SpringTech
Fuel Cell Stack Straps
285

Reliable Connections

Recommended for the reliable and secure assembly of fuel cell stacks

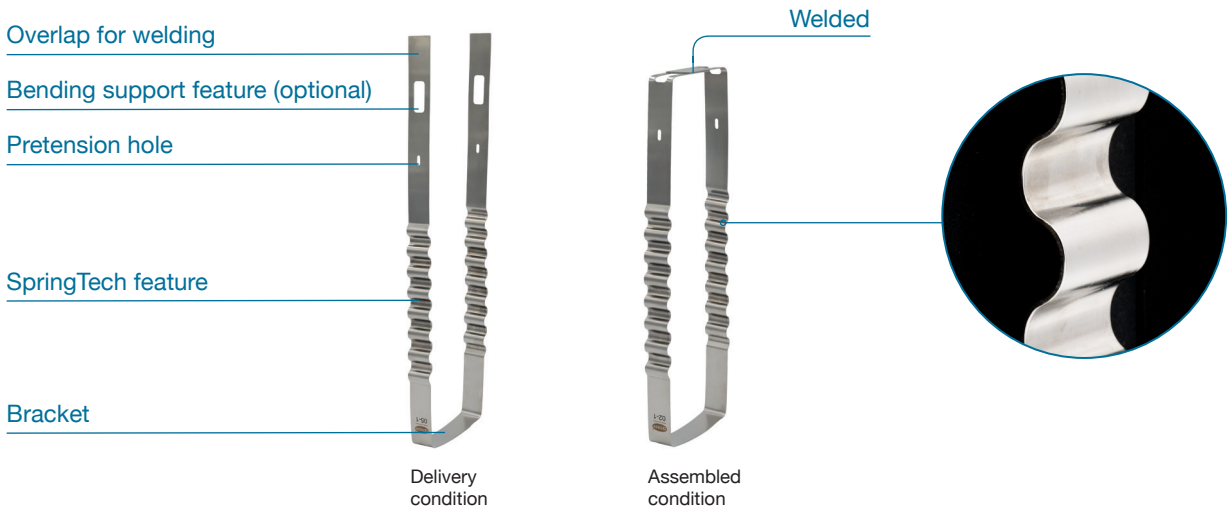
Benefits

- Reliable and secure fastening of fuel cell stacks
- Fuel cell stack height reduction
- Simplifying logistics and assembly efforts
- Easy to integrate into the existing fuel cell stack assembly process

SpringTech design: pressure compensation and holding functions in one
Minimum space consumption: supports maximum utilization of available space
Supporting fuel cell stack weight reduction: eliminating need for spring plate
Assembly-friendly: simplifying logistics and assembly efforts and easy to integrate into existing welding process
Engineered solution: to suit customer requirements

SpringTech

FEATURES



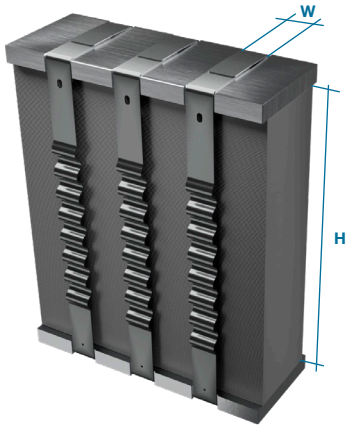
SpringTech Fuel Cell Stack Straps 285

TECHNICAL DATA OVERVIEW

Material	Standard/Grade
Stainless Steel	1.4310-2H C1300/EN 10151

SERIES

Size availability
Fuel cell stack height (H): min 200 mm
Band width (W): 20 – 40 mm
Band thickness: 1.5 mm



PRODUCT DESCRIPTION

Oetiker's SpringTech Fuel Cell Stack Strap 285 is an innovative solution, specifically designed for fuel cell stack assemblies requiring high durability and compensation to avoid leakage or over-pressure.

The function has been validated from -30 to +85°C.

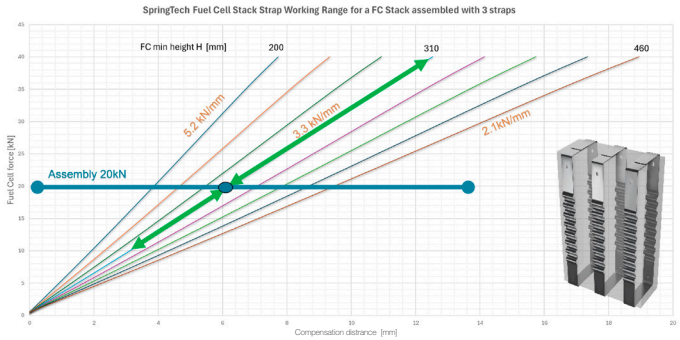
PRODUCT DESCRIPTION

Compensation waves
The design of the SpringTech feature is customized based on the force and displacement needed combined with the height of the fuel cell.

