

FISCHER FUEL CELL COMPRESSOR AG

OUR SUSTAINABLE AND EMISSION-FREE FUTURE



ABOUT US

TECHNOLOGY LEADER

FISCHER Fuel Cell Compressor AG (FFCC), based in Switzerland, is the technology leader in the field of air compressors for fuel cell technology and is part of the FISCHER Spindle Group AG. Based on our patented spiral groove bearing technology, the company, with more than 20 years of experience in air compressors, has a high-tech product portfolio that has demonstrated efficiencies of more than 20% over compressors with other types of bearing technology. FFCC plays a key role as a partner to the worlds leading companies. Since 2025 FFCC has been IATF 16949 certified, which is the basis for delivery in larger series.



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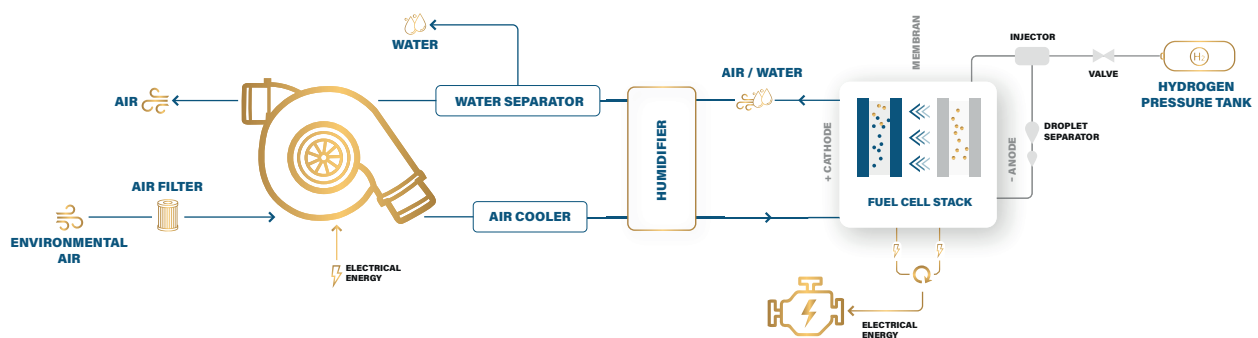
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FUEL CELL SYSTEM TECHNOLOGY

SYSTEM OVERVIEW

In addition to the fuel cell stack and the hydrogen tanks, the electric air compressor is a key component in the entire fuel cell system. The compressor operates the required amount of oil & particle free air at the desired pressure through the layers (individual layers in the stack) so that the reaction between the hydrogen (H₂) and the oxygen (O₂) can take place in the correct ratio. The electric motor of the air compressor represents the highest parasitic load within the fuel cell system. Therefore, highest efficiency of the air compressor is the key factor for the overall system.



