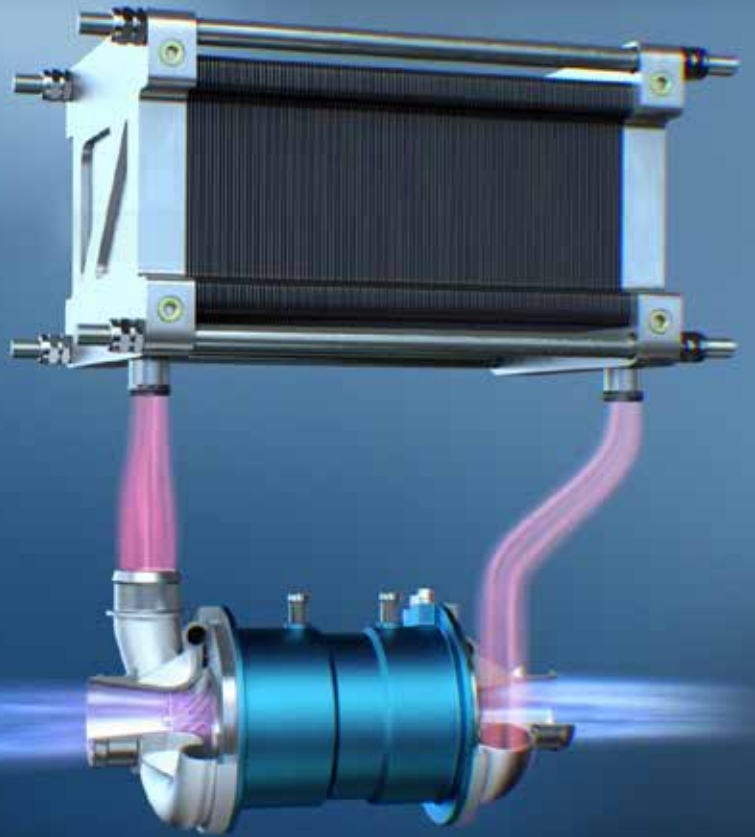


ELECTRIC TURBO COMPRESSORS

PRECISION. SPEED. POWER.



FUEL CELL AIR SUPPLY



Precision.



Speed.



Power.

HIGHEST PERFORMANCE

CORE COMPETENCE

We are setting gaseous media in motion. Our turbo compressors impress as a result of providing maximum power with a compact design. They compress and accelerate mass flows in a particularly efficient way. The technology behind these compressors is based on our years of experience in precision rotation. Well-engineered electric drives take the optimised compressor wheels to maximum speeds. The compressors feature aerodynamically optimised gas bearings. As a result, they operate with virtually no wear and achieve a very long service life. The conveyed media is not contaminated as this forms the bearing medium itself. Our models with an auxiliary turbine for energy recuperation achieve the highest level of efficiency.

Turbo compressors from FISCHER also ensure innovative, environmentally friendly transportation: thanks to maximum power density and adjustable mass flows, our compressors enable the efficient operation of fuel cells.

CUSTOMIZED ADAPTIONS

STANDARD



High-speed compressors from 80'000 rpm to 500'000 rpm

SPECIFICATIONS

Cutting-edge technology in rotation combined to create a high-tech product: our turbo compressors. They impress on account of their optimum true running accuracy, which results in maximum efficiency with maintenance-free, quiet operation. The model with an auxiliary turbine for energy recuperation further enhances the degree of efficiency.

Our standard series of turbo compressors can be used for various applications. All designs are based on a common platform concept, which means that we can configure the models in a modular manner to meet the respective pressure or mass flow requirements.

Above all, our experts focus on individual customer requirements. We collaborate closely with users to adapt turbines and compressors to their respective needs. Our end-to-end concept for gas bearings and a combined compressor-drive design is proving particularly beneficial as it means that all individually designed turbo compressors offer the outstanding technical and economic advantages of our tried-and-tested standard range.

Compressor standard

MODEL		EMTC-150k Air	EMTC-120k Air	EMTCT-120k Air	EMTCC-120k Air	EMTC-90k Air	EMTCT-90k Air
Design		Compressor	Compressor	Compressor + turbine	Two-stage Compressor	Compressor	Compressor + turbine
Shaft bearing type		Aerodynamic gas bearing	Aerodynamic gas bearing	Aerodynamic gas bearing	Aerodynamic gas bearing	Aerodynamic gas bearing	Aerodynamic gas bearing
Continuous output	[kW]	5.3	15	15	15	26.5	26.5
Max. coolant temperature		65°C @ 4 l/min.	65°C @ 6 l/min.	65°C @ 6 l/min.	30° C @7 l/min	60° C @10 l/min	60° C @10 l/min
Maximum speed	[rpm]	150'000	120'000	120'000	120'000	90'000	90'000
Max. pressure ratio		2.05	2.5	3.0	4.5	2.4	2.9
Max. mass flow (air)	[g/s]	77	165	145	45	200	200
Maximum efficiency level		> 70 % (Compressor)	> 70 % (Compressor)	> 70 % (Compressor) > 80 % (turbine)	> 70 % (Compressor)	> 70 % (Compressor)	> 70 % (Compressor) > 80 % (turbine)
Length	[mm]	262	280	355	355	352	426
Maximum turbine output	[kW]	-	-	6	-	-	10
Motor housing diameter	[mm]	86	120	120	120	155	155
Weight	[kg]	5	8	8.5	8.5	16	15.5
Operating voltage	V DC	100-600	200-600	200-600	200-600	200-600	200-600
HV3 Operating voltage	V DC	520-750	520-750	520-750	520-750	520-750	520-750