The graph visualizes the working range of force and displacement depending on fuel cell stack height for 3 connections.

The force that can be maintained within the fuel cell stack is directly proportional to the number of straps. Therefore, it can be adjusted by adding or removing straps.

SpringTech Fuel Cell Stack Strap Working Range for a fuel cell stack assembled with 3 straps



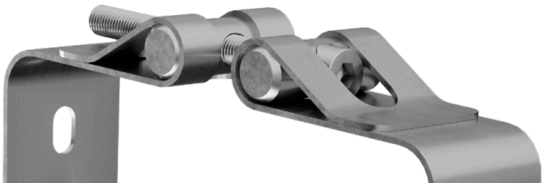
For example:
A 310mm high fuel cell stack assembled with 3 straps at 20kN load has an operating range of + 6mm, in which the force inside the stack increased to 40kN and - 3mm before the forces decreased to 10kN.

In this example the load of the fuel cell stack will change by 3.3kN per mm displacement. This spring rate can be adapted based on requirements, but the minimum is limited by the fuel cell stack height.

Insulation
If additional electrical insulation is needed, Oetiker offers a variety of materials to meet your requirements.

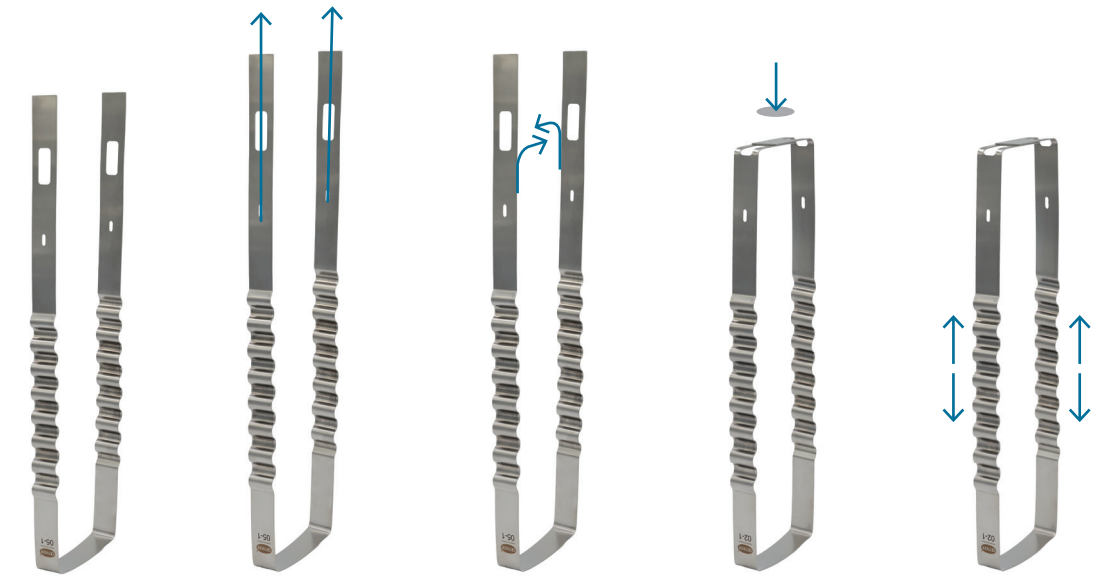
Bending support feature (optional)
“Windows” to streamline the bending process during final fuel cell stack assembly, facilitating the assembly and disassembly of the SpringTech Fuel Cell Stack Strap without compromising performance.

Assembly loop (optional)
To simplify prototype production the SpringTech Fuel Cell Stack Strap 285 is also available with loops, eliminating the need for welding.



ASSEMBLY

Oetiker's SpringTech Fuel Cell Stack Strap 285 is delivered ready to be installed with an assembly machine. Therefore, once the fuel cell stack is compressed to the required force, the U-shaped strap is tensioned, bended and welded. Designed to integrate seamlessly with industry-standard assembly processes.



Delivery state | Pretensioning | Bending | Welding | Ready for compensation