WEH® H_2 REFUELING

High-performance components for hydrogen vehicles and fueling stations

ORIGINAL WEH® QUALITY since 1973

WEH® - We Engineer Hightech

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WEH® 70 MPa Technology: TK17 H_2 70 MPa fueling nozzle with filling hose and TSA1 H_2 70 MPa breakaway coupling incl. dispenser mounting

Introduction

A VISION FOR A GLOBAL CHALLENGE

With great foresight for a future global challenge, WEH Gas Technology has been a pioneer in the field of alternative fuels since 1986. The aim was to develop their own H_2 fueling system with maximum safety and outstanding functionality. For acceptability reasons the system should give the operator the 'feel' of a conventional refueling system despite the highly complex technology.

This is where WEH as a pioneer sets international standards. Today, hydrogen filling stations and fuel cell vehicles around the world are equipped almost exclusively with WEH® Fueling Components. Through intensive research and development, WEH has become a reliable and valued partner of the automotive industry in this cutting-edge technology.

In 2004, the California Fuel Cell Partnership has rewarded WEH's commitment with the „Incentive Award" for the Certification of the TK16 H_2 fueling nozzle. WEH has also contributed considerably to the EU-funded projects Clever, CUTE and StorHy. WEH has been committed in a number of projects worldwide promoting alternative drive systems thus also being an initiator for a mobile society with a future.

A complete range of products for H_2 refueling is available - from fueling nozzles, hoses, breakaway couplings and filters for fueling stations to receptacles and check valves in vehicles.
All components are protected by a patent and cover all applications for refueling cars, buses and trucks.
The well proven design, ease of operation, safety and reliability of all WEH® Products has led to widespread customer acceptance of alternative fuels and play a major part in the development of refueling systems for alternative fuels.

An advanced product for a high performance application
WEH®'s Hydrogen Product Line has been designed expressly for the demanding applications of high-pressure hydrogen refueling systems. All products suit the extreme flow and temperature conditions found in practical operation. Naturally all WEH® Products are constructed of high-quality materials. Throughout many years of experience and numerous tests special seal designs and sealing materials have been developed, which meet the demands of the medium and the application.

Test center
Modern, unique testing facilities ensure a comprehensive review of our products from the design phase to series production.

Unique WEH® Jaw locking mechanism
All fueling nozzles have the unique jaw locking mechanism developed by WEH. The jaw locking system is superior to ball locking systems in that it tolerates dirt and reduces wear on the receptacle of the vehicle.

Enhanced safety by integrating a dirt particle filter
Using an integrated particle filter avoids dirt ingress and therefore leakage from the receptacle which gives enhanced safety and reliability - essential features for the volatile nature of H_2 products.

Technically advanced safety features
Hydrogen refueling can be dangerous if unsuitable products are used. WEH® Products have a very high safety standard to reduce risk factors. Effective safety systems feature in all WEH® H_2 Products especially in the fueling nozzles and achieve the necessary safety standards for use at self-service fueling stations.

Overview

OVERVIEW FUELING NOZZLES / BREAKAWAY COUPLINGS

And their common uses:

Overview of fueling nozzles			
Type	**Page**	**Car**	**Bus/truck**
TK17 H_2 70 MPa	10	✓	
TK17 H_2 70 MPa ENR with exchangeable data interface	14	✓	
TK17 H_2 35 MPa	18	✓	
TK17 H_2 35 MPa ENR with exchangeable data interface	22	✓	
TK16 H_2	26	✓	
TK16 H_2 with data interface	30	✓	
TK16 H_2 High-Flow	64		✓
TK16 H_2 High-Flow with data interface	68		✓
TK25 H_2	72		✓

Overview of defueling nozzles		
Type	**Page**	**Discharging of H_2 fuel tanks – car**
TK6 H_2	102	✓

Overview of breakaway couplings					
Type	**Page**	**Car**	**Car - Inline**	**Bus/truck**	**Bus/truck - Inline**
TSA1 H_2 70 MPa	34	✓			
TSA1 H_2	38	✓		✓	
TSA2 H_2	44		✓		✓*
TSA5 H_2	76			✓	
TSA6 H_2	80				✓

* except TK16 H_2 / TK16 H_2 High-Flow fueling nozzles with data interface

OVERVIEW FILTERS

Overview of filters					
Type	**Page**	**Car**	**Bus/truck**	**Car fueling station**	**Bus/truck fueling station**
TSF2 H_2	92	✓	✓	✓	✓
TSF2 H_2 Coalescing	96	✓	✓	✓	✓
TSF4 H_2	98	✓	✓	✓	✓

Overview

OVERVIEW PRESSURE RANGE / CODING

All WEH® Fueling nozzles and receptacles have a coding for the gas type and the pressure range thus not allowing connection to natural gas vehicles and other pressure ranges. The following connection possibilities are given:

OVERVIEW	Receptacle	TN1 H_2	TN1 H_2 TN1 H_2 for IR*	TN1 H_2 High-Flow TN1 H_2 High-Flow for IR*	TN1 H_2 70 MPa TN1 H_2 70 MPa for IR*	TN5 H_2	TN5 H_2
Fueling nozzle	*Pressure PN*	*25 MPa*	*35 MPa*	*35 MPa*	*70 MPa*	*25 MPa*	*35 MPa*
TK16 H_2	*25 MPa*	✓	✓	✓	✓		
TK16 H_2 TK16 H_2 with IR*	*35 MPa*		✓	✓	✓		
TK16 H_2 High-Flow TK16 H_2 High-Flow with IR*	*35 MPa*			✓	✓		
TK17 H_2 35 MPa TK17 H_2 35 MPa ENR**	*35 MPa*		✓	✓	✓		
TK17 H_2 70 MPa TK17 H_2 70 MPa ENR**	*70 MPa*				✓		
TK25 H_2	*25 MPa*					✓	✓
TK25 H_2	*35 MPa*						✓

* IR = infrared data interface / ** ENR = exchangeable data interface

NATIONAL AND INTERNATIONAL PROJECTS

Today WEH is the world market leader for alternative fueling components and partner to the automotive industry. In addition, WEH is worldwide active in numerous projects for the promotion of the use of alternative methods of propulsion thus being an important driving force for a future-oriented mobile society.

