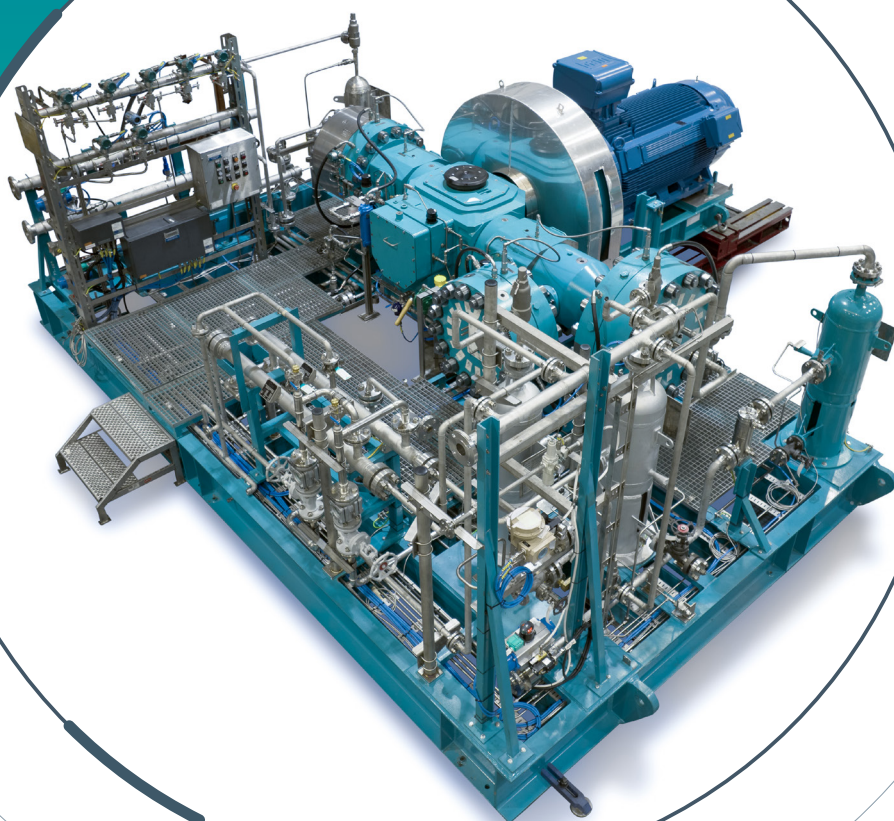


TFC90 / TFC180 Diaphragm Compressor

Turnkey Package Solutions for
Hydrogen Applications



Howden's TFC90 and TFC180 are standardized diaphragm compressor packages specifically designed for hydrogen applications. **These skid-mounted compressors include all process equipment, piping and auxiliary systems in a single package providing a reliable, scalable, and cost-effective solution while also facilitating fast on-site deployment.**

Howden's proven diaphragm compression technology has safely and reliably served high-pressure gas storage and bottling needs for decades and is at the heart of each TFC90 and TFC180 package. Diaphragm compression is the preferred technology for applications that require high discharge pressures and large pressure differentials. Additionally, this technology prevents any gas contamination within a sealed compression chamber, making it ideal for applications requiring high levels of gas purity, such as refueling applications for fuel cell electric vehicles.

Key Features:

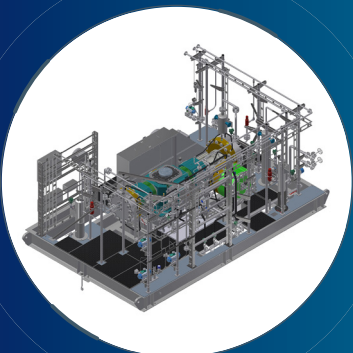
- Designed for 5 MW and 10 MW electrolyzer modules
- Absolute cleanliness of compressed hydrogen
- No leakage – 0% leakage of process gas to the environment
- Proven performance and guaranteed high reliability

Benefits:

- Compact, skid-mounted turnkey solution for quick installation and deployment
- Standard design for a cost-effective solution and fast lead times
- Howden Uptime digital solutions provide predictive maintenance insights, reducing both scheduled and unscheduled downtime
- Comprehensive maintenance service program
- Local support and service through our global service network