The listed values are not necessarily possible in all combinations.

Our experts have created additional turbo compressors with specific and unique features and aerodynamic characteristics for special applications. Upon request, we will be happy to plan optimised versions of our high-quality turbo compressors in line with your requirements.

Our product designations are composed as follows:

EMTC: Electric Micro Turbo Compressor

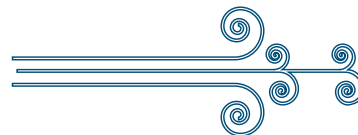
EMTCT: Electric Micro Turbo Compressor with turbine for energy recovery

EMTCC: Electric Micro Turbo Compressor with two compressor stages (parallel or serial)

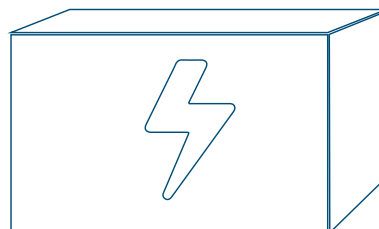


Precision. Speed. Power.

EXAMPLE APPLICATION

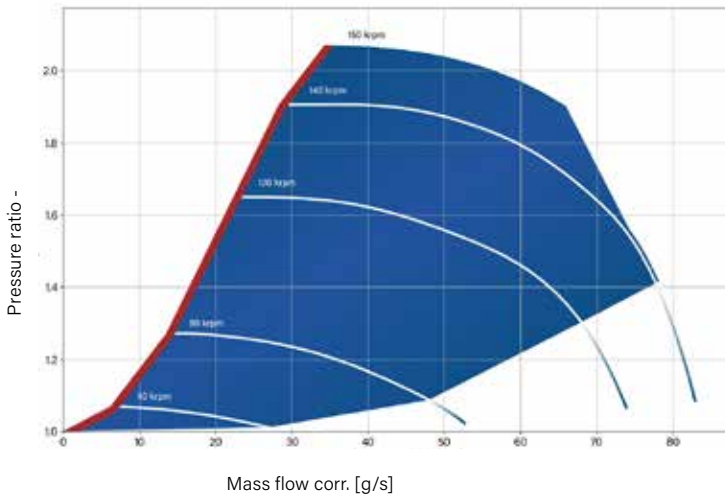


**FUEL CELL
CATHODE AIR
SUPPLY**

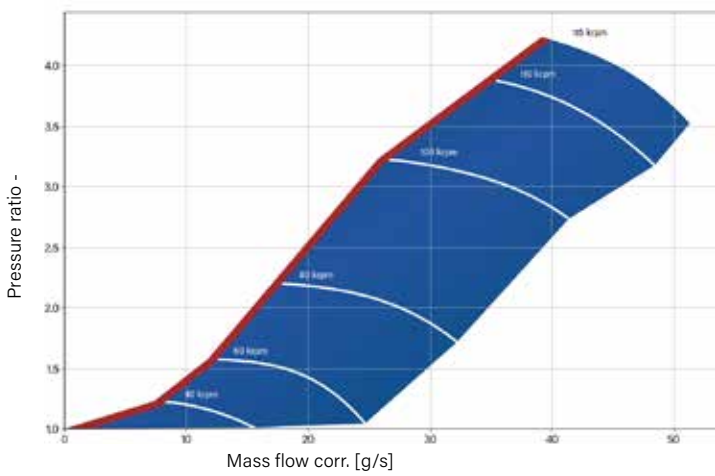


