valve |
| 4. Heat Exchanger | 10. Electrical Enclosure |
| 5. Converter Vessel | 11. Oil-Free Compressed Air to Dryer |
| 6. Heater (Inside the Tank) | 12. Controller User Screen |



Basic Working Principle of MCC Series Catalytic Converter

At the first stage, specially designed catalyst in MCC vessels is heated up to a certain temperature. The oily inlet air gets resolved into hydrocarbons when entering the heated up container. These hydrocarbons are converted into water and carbon dioxide by reacting with oxygen molecules on the catalyst surface. Thereafter, completely oil free Class 0 compressed air gets cooled by a heat exchanger and delivered right into the system without the need for any additional treatment.



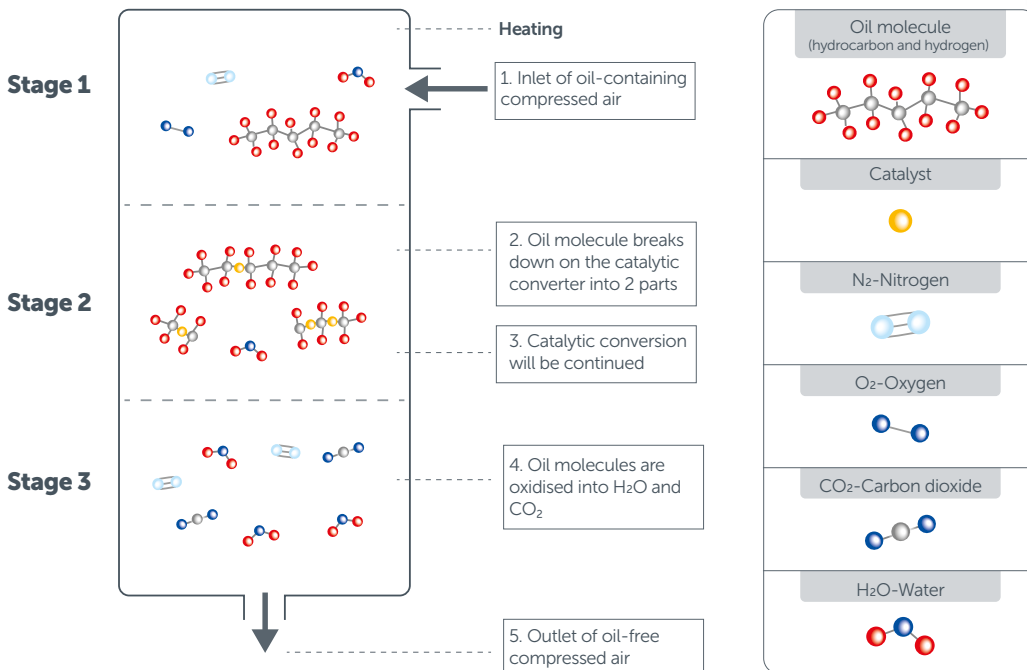
Standard Oil Indicator

Most users would like to be sure that they deliver oil free compressed air to their processes. The oil indicator which is standard on MCC Catalytic Converters prove that there is no oil in the compressed air after the MCC Catalytic Converter.



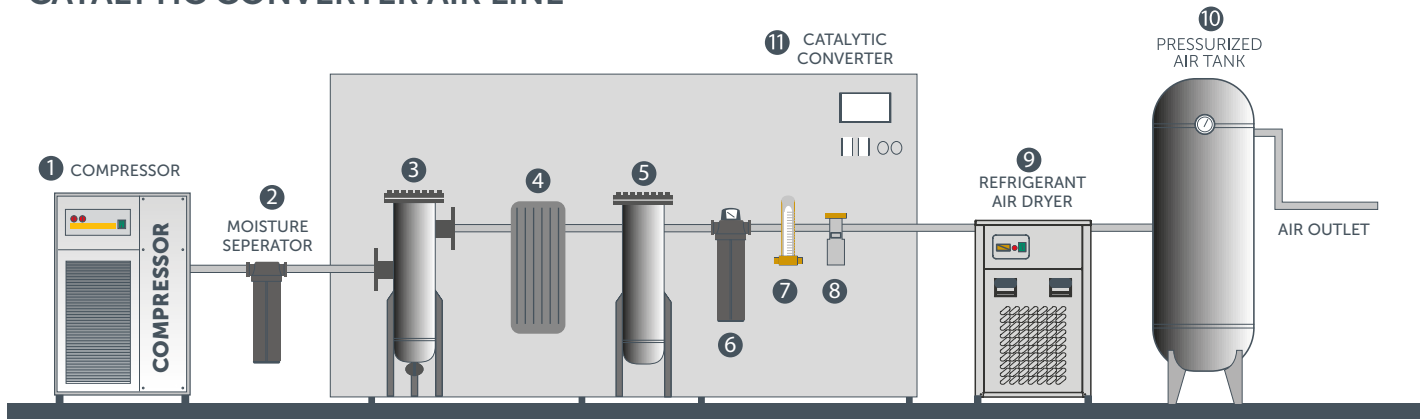
MOI Mikropor Oil Sensor

Optionally, MOI Sensor is supplied along with the MCC Series Catalytic Converters. MOI Sensor reads any oil in the air and shows a digital oil level on the screen. The alarm level can be set to stop entire system and protect the process in case there is any oil in the air.



Components Needed to Design an Oil-Free Class 0 Compressed Air System

CATALYTIC CONVERTER AIR LINE



- 1- Compressor
- 2- Moisture Separator (Standard)
- 3- Carbolescer
- 4- Heat Exchanger
- 5- Catalyst Tank
- 6- Compressed Air Filter (P) (Standard)
- 7- Oil Indicator (Standard)
- 8- Min. Pressure Valve (Standard)
- 9- Refrigerant Air Dryer
- 10- Pressurized Air Tank
- 11- Catalytic Converter

Technical Specifications

Model	Air Capacity (Nm ³ /min)	Connection Size	Max. Working Pressure (bar)	Pressure Drop (mbar)	Voltage	Total Installed Power (kw)	Fuse Amp.	Specific Power Consumption (kWh/m ³)
MCC 11	1	1/2"	16	≤ 400	230/1/50-60	1,2	16	0,009
MCC 22	2	3/4"	16	≤ 400	230/1/50-60	2,5	16	0,009
MCC 55	5	1 1/4"	16	≤ 400	400/3/50-60	5	20	0,007
MCC 75	7	1 1/2"	16	≤ 400	400/3/50-60	5	20	0,006
MCC 110	10	1 1/2"	16	≤ 400	400/3/50-60	10	20	0,005
MCC 160	15	2"	16	≤ 400	400/3/50-60	10	20	0,005
MCC 210	20	2 1/2"	16	≤ 400	400/3/50-60	15	50	0,005
MCC 330	30	2 1/2"	16	≤ 400	400/3/50-60	21	50	0,005
MCC 430	43	DN 80	16	≤ 400	400/3/50-60	28	50	0,005
MCC 650	65	DN 100	16	≤ 400	400/3/50-60	28	50	0,005