Supplier for CUTE
(Clean Urban Transport for Europe – EU funded project, supported by the 5. Framework Programme of the EU).
Follow-up program: **CHIC**

NRW Project
Project partner for the development of the 70 MPa technology for vehicles and portable fuel cell systems funded by the state of North Rhine Westphalia

StorHy Project
Head of the working group WP4 funded by the EU - Development of hydrogen components for 70 MPa

Standards, approvals and memberships

CERTIFIED QUALITY MANAGEMENT

Our high quality standard is achieved by a living quality management and the certification according to international quality standards is confirmed.

ISO 9001:2015

INTERNATIONAL STANDARDS AND APPROVALS

The following overview shows the standards and approvals of WEH® Products. For detailed information see the respective product.

- Regulation (EC) No. 79/2009
- SAE J2600:2002
- SAE TIR 2799
- SAE J2601
- ATEX
- NEC Class 1 Zone 1
- KHKS 0220

* For reasons of precaution, we'd like to point out that
a) regarding the delivery of each article acc. to the respective order confirmation - in particular concerning ECE / EC79 articles - WEH does not confirm the fulfilment of additional requirements of the concerned end customer,
b) WEH is not subject to any external reporting obligation with regard to external change management (see page 116) and
c) WEH does not confirm the replacement of the product in the form of a regular series delivery.
Exclusions acc. to a) - c) can be agreed with the conclusion of a customer-specific project with corresponding special conditions.

MEMBERSHIPS

WEH Gas Technology is a member of the German Hydrogen and Fuel Cell Association.

Deutscher Wasserstoff- und Brennstoffzellen-Verband

Fueling nozzle **TK17 H_2 70 MPa**

DESCRIPTION

Features
- Type C nozzle acc. to SAE J2600:2002, paragraph 5.2
- Left or right single-handed operation
- Compatible with WEH® TN1 H_2 70 MPa Receptacle profile
- WEH® EASY-TURN 250° swivel joint
- Easy operation
- High flow rate ➞ short filling times
- Protecion against impact and cold
- Plastic thermal protection
- Hand grip with magnet
- WEH® Jaw locking mechanism
- High-grade materials
- Coding for pressure range / gas type

The WEH® TK17 H_2 70 MPa was developed for refueling cars with compressed hydrogen (CGH_2). The fueling nozzle with single-handed operation is just as quick and easy to use as the common petrol nozzle and has a similar look and feel. Simply lift the nozzle from the dispenser mounting and place it onto the vehicle's receptacle. 250° rotation makes for easy engagement with the vehicle's fuel receptacle. Compress the actuation lever until locking lever engages and the fueling procedure begins. The gaseous hydrogen can only flow through the line if there is a safe connection. After refueling disengage the nozzle's locking lever and disconnect. Please note that refueling may be stopped or paused at any time.
The hand grip has a magnet for actuation of the magnet switch for activation of the dispenser.
The internal coding for pressure range and gas type ensures that the WEH® TK17 H_2 70 MPa can be connected to the compatible WEH® Receptacles according to the opposite table and also prevents the risk of confusion with natural gas.

TK17 H_2 70 MPa	TN1 H_2 25 MPa	TN1 H_2 35 MPa	TN1 H_2 35 MPa HF*	TN1 H_2 70 MPa
70 MPa				✓

* HF = High-Flow

The WEH® TK17 H_2 70 MPa offers optimum safety for the operator thanks to the locking mechanism. The fueling nozzle remains connected to the receptacle until the locking mechanism is released by the operator.

Application
Fueling nozzle for hydrogen fast filling of cars at self-service fueling stations.

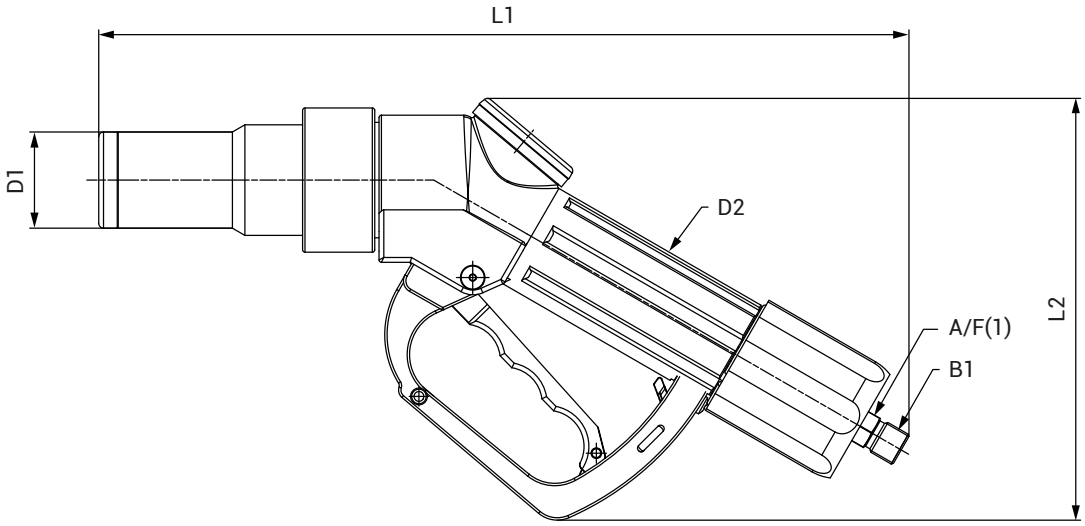
TECHNICAL DATA

Characteristics	Basic version
Nominal bore (DN)	4 mm
Pressure range	PN = 70 MPa (10,000 psi) | PS = 87.5 MPa
Temperature range	-40 °C up to +85 °C (-40 °F up to +185 °F)
Medium note	Suitable for pre-cooled hydrogen
Material	Corrosion resistant
Sealing material	Hydrogen resistant
Nozzle type	Type C acc. to SAE J2600:2002, paragraph 5.2
Design	With plastic thermal protection, cold protection and hand grip with magnet
Weight	Approx. 1.9 kg (4.19 lbs.)
Conformity / Tests / Approvals	Tests acc. to SAE J2600:2002