GRID MAP AND APPLICATIONS

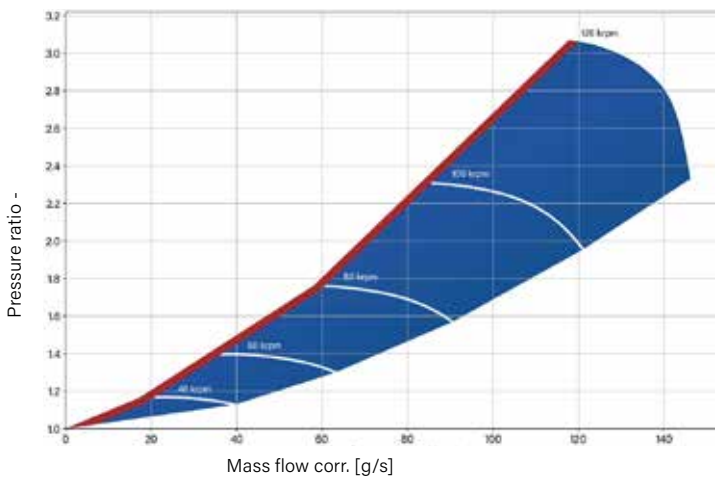
EMTC-150K AIR



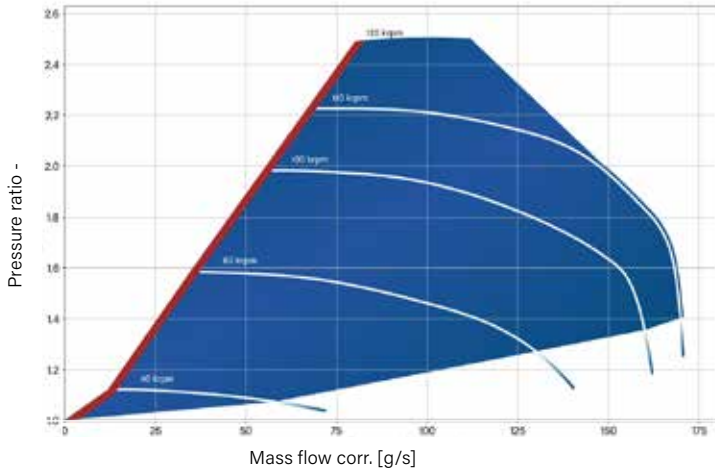
EMTCC-120K AIR



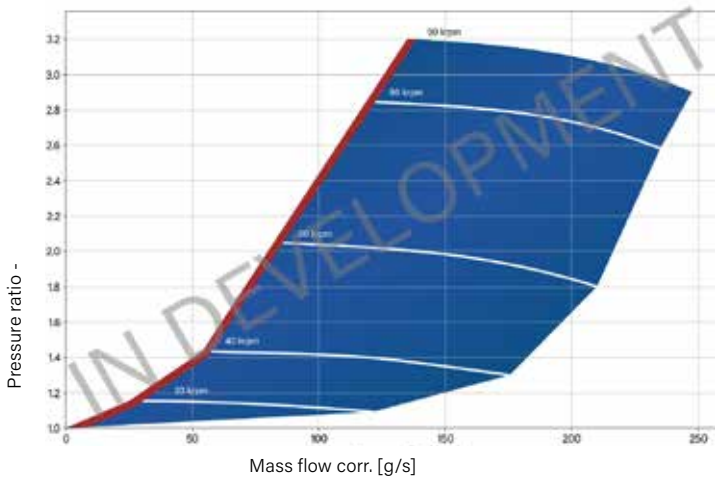
EMTCT-120K AIR



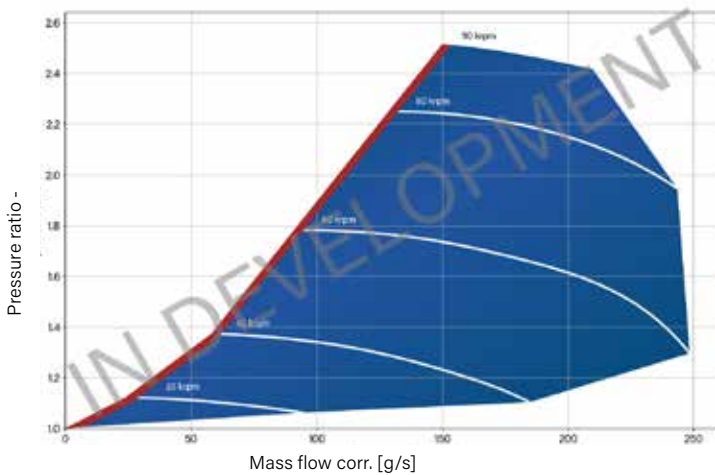
EMTC-120K AIR



EMTCT-90K AIR



EMTC-90K AIR



Each compressor type can have different characteristic map grids according to aerodynamic components and adaptation. Only examples are given in the brochure. Diagrams shown in brochure are for reference only. As part of each actual project we will provide a specific and binding diagram together with our commercial proposal.





NEARLY NO WEAR

START-STOP BEHAVIOR



NO EXTERNAL AIR SUPPLY

AERODYNAMIC GAS BEARING



COMPLETELY OIL-FREE

SHAFT IS FREE STANDING IN AIR





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