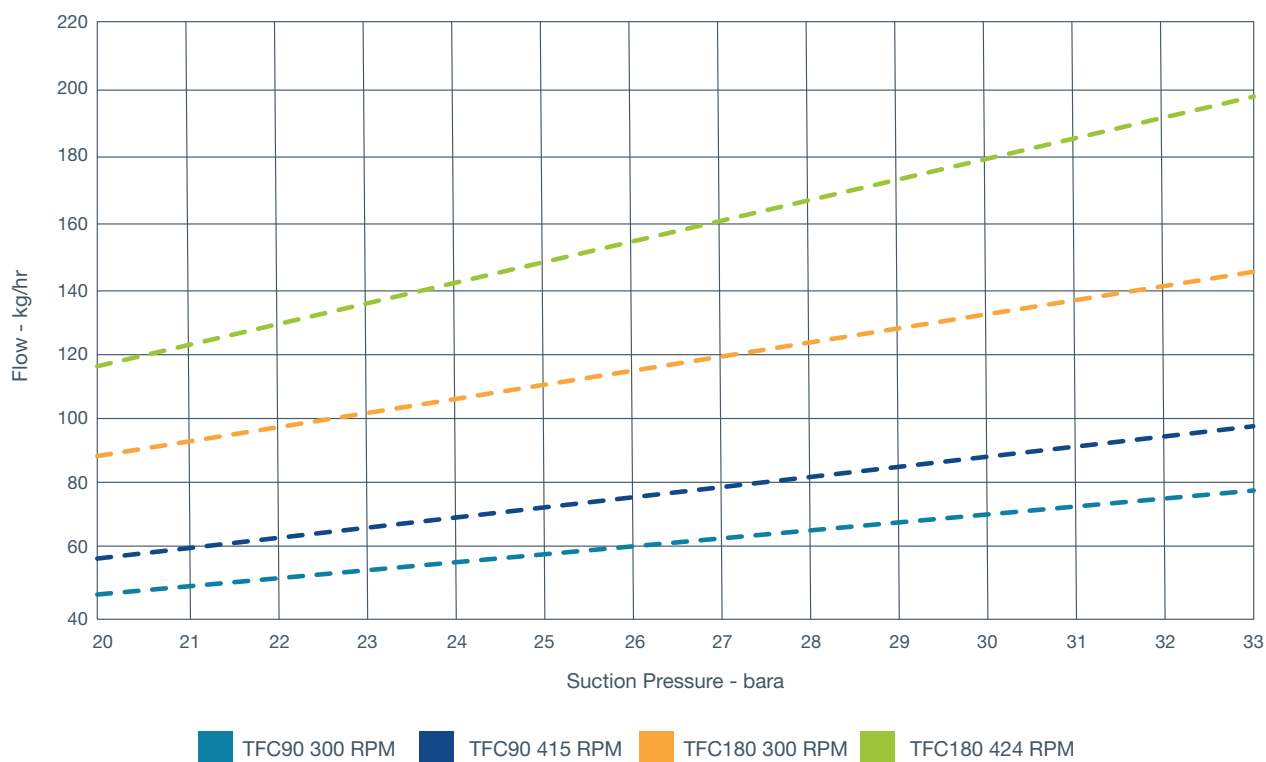
Typical Applications:

- Hydrogen production plants
- Hydrogen tube trailer filling
- Hydrogen storage
- Hydrogen refueling stations



Technical Data for Dry Hydrogen	TFC90	TFC180
Site conditions	Outdoor	
Ambient temperature (min/max) °C	-20 / +40	
Hazardous area	ATEX II 3G Zone 2 IIC T2	
Process parameters		
Suction pressure range (bara)	20 to 35	
Maximum discharge pressure (bara)	up to 550 (adjustable)	
Flow capacity (kg/hr)	90	180
Turndown capability	10 to 100%	
Discharge temperature (min/max) °C	5 / 40	
Suction temperature °C	50 to 60	
Electrical		
Absorbed power (kW)	160	295
Power supply	400V, 3ph, 50Hz	690V, 3ph, 50Hz
Operational		
MTBM (hr)	8400	
Availability	97%	
Max noise level (dBa)	85 @ 1m	
Emissions	No leakage to atmosphere	
Standards & compliance	CE Marked, Machinery Directive 2006/42/EU, EMC Directive 2014/30/EU, ATEX Directive 2014/34/EU, LVD Directive 2014/35/EU, PED Directive 2014/68/EU	

Performance Envelopes



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