Fueling nozzle **TK17 H_2 70 MPa**

ORDERING | WEH® TK17 H_2 70 MPa Fueling nozzle

approx. dimensions (mm)



Part no.	Description	Pressure (PN)	B1 (male thread)	L1	L2	D1	D2	A/F(1)
C1-162708	TK17 H_2 70 MPa	70 MPa / 10,000 psi	UNF 9/16"-18*	337	175	40	46	14

* 60° inner cone

Fueling assemblies consisting of fueling nozzle, hose set and breakaway coupling are available on request.

ACCESSORIES

The following accessories are available for the WEH® TK17 H_2 70 MPa Fueling nozzle:

Hose set

Hose set for connecting fueling nozzle and TSA1 H_2 70 MPa breakaway coupling, complete with filling hose (for pre-cooled hydrogen) and braided protection hose as cover.
Design filling hose: max. operating pressure PS: 87.5 MPa / nominal bore (DN): 4.5 mm / temperature range: -40 °C up to +65 °C (-40 °F up to +149 °F)

Part no.	B1/B2 (female thread)	Hose length
E68-163061	UNF 9/16"-18*	3 m
E68-163062	UNF 9/16"-18*	4 m
E68-163063	UNF 9/16"-18*	5 m

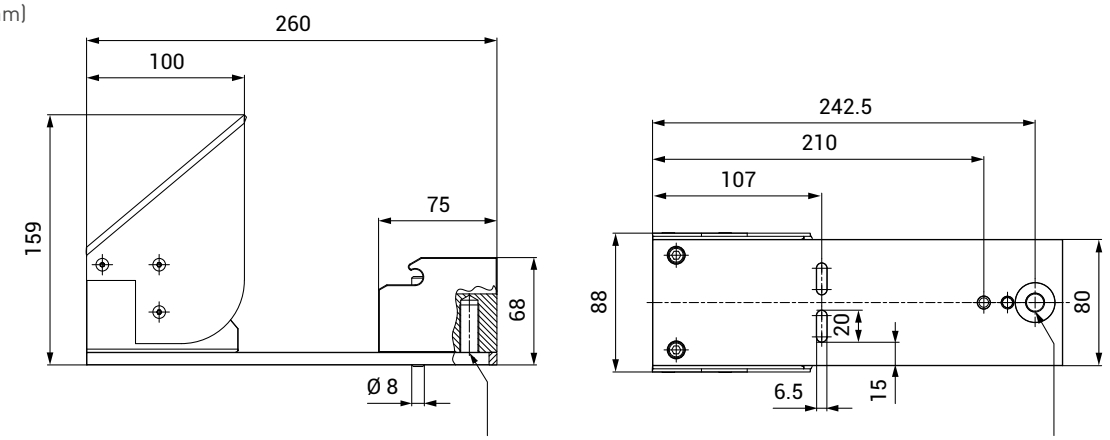
* DKJ 58°

Fueling nozzle **TK17 H_2 70 MPa**

Dispenser mounting

Mounting for safe attachment of the fueling nozzle to the dispenser. Optionally a magnetic field sensor can be installed.

approx. dimensions (mm)



Mounting possibility for optionally available magnetic field sensor

Part no.	Description
C1-143641	Dispenser mounting (switch actuated) with weather protection and special cover for impact protection
E68-123980	Magnetic field sensor with 2 m cable, explosion-proof acc. to ATEX

TNS1 H_2 Service receptacle

To prevent damage in the fueling nozzle while purging or leak testing during maintenance in the course of which pressure is applied, we recommend the use of a service receptacle. The receptacle also protects the fueling nozzle from dirt ingress whilst not in use.

Part no.	Description
C1-148079	TNS1 H_2 Service receptacle incl. protection cap

Fueling nozzle **TK17 H_2 70 MPa**

SPARE PARTS

Various parts are available as spares for the WEH® TK17 H_2 70 MPa Fueling nozzle.

Part No.	Description
E80-80187	1 Impact protection
E80-84030	2 Locking lever
E69-161748	3 Logo cap
E80-59738	3 Label plate
E80-162272	4 Plastic thermal protection (cold protection)
E99-44923	Maintenance spray

When ordering please specify the part no. engraved on the fueling nozzle.

Fueling nozzle **TK17 H_2 70 MPa ENR**

DESCRIPTION

Features
- Type C nozzle acc. to SAE J2600:2002, paragraph 5.2
- Left or right single-handed operation
- Compatible with WEH® TN1 H_2 70 MPa Receptacle profile
- Exchangeable data interface (ENR)
- Integrated purging line for nitrogen purging
- Prepared for dispenser mounting with purging system
- WEH® EASY-TURN 250° swivel joint
- Increased robustness in case of improper handling
- Easy operation
- High flow rate → short filling times
- Protecion against impact and cold
- Plastic thermal protection
- Hand grip with magnet
- WEH® Jaw locking mechanism
- High-grade materials
- Coding for pressure range / gas type (acc. to table below)

The WEH® TK17 H_2 70 MPa ENR Fueling nozzle with exchangeable data interface (ENR = exchangeable nozzle receiver) was developed for refueling cars with compressed, gaseous hydrogen (CGH_2). The fueling nozzle provides the same proven characteristics as the already known TK17 H_2 70 MPa.