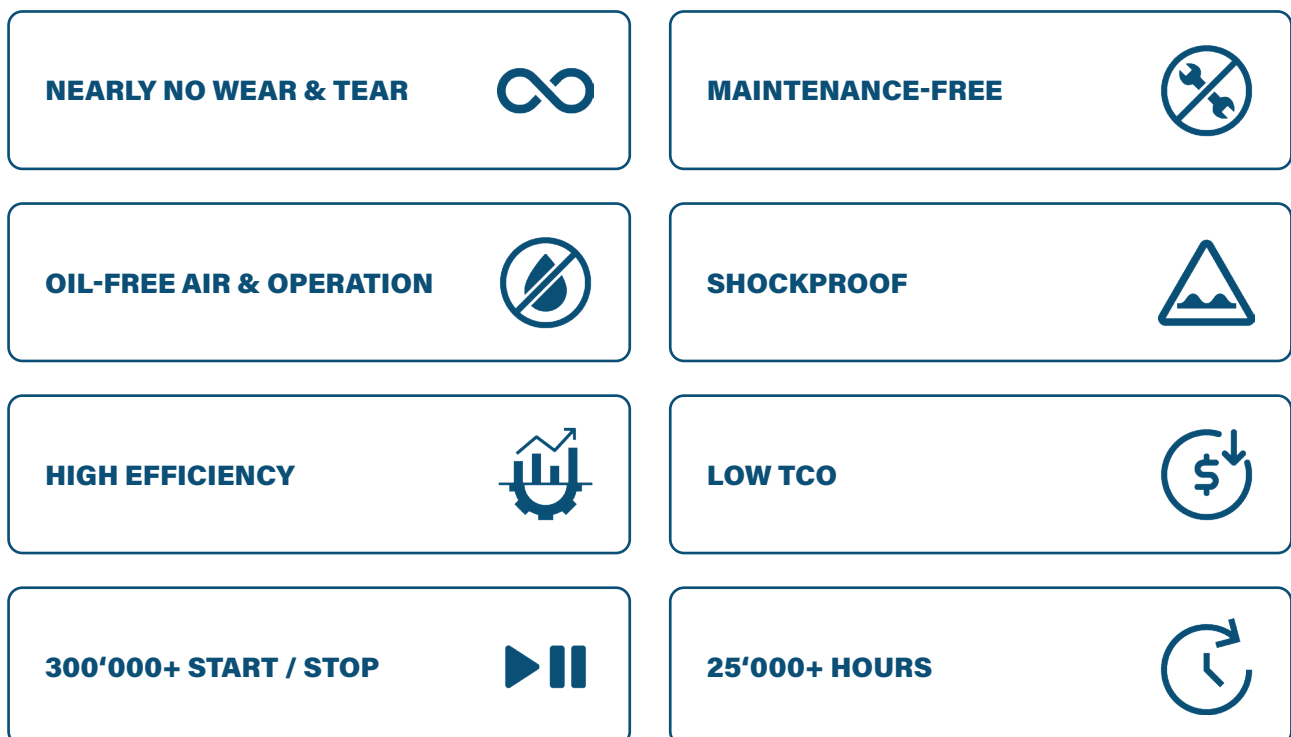
MARKETS

FROM FOSSIL FUELS TO SUSTAINABLE ENERGY OPTIONS



ADVANTAGES

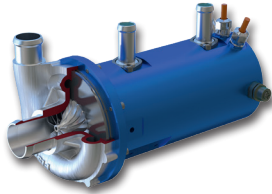
WE OFFER TAILOR-MADE SOLUTIONS



PRODUCTS

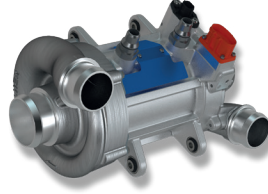
CUTTING-EDGE TECHNOLOGY

150K



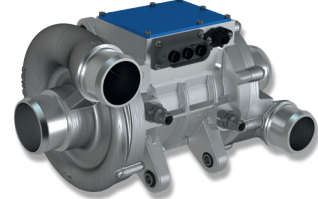
30 - 70 kW Fuel Cell

120K



70 - 200 kW Fuel Cell

90K

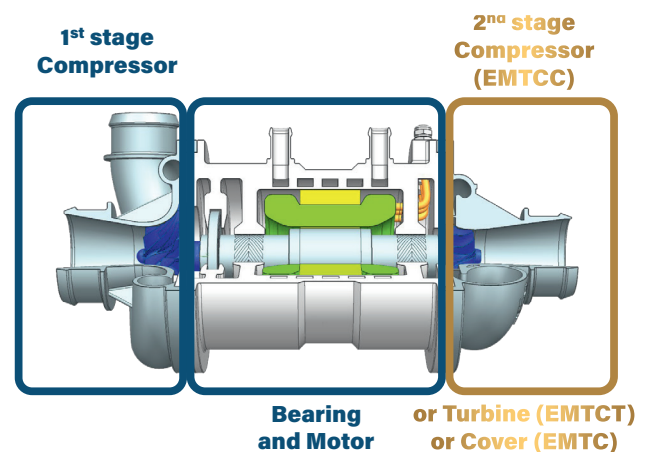
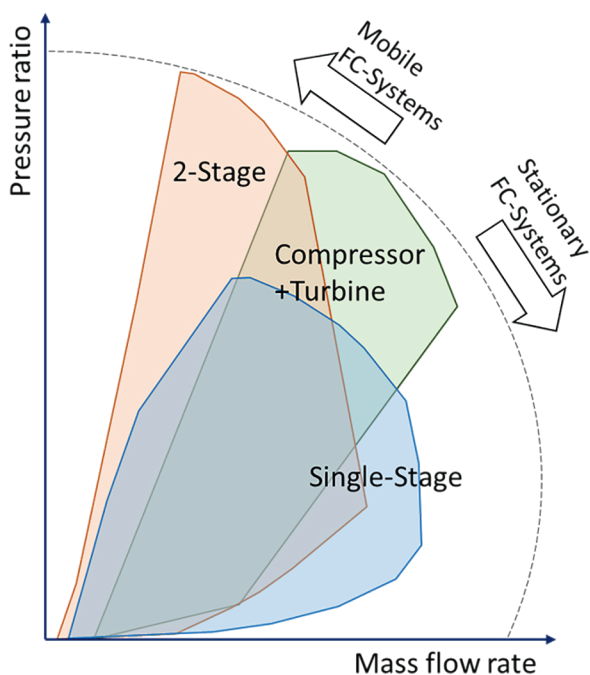


