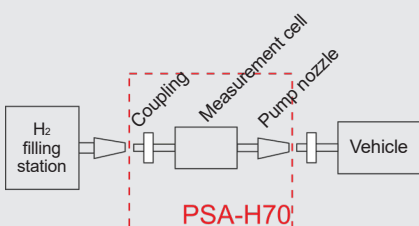




Particle collection device PSA-H70

H = hydrogen, 70 = 700 bar; 70 MPa

POSITIONING OF THE PSA (schematic diagram)



DESCRIPTION

The particle collection device (PSA-H70) for cars is used for the detection of solid fractions in hydrogen (H₂) at 700 bar H₂ filling stations.

In hydrogen-powered vehicles, the cleanliness and quality of the hydrogen is of great importance. As an expert in technical cleanliness, we have developed the world's first analysis equipment that can be used to verify and analyse the particulate impurities in the main flow – the HYDAC PSA-H70.

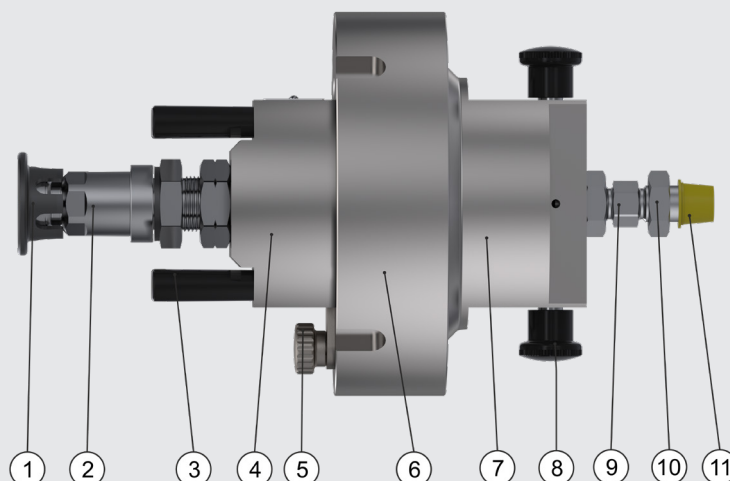
PRODUCT FEATURES

- Sampling device for cars specially developed for the H₂ filling station
- For use in the main flow and under full pressure
- Thanks to the external evaluation (at HYDAC, for example), the hydrogen quality can be checked independently
- Hydrogen-compatible PTFE filter membranes standardised for sampling
- Automatic pressure relief of filling equipment after sampling
- Filtration directly at filling point

CUSTOMER BENEFITS

- The H₂ filling station can be operated in normal mode during sampling – no special mode is needed
- Straightforward handling and rapid sampling on-site
- Fast quantitative and qualitative evaluation in the lab (HYDAC)
- Assured cleanliness and quality of the hydrogen
- Sampling for subsequent particle analysis acc. to ASTM D7651

DESIGN MEASUREMENT CELL



Item	Description
(1)	Protective cap, tank connector
(2)	Tank connector
(3)	Carrying handles
(4)	Upper casing half
(5)	Knurled-head screw with locking plate
(6)	Union nut
(7)	Lower casing half
(8)	Upper casing half
(9)	Detent pin
(10)	Adapter (high pressure hose connection)
(11)	Protective cap, adapter

FUNCTION

The filtration takes place directly at the filling point. The filling station's filling hose is attached to the measurement cell directly. An additional high-pressure hose is connected to the fuel cell vehicle. Once all connections have been checked for leaktightness, the fuelling of the vehicle is commenced. Particulate contamination is retained by a filter membrane inside the measurement cell, which makes it possible to characterise an entire fuelling procedure. The measurement cell is only opened once it is in the lab. In this process, the measurement equipment is analysed and the cleanliness is assessed.