The new TK17 H_2 70 MPa ENR is additionally equipped with a purging line, that allows purging with nitrogen during and after fueling process. This can prevent ingress of moisture and formation of ice crystals when filling with pre-cooled hydrogen. Removing the fueling nozzle from the receptacle is thus facilitated even in unfavorable climatic conditions.
The efficiency of the purging line has been successfully tested in compliance with the freezing test 7.26 from the draft version of ISO 17268.

The WEH® TK17 H_2 70 MPa ENR offers optimum safety for the operator thanks to the locking mechanism. The fueling nozzle remains connected to the receptacle until the locking mechanism is released by the operator.

TK17 H_2 70 MPa ENR	TN1 H_2				
		25 MPa	35 MPa	35 MPa HF*	70 MPa
70 MPa					✓

* HF = High-Flow

Application
Fueling nozzle for hydrogen fast filling of cars at self-service fueling stations.

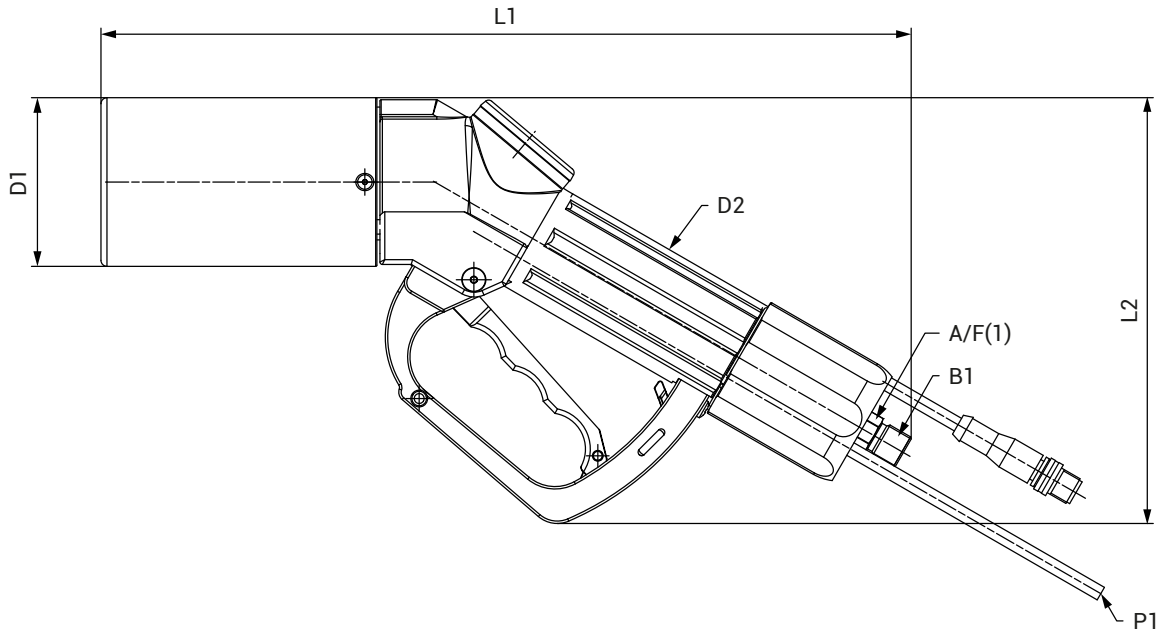
TECHNICAL DATA

Characteristics	Basic version
Nominal bore (DN)	4 mm
Pressure range	PN = 70 MPa (10,000 psi) | PS = 87.5 MPa
Temperature range	-40 °C up to +85 °C (-40 °F up to +185 °F)
Material	Corrosion resistant
Sealing material	Hydrogen resistant
Design	With plastic thermal protection, cold protection, hand grip with magnet, exchangeable data interface acc. to SAE TIR J2799 and integrated purging line
Weight	Approx. 2.4 kg (5.29 lbs.)
Medium for purging	Nitrogen
Nominal bore (DN) purging line	4 mm
Media temperature range purging medium	-20 °C up to +85 °C (-4 °F up to +185 °F)
Flow rate during purging	500 Nl/h
Conformity / Tests / Approvals	Fueling nozzle: SAE TIR J2799, tests acc. to SAE J2600:2002 IR data interface: ATEX, NEC or KTL

Fueling nozzle **TK17 H_2 70 MPa ENR**

ORDERING | WEH® TK17 H_2 70 MPa ENR Fueling nozzle

approx. dimensions (mm)



Part no.	Description	Pressure (PN)	B1 (male thread)	P1	L1	L2	D1	D2	A/F(1)
C1-160702-X01	TK17 H_2 70 MPa ENR (ATEX IR data interface)	70 MPa / 10,000 psi	UNF 9/16"-18*	Ø 6	339	175	70	46	14
C1-160701-X01	TK17 H_2 70 MPa ENR (NEC IR data interface)	70 MPa / 10,000 psi	UNF 9/16"-18*	Ø 6	339	175	70	46	14
C1-164846	TK17 H_2 70 MPa ENR (KTL IR data interface)	70 MPa / 10,000 psi	UNF 9/16"-18*	Ø 6	339	175	70	46	14

* 60° inner cone

Fueling assemblies consisting of fueling nozzle, hose set and breakaway coupling are available on request.