150 - 300 kW Fuel Cell

- Serial tool falling
- IATF certified processes
- Industrialised production
- In-house production of high precision components

MODULAR PLATFORM CONCEPT

PRECISION. SPEED. POWER.

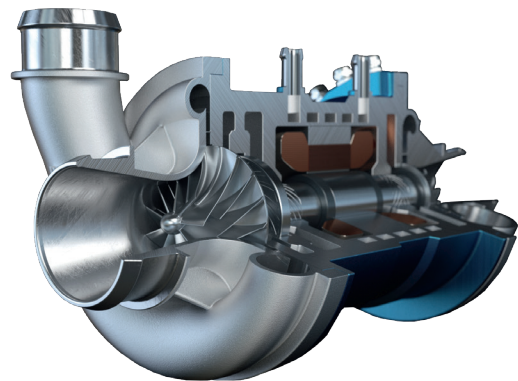
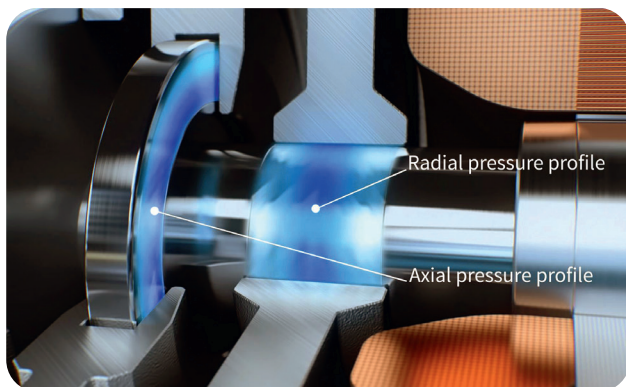


- Base model:** Single Stage compressor (EMTC)
- Option 1:** Add 2nd-Stage compressor (EMTCC)
- Option 2:** Add expander (EMTCT)

SPIRAL GROOVE BEARING

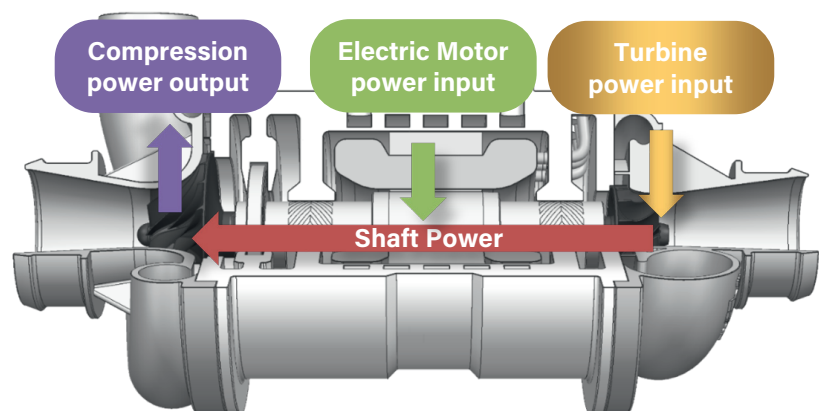
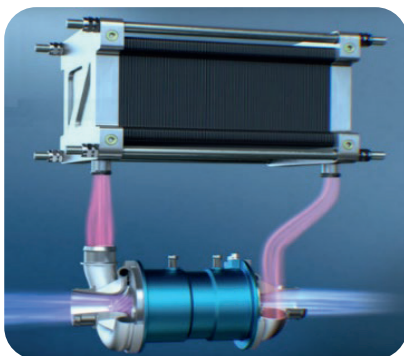
PATENTED TECHNOLOGY BY FISCHER

For our compressors we use spiral groove bearings, which ensure crucial advantages for the operation of rotary systems with high speeds. Even at low speeds, an air film builds up between the shaft and the bearing - the shaft rotates stably and without contact. This enables virtually wear-free, efficient as well as long-lasting operation of the compressor.