TECHNICAL DETAILS

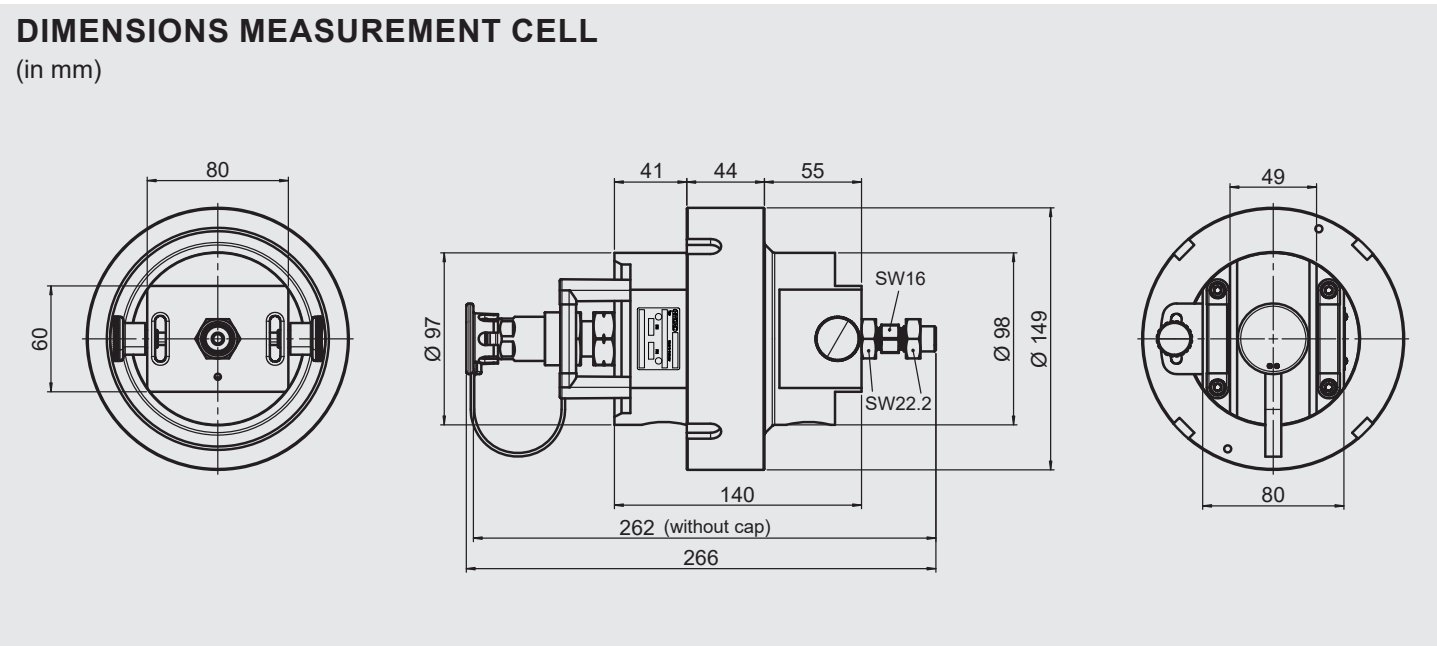
Connection, inlet site	Tank connector TN1
Connection, outlet side	Fuelling nozzle TK17
Fluid	Hydrogen H ₂ (gas)
Mounting position	Vertical
Weight	approx. 18 kg
Nominal size	DN 05
Nominal pressure	PN 700
Max. operating pressure	PS 875
Temperature range for complete PSA-H70 (including measurement cell, hose and fuelling nozzle):	
Temperature of medium	-40 °C to +65 °C
Ambient temperature	0 °C to +65 °C
Temperature range for measurement cell:	
Temperature of medium	-40 °C to +85 °C
Ambient temperature	0 °C to +85 °C
Filtration rating	5 µm
Material	All pressure-bearing metallic parts made from high-quality austenitic stainless steel

CAUTION

The temperature of the measurement cell itself must not be below 0 °C when fuelling begins. This means that fuelling can take place at an ambient temperature of up to -40 °C if the temperature of the measurement cell itself is not below 0 °C!

NOTICE

100% series testing to DIN EN12266. The documentation of the series testing and traceability of the load-bearing parts (HPZ M3.1) is attached to each delivery. The conditioning of the measurement equipment and analysis of the samples can be performed by HYDAC central sales (service).



CORE PRODUCT

	Description	Order no. = part no.
	Starter kit: • Measurement cell in aluminium case With preconditioning • Tool case Fuelling nozzle Hose Tools/equipment Plug-in table	4242562
	Measurement cell in aluminium case • With preconditioning	4455283
	Tool case • Fuelling nozzle • Hose • Tools/equipment • Plug-in table	4241588

NOTICE

The PSA has replacement cycles of 10,000 fuelling cycles.

Please contact Technical Sales for a more detailed list of equipment components.

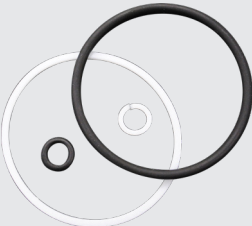
ACCESSORIES

	Description	Replacement cycle in years	Order no. = part no.
	Tool case • Tools/equipment • Wearing parts Fuelling nozzle	• As necessary	4242556
	Hose • Including hose breakage protection	• After max. 2 years of use after delivery date • In case of non-use during period of more than 12 months, the separate hose must undergo a new pressure test before use.	6109266
	Fuelling nozzle • Including attachment for hose breakage protection	• Must be serviced by the manufacturer after a period of 3 years	3736750

ACCESSORIES

	Description	Replacement cycle in years	Order no. = part no.
	Case for measurement cell made from aluminium • Including accessories	• As necessary	3732906
	Plug-in table	• As necessary	4253251

WEARING PARTS

	Description	Replacement cycle in years	Order no. = part no.
	Replacement kit for the filter • Sintered metal disc including cleaning + container	• After each sampling	4039548
	O-ring PTFE • O-ring PTFE 1 piece required!	• After each sampling	6114803
	Seal kit • O-ring + support rings, housing • O-rings + support rings, pendant tube	• As needed, but at least every 3 years	4240581
	Sintered metal disc • Sintered metal disc 1 piece required!	• As necessary	3642697

NOTE

The information in this brochure relates to the operating conditions and applications described.

For applications and/or operating conditions not described please contact the relevant technical department.

The operator is always responsible for determining the product suitability for the specific application. Quantified values for product characteristics are average values for a new product that undergo a time deterioration process.

Subject to technical modifications and errors.

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