ACCESSORIES

The following accessories are available for the WEH® TK17 H_2 70 MPa ENR Fueling nozzle:

Hose set

Hose set for connecting fueling nozzle and TSA1 H_2 70 MPa breakaway coupling, complete with filling hose (for pre-cooled hydrogen), data cable, purging line and braided protection hose as cover.
Design filling hose: max. operating pressure PS: 87.5 MPa / nominal bore (DN): 4.5 mm / temperature range: -40 °C up to +65 °C (-40 °F up to +149 °F)

Part no.	B1/B2 (female thread)	P1/P2	Hose length
E68-161886	UNF 9/16"-18*	Ø 6	3 m
E68-161887	UNF 9/16"-18*	Ø 6	4 m
E68-161888	UNF 9/16"-18*	Ø 6	5 m

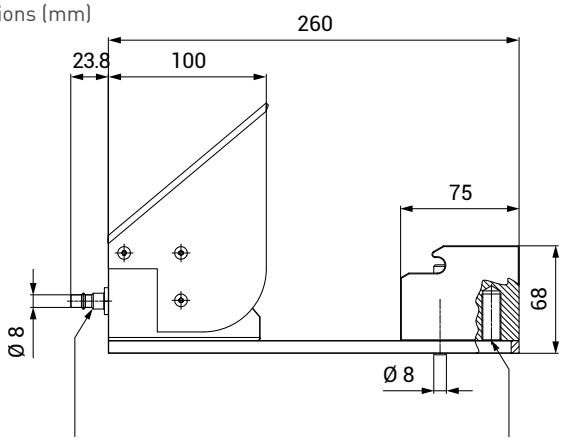
* DKJ 58°

Fueling nozzle **TK17 H_2 70 MPa ENR**

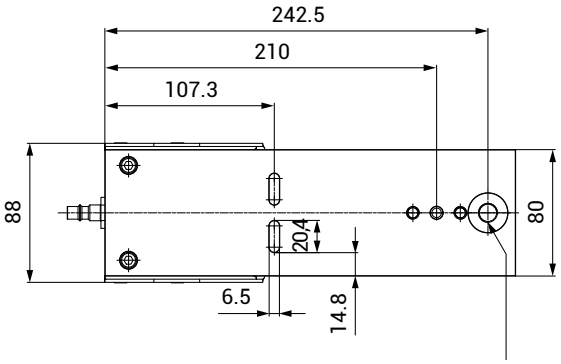
Dispenser mounting

Mounting for safe attachment of the fueling nozzle to the dispenser. The mounting is equipped with a port for purging operations, that allows purging of the fueling nozzle whilst not in use. Optionally a magnetic field sensor can be installed.

approx. dimensions (mm)



Port for purging operations



Installation possibility for optionally available magnetic field sensor

Part no.	Description
C1-122121	Dispenser mounting (switch actuated) with weather protection, special cover for impact protection sleeve and purging system
E68-123980	Magnetic field sensor with 2 m cable, explosion-proof acc. to ATEX

Data cable

Part no.	Description	Hose length
E68-96194	Data cable suitable for 4 m hose set	4.45 m
E68-96193	Data cable for connecting with the converter	3.45 m

Other lengths on request

TNS1 H_2 Service receptacle

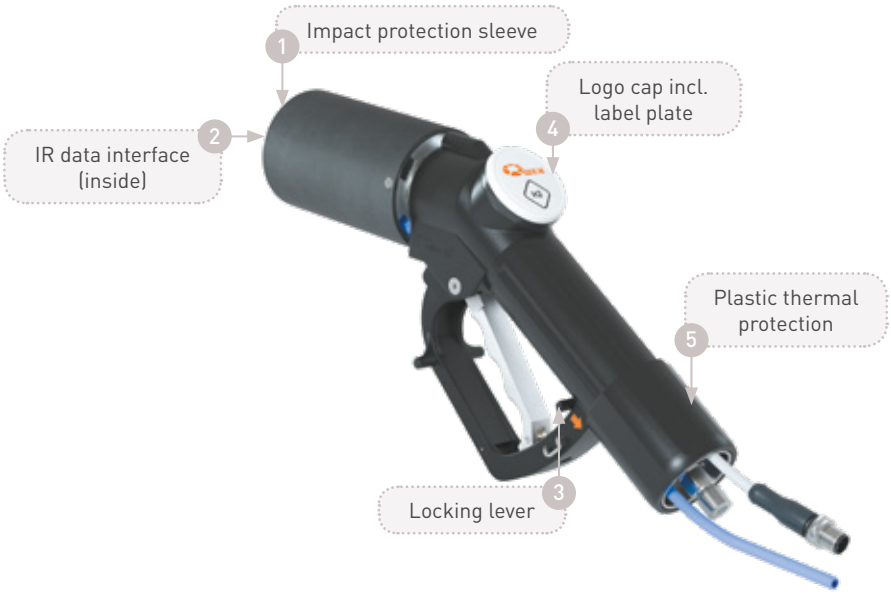
To prevent damage in the fueling nozzle while purging or leak testing during maintenance in the course of which pressure is applied, we recommend the use of a service receptacle. The receptacle also protects the fueling nozzle from dirt ingress whilst not in use.

Part no.	Description
C1-148079	TNS1 H_2 Service receptacle incl. protection cap

Fueling nozzle **TK17 H_2 70 MPa ENR**

SPARE PARTS

Various parts are available as spares for the WEH® TK17 H_2 70 MPa ENR Fueling nozzle.



Part No.	Description
W137968	1 Impact protection sleeve (incl. 3 countersunk screws)
W137969	2 ATEX IR data interface (incl. 3 cylinder screws, 3 countersunk screws and o-ring)
W140915	2 NEC IR data interface (incl. 3 cylinder screws, 3 countersunk screws and o-ring)
W166319	2 KTL IR data interface (incl. 3 cylinder screws, 3 countersunk screws and o-ring)
E80-84030	3 Locking lever
E69-161748	4 Logo cap
E80-59738	4 Label plate
E80-162272	5 Plastic thermal protection (cold protection)
E99-44923	Maintenance spray

When ordering please specify the part no. engraved on the fueling nozzle.