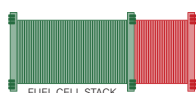
TURBINE TECHNOLOGY

HIGHER SYSTEM POWER OR SMALLER STACK



Smaller Stack for the same System Power P_{NET}
 → Lower vehicle **TCO** due to ...

Smaller Stack = lower investment costs (**CAPEX**)



Less input power = lower fuel consumption (**OPEX**)



Higher System Power P_{NET} with the same Stack
 → More Power available for ...

Propulsion



Auxiliary load

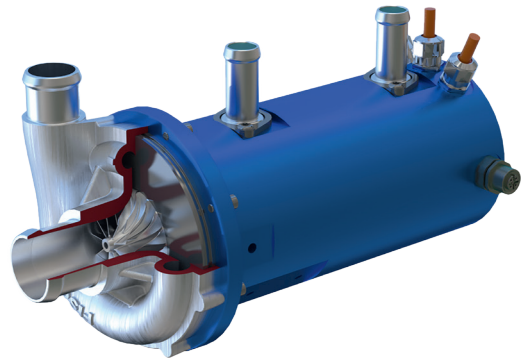


EMTC-150K

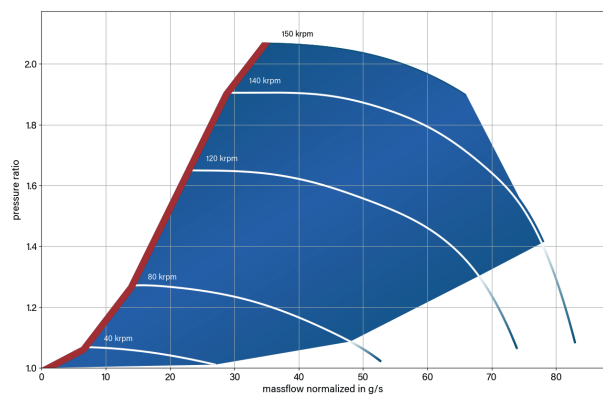
COMPACT AND RELIABLE

The 150k platform has proven its reliability and efficiency of cathode ventilation in many fuel cells between 30-70KW! Also this compressor system is based on the proven and patented technology of the FISCHER Fuel Cell Compressor AG. The result of the consequent continued development can be seen in:

- Series tool components designed for large quantities
- Consequent design-to-cost approach
- Higher robustness
- Increased lifetime
- Significant increase in performance
- Improvement of efficiency



Structure Version	EMTC
Medium	Filtered Air
Bearing	Aerodynamic Spiral Groove Bearing
Air Supply Bearing	Bearing cooling not necessary
Motor	Synchronous Electric Motor
Continuous Motor Power	5.7kW
IP Class	IP67
High Voltage Supply (Full Power)	400-750VDC
Low Voltage Supply	9-32VDC
Speed Range	20'000-150'000rpm
Acceleration (t90 Time)	4.0s
Inlet Air Temperature	-30 to 50°C
Inlet Air Pressure	0.70 to 1.10 bara
Cooling Mode	Water/Glycol: 50/50%
Cooling Temperature	-30 to 65°C
Coolant Volume Flow	4 l/min
Compressor Weight	<6kg
Dimension	Ø137mm, Length 260mm
Inverter	SiC Technology
Communication	CAN 2.0B



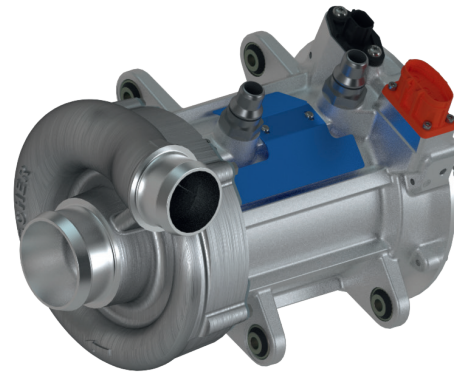
An aerodynamic adaptation according to your operating points is possible. Please get in touch with us!