Fueling nozzle **TK17 H_2 35 MPa**

DESCRIPTION

Features
- Type C nozzle acc. to SAE J2600:2002, paragraph 5.2
- Left or right single-handed operation
- Compatible with WEH® TN1 H_2 Receptacle profile
- WEH® EASY-TURN 250° swivel joint
- Easy operation
- High flow rate ➞ short filling times
- Protecion against impact and cold
- Plastic thermal protection
- Hand grip with magnet
- WEH® Jaw locking mechanism
- High-grade materials
- Coding for pressure range / gas type

The WEH® TK17 H_2 35 MPa Fueling nozzle was developed for refueling cars with compressed, gaseous hydrogen (CGH_2).

It is equipped with the same outstanding features as all other WEH® TK17 H_2 Fueling nozzles:
The integrated swivel joint allows a free rotation of the coupling by approx. 250° and the hand grip has a magnet for actuation of the magnet switch for activation of the dispenser.
The internal coding for pressure range and gas type ensures that the TK17 H_2 35 MPa can be connected to the compatible WEH® Receptacles according to the opposite table and also prevents the risk of confusion with natural gas.

TK17 H_2 35 MPa	TN1 H_2 25 MPa	TN1 H_2 35 MPa	TN1 H_2 35 MPa HF*	TN1 H_2 70 MPa
35 MPa		✓	✓	✓

* HF = High-Flow

The WEH® TK17 H_2 35 MPa offers optimum safety for the operator thanks to the locking mechanism. The fueling nozzle remains connected to the receptacle until the locking mechanism is released by the operator.

Application
Fueling nozzle for hydrogen fast filling of cars at self-service fueling stations.

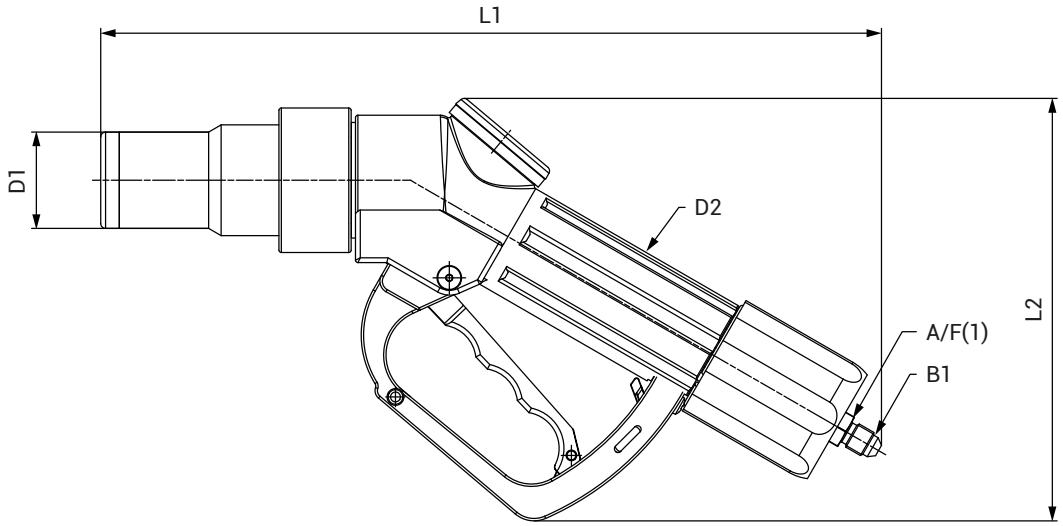
TECHNICAL DATA

Characteristics	Basic version
Nominal bore (DN)	4 mm
Pressure range	PN = 35 MPa (5,000 psi) | PS = 45 MPa
Temperature range	-40 °C up to +85 °C (-40 °F up to +185 °F)
Medium note	Suitable for pre-cooled hydrogen
Material	Corrosion resistant
Sealing material	Hydrogen resistant
Nozzle type	Type C acc. to SAE J2600:2002, paragraph 5.2
Design	With plastic thermal protection, cold protection and hand grip with magnet
Weight	Approx. 1.8 kg (3.97 lbs.)
Conformity / Tests / Approvals	Tests acc. to SAE J2600:2002

Fueling nozzle **TK17 H_2 35 MPa**

ORDERING | WEH® TK17 H_2 35 MPa Fueling nozzle

approx. dimensions (mm)



Part no.	Description	Pressure (PN)	B1 (male thread)	L1	L2	D1	D2	A/F(1)
C1-162700	TK17 H_2 35 MPa	35 MPa / 5,000 psi	UNF 7/16"-20*	333	175	40	46	14

* acc. to SAE J514, 37° cone

Fueling assemblies consisting of fueling nozzle, hose set and breakaway coupling are available on request.

ACCESSORIES

The following accessories are available for the WEH® TK17 H_2 35 MPa Fueling nozzle:

Hose set

Hose set for connecting fueling nozzle and TSA1 H_2 breakaway coupling, complete with filling hose (for pre-cooled hydrogen) and braided protection hose as cover.
Design filling hose: max. operating pressure PS: 45 MPa / nominal bore (DN): 6 mm / temperature range: -40 °C up to +65 °C (-40 °F up to +149 °F)

Part no.	B1/B2 (female thread)	Hose length
E68-162705	UNF 7/16"-20*	3 m
E68-162706	UNF 7/16"-20*	4 m
E68-162707	UNF 7/16"-20*	5 m

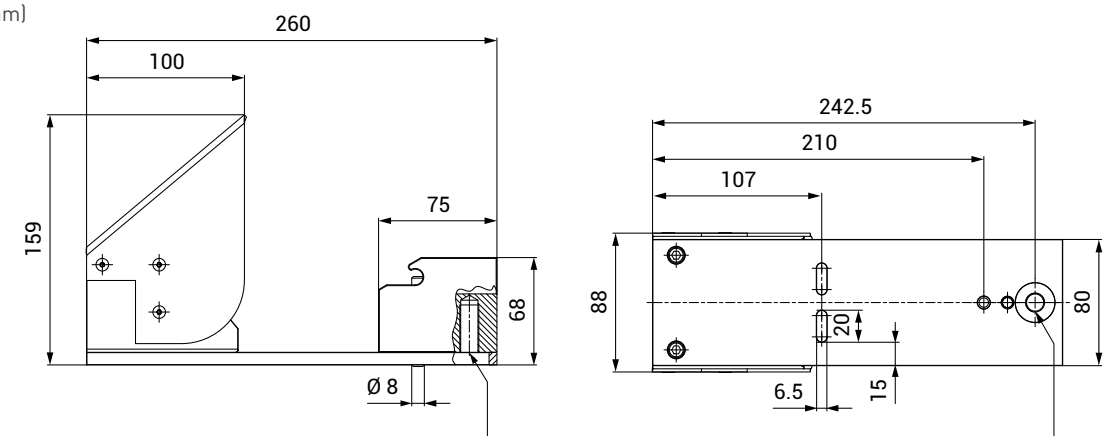
* acc. to SAE JIC, 37° sealing cone

Fueling nozzle **TK17 H_2 35 MPa**

Dispenser mounting

Mounting for safe attachment of the fueling nozzle to the dispenser. Optionally a magnetic field sensor can be installed.

approx. dimensions (mm)



Mounting possibility for optionally available magnetic field sensor

Part no.	Description
C1-143641	Dispenser mounting (switch actuated) with weather protection and special cover for impact protection
E68-123980	Magnetic field sensor with 2 m cable, explosion-proof acc. to ATEX

TNS1 H_2 Service receptacle

To prevent damage in the fueling nozzle while purging or leak testing during maintenance in the course of which pressure is applied, we recommend the use of a service receptacle. The receptacle also protects the fueling nozzle from dirt ingress whilst not in use.

Part no.	Description
C1-148079	TNS1 H_2 Service receptacle incl. protection cap

Fueling nozzle **TK17 H_2 35 MPa**

SPARE PARTS

Various parts are available as spares for the WEH® TK17 H_2 35 MPa Fueling nozzle.

Part No.	Description
E80-80187	1 Impact protection
E80-84030	2 Locking lever
E69-161748	3 Logo cap
E80-59738	3 Label plate
E80-162272	4 Plastic thermal protection (cold protection)
E99-44923	Maintenance spray

When ordering please specify the part no. engraved on the fueling nozzle.

Fueling nozzle **TK17 H_2 35 MPa ENR**

DESCRIPTION

Features
- Type C nozzle acc. to SAE J2600:2002, paragraph 5.2
- Left or right single-handed operation
- Compatible with WEH® TN1 H_2 Receptacle profile
- Exchangeable data interface (ENR)
- Integrated purging line for nitrogen purging
- Prepared for dispenser mounting with purging system
- WEH® EASY-TURN 250° swivel joint
- Increased robustness in case of improper handling
- Easy operation
- High flow rate → short filling times
- Protecion against impact and cold
- Plastic thermal protection
- Hand grip with magnet
- WEH® Jaw locking mechanism
- High-grade materials
- Coding for pressure range / gas type

The WEH® TK17 H_2 35 MPa ENR Fueling nozzle with exchangeable data interface (ENR = exchangeable nozzle receiver) was developed for refueling cars with compressed, gaseous hydrogen (CGH_2).

Equipped with the same outstanding features as the WEH® TK17 H_2 35 MPa without ENR, the fueling nozzle with ENR also has an interface (infrared) for data transfer between vehicle and fueling station, as well as a purging line for purging the nozzle with nitrogen during and after fueling process.
The internal coding for pressure range and gas type ensures that the TK17 H_2 35 MPa ENR can be connected to the compatible WEH® Receptacles according to the opposite table and also prevents the risk of confusion with natural gas.

TK17 H_2 35 MPa ENR	TN1 H_2			
	25 MPa	35 MPa	35 MPa HF*	70 MPa
35 MPa		✓	✓	✓

* HF = High-Flow

The WEH® TK17 H_2 35 MPa ENR offers optimum safety for the operator thanks to the locking mechanism. The fueling nozzle remains connected to the receptacle until the locking mechanism is released by the operator.

Application
Fueling nozzle for hydrogen fast filling of cars at self-service fueling stations.