EMTC-120K GEN4

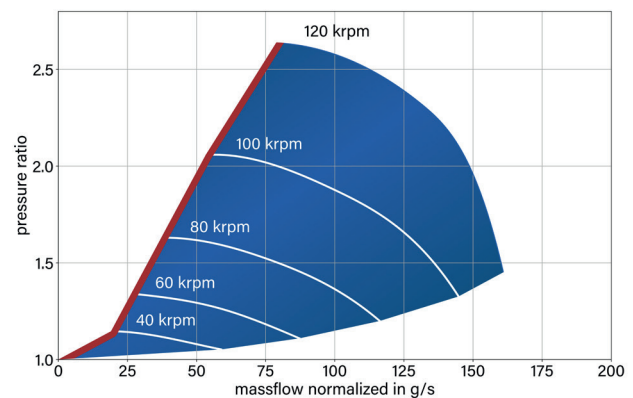
FLEXIBLE AND INNOVATIVE

The Generation 4 of our 120k platform is the step into the the future for reliable and efficient cathode ventilation for fuel cells 80-150KW! Also this compressor system is based on the proven and patented technology of the FISCHER Fuel Cell Compressor AG. The result of the consequent continued development can be seen in:

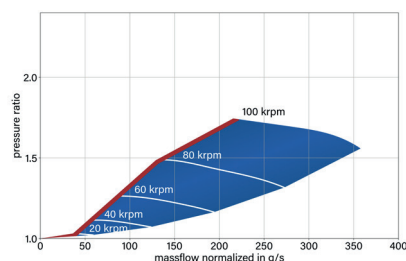
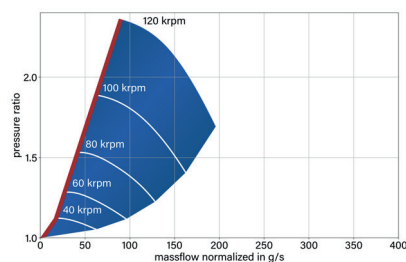
- Series tool components designed for large quantities
- Consequent design-to-cost approach
- Higher robustness
- Increased lifetime
- Significant increase in performance
- Improvement of efficiency



Structure Version	EMTC
Medium	Filtered Air
Bearing	Aerodynamic Spiral Groove Bearing
Air Supply Bearing	Bearing cooling not necessary
Motor	Synchronous Electric Motor
Continuous Motor Power	22.5kW
IP Class	IP6k9k/IP67
High Voltage Supply (Full Power)	400-750VDC
Low Voltage Supply	9-32VDC
Speed Range	20'000-120'000rpm
Acceleration (t90 Time)	2.0s
Inlet Air Temperature	-40 to 50°C
Inlet Air Pressure	0.60 to 1.10 bara
Cooling Mode	Water/Glycol: 50/50%
Cooling Temperature	-30 to 65°C
Coolant Volume Flow	8 l/min
Compressor Weight	<11kg
Dimension	ø213mm, Length 370mm
Inverter	SiC Technology
Communication	CAN 2.0B



Please review more available compressor maps below. An aerodynamic adaptation according to your operating points is possible. Please get in touch with us!

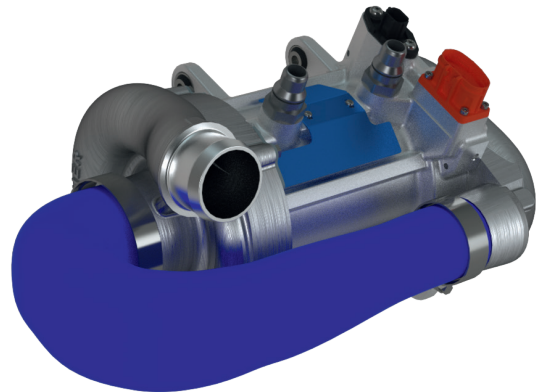


EMTCC-120K GEN4

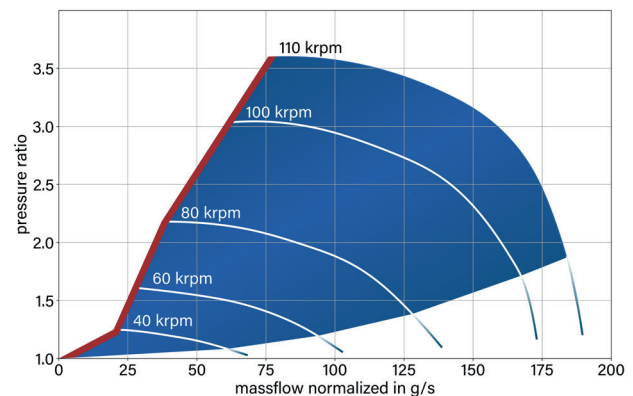
STRONG AND COMPACT

The Generation 4 of our 120k platform is the step into the the future for reliable and efficient cathode ventilation for fuel cells 80-150KW! Also this compressor system is based on the proven and patented technology of the FISCHER Fuel Cell Compressor AG. The result of the consequent continued development can be seen in:

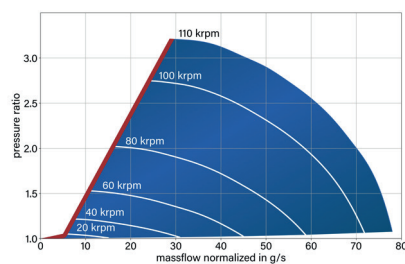
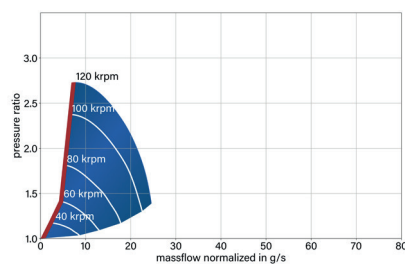
- Series tool components designed for large quantities
- Consequent design-to-cost approach
- Higher robustness
- Increased lifetime
- Significant increase in performance
- Improvement of efficiency



Structure Version	EMTCC
Medium	Filtered Air
Bearing	Aerodynamic Spiral Groove Bearing
Air Supply Bearing	Bearing cooling not necessary
Motor	Synchronous Electric Motor
Continuous Motor Power	26kW
IP Class	IP6K9k/IP67
High Voltage Supply (Full Power)	400-750VDC
Low Voltage Supply	9-32VDC
Speed Range	20'000-120'000rpm
Acceleration (t90 Time)	2.0s
Inlet Air Temperature	-40 to 50°C
Inlet Air Pressure	0.60 to 1.10 bara
Cooling Mode	Water/Glycol: 50/50%
Cooling Temperature	-30 to 65°C
Coolant Volume Flow	8 l/min
Compressor Weight	<11kg
Dimension	ø213mm, Length 370mm
Inverter	SiC Technology
Communication	CAN 2.0B



Please review more available compressor maps below. An aerodynamic adaptation according to your operating points is possible. Please get in touch with us!

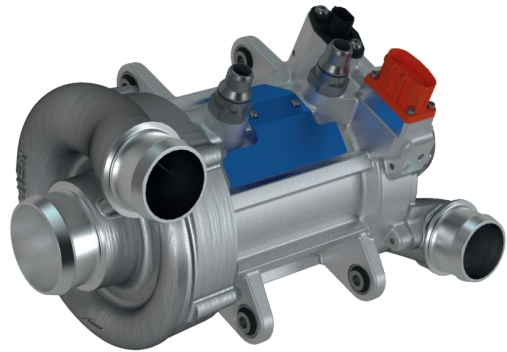


EMTCT-120K GEN4

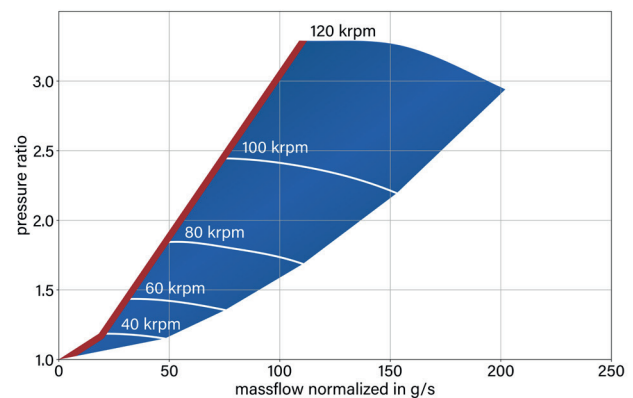
HIGH EFFICIENT AND ROBUST

The Generation 4 of our 120k platform is the step into the the future for reliable and efficient cathode ventilation for fuel cells 80-150KW! Also this compressor system is based on the proven and patented technology of the FISCHER Fuel Cell Compressor AG. The result of the consequent continued development can be seen in:

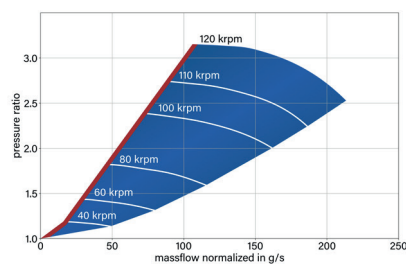
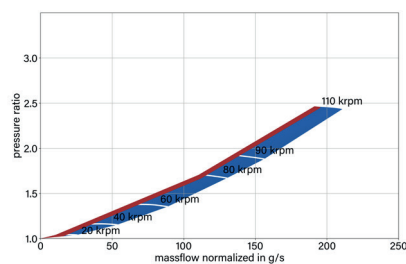
- Series tool components designed for large quantities
- Consequent design-to-cost approach
- Higher robustness
- Increased lifetime
- Significant increase in performance
- Improvement of efficiency



Structure Version	EMTCT
Medium	Filtered Air
Bearing	Aerodynamic Spiral Groove Bearing
Air Supply Bearing	Bearing cooling not necessary
Motor	Synchronous Electric Motor
Continuous Motor Power	22.5kW
IP Class	IP6k9k/IP67
High Voltage Supply (Full Power)	400-750VDC
Low Voltage Supply	9-32VDC
Speed Range	20'000-120'000rpm
Acceleration (t90 Time)	2.0s
Inlet Air Temperature	-40 to 50°C
Inlet Air Pressure	0.60 to 1.10 bara
Cooling Mode	Water/Glycol: 50/50%
Cooling Temperature	-30 to 65°C
Coolant Volume Flow	8 l/min
Compressor Weight	<11kg
Dimension	ø213mm, Length 370mm
Inverter	SiC Technology
Communication	CAN 2.0B



Please review more available compressor maps below. An aerodynamic adaptation according to your operating points is possible. Please get in touch with us!

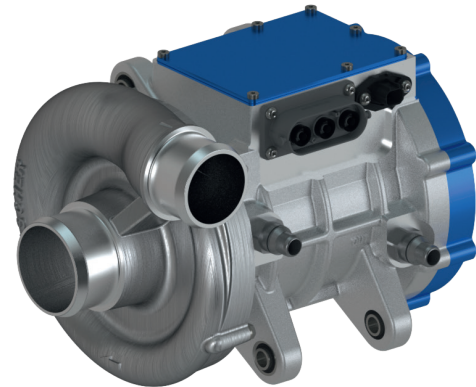


EMTC-90K GEN5

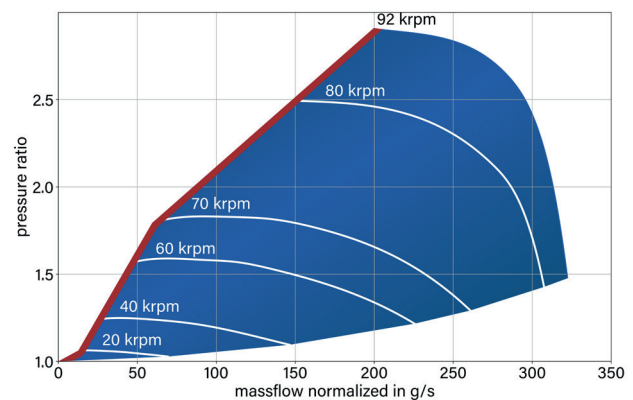
FLEXIBLE AND INNOVATIVE

The Generation 5 of our 90k platform is the step into the the future for reliable and efficient cathode ventilation for fuel cells 150-300KW! Also this compressor system is based on the proven and patented technology of the FISCHER Fuel Cell Compressor AG. The result of the consequent continued development can be seen in:

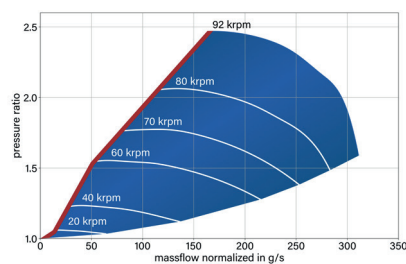
- In railway operation
- Series tool components designed for large quantities
- Consequent design-to-cost approach
- Higher robustness
- Increased lifetime
- Significant increase in performance
- Improvement of efficiency



Structure Version	EMTC
Medium	Filtered Air
Bearing	Aerodynamic Spiral Groove Bearing
Air Supply Bearing	Bearing cooling not necessary
Motor	Synchronous Electric Motor
Continuous Motor Power	38kW
IP Class	IP6k9k/IP67
High Voltage Supply (Full Power)	450-750VDC
Low Voltage Supply	9-32VDC
Speed Range	20'000-92'000rpm
Acceleration (t90 Time)	3.5s
Inlet Air Temperature	-40 to 50°C
Inlet Air Pressure	0.60 to 1.10 bara
Cooling Mode	Water/Glycol: 50/50%
Cooling Temperature	-30 to 70°C
Coolant Volume Flow	8-12 l/min
Compressor Weight	<18.5kg
Dimension	ø260mm, Length 392mm
Inverter	SiC Technology
Communication	CAN 2.0B



Please review more available compressor maps below. An aerodynamic adaptation according to your operating points is possible. Please get in touch with us!

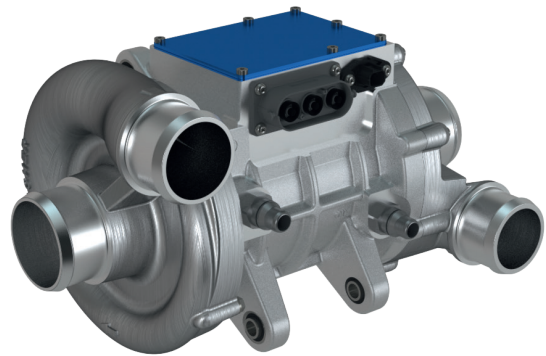


EMTCT-90K GEN5

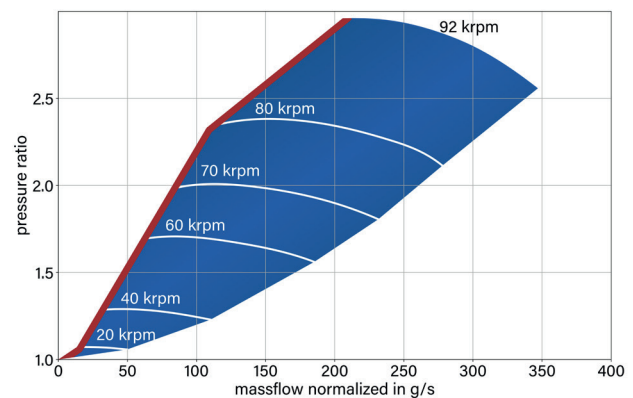
HIGH EFFICIENT AND ROBUST

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Structure Version	EMTCT
Medium	Filtered Air
Bearing	Aerodynamic Spiral Groove Bearing
Air Supply Bearing	Bearing cooling not necessary
Motor	Synchronous Electric Motor
Continuous Motor Power	38kW
IP Class	IP6k9k/IP67
High Voltage Supply (Full Power)	450-750VDC
Low Voltage Supply	9-32VDC
Speed Range	20'000-92'000rpm
Acceleration (t90 Time)	3.5s
Inlet Air Temperature	-40 to 50°C
Inlet Air Pressure	0.60 to 1.10 bara
Cooling Mode	Water/Glycol: 50/50%
Cooling Temperature	-30 to 70°C
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Compressor Weight	<18.5kg
Dimension	ø260mm, Length 392mm
Inverter	SiC Technology
Communication	CAN 2.0B



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Precision.



Speed.



Power.

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