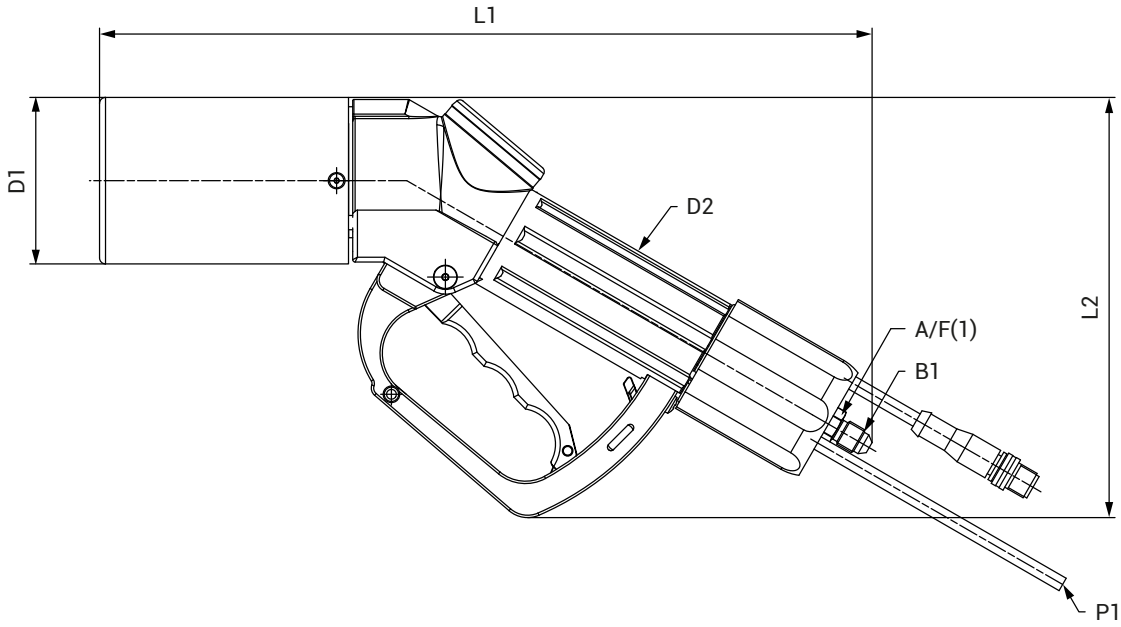
TECHNICAL DATA

Characteristics	Basic version
Nominal bore (DN)	4 mm
Pressure range	PN = 35 MPa (5,000 psi) | PS = 45 MPa
Temperature range	-40 °C up to +85 °C (-40 °F up to +185 °F)
Medium note	Suitable for pre-cooled hydrogen
Material	Corrosion resistant
Sealing material	Hydrogen resistant
Nozzle type	Type C acc. to SAE J2600:2002, paragraph 5.2
Design	With plastic thermal protection, cold protection, hand grip with magnet, exchangeable data interface acc. to SAE TIR J2799 and integrated purging line
Weight	Approx. 2.4 kg (5.29 lbs.)
Medium for purging	Nitrogen
Nominal bore (DN) purging line	4 mm
Media temperature range purging medium	-20 °C up to +85 °C (-4 °F up to +185 °F)
Flow rate during purging	500 Nl/h
Conformity / Tests / Approvals	Fueling nozzle: SAE TIR J2799, tests acc. to SAE J2600:2002 IR data interface: ATEX, NEC or KTL

Fueling nozzle **TK17 H_2 35 MPa ENR**

ORDERING | WEH® TK17 H_2 35 MPa ENR Fueling nozzle

approx. dimensions (mm)



Part no.	Description	Pressure (PN)	B1 (male thread)	L1	L2	D1	D2	A/F(1)
C1-162699	TK17 H_2 35 MPa ENR (ATEX IR data interface)	35 MPa / 5,000 psi	UNF 7/16"-20*	334	177	70	46	14
C1-162698	TK17 H_2 35 MPa ENR (NEC IR data interface)	35 MPa / 5,000 psi	UNF 7/16"-20*	334	177	70	46	14
C1-170132	TK17 H_2 35 MPa ENR (KTL IR data interface)	35 MPa / 5,000 psi	UNF 7/16"-20*	334	177	70	46	14

* acc. to SAE J514, 37° cone

Fueling assemblies consisting of fueling nozzle, hose set and breakaway coupling are available on request.

ACCESSORIES

The following accessories are available for the WEH® TK17 H_2 35 MPa ENR Fueling nozzle:

Hose set

Hose set for connecting fueling nozzle and TSA1 H_2 breakaway coupling, complete with filling hose (for pre-cooled hydrogen), data cable, purging line and braided protection hose as cover.
Design filling hose: max. operating pressure PS: 45 MPa / nominal bore (DN): 6 mm / temperature range: -40 °C up to +65 °C (-40 °F up to +149 °F)

Part no.	B1/B2 (female thread)	P1/P2	Hose length
E68-162702	UNF 7/16"-20*	Ø 6	3 m
E68-162703	UNF 7/16"-20*	Ø 6	4 m
E68-162704	UNF 7/16"-20*	Ø 6	5 m

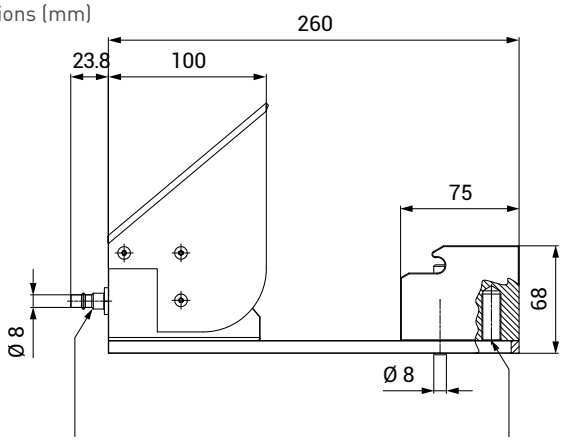
* acc. to SAE JIC, 37° sealing cone

Fueling nozzle **TK17 H_2 35 MPa ENR**

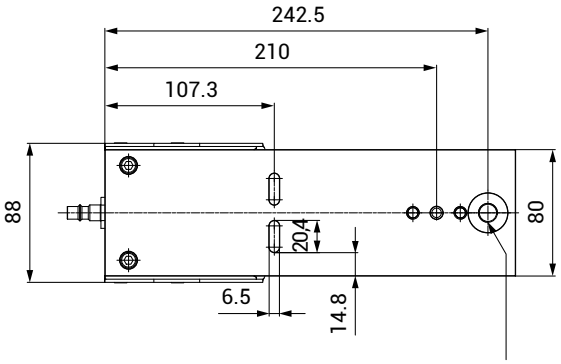
Dispenser mounting

Mounting for safe attachment of the fueling nozzle to the dispenser. The mounting is equipped with a port for purging operations, that allows purging of the fueling nozzle whilst not in use. Optionally a magnetic field sensor can be installed.

approx. dimensions (mm)



Port for purging operations



Installation possibility for optionally available magnetic field sensor

Part no.	Description
C1-122121	Dispenser mounting (switch actuated) with weather protection, special cover for impact protection sleeve and purging system
E68-123980	Magnetic field sensor with 2 m cable, explosion-proof acc. to ATEX

Data cable

Part no.	Description	Hose length
E68-96194	Data cable suitable for 4 m hose set	4.45 m
E68-96193	Data cable for connecting with the converter	3.45 m

Other lengths on request

TNS1 H_2 Service receptacle

To prevent damage in the fueling nozzle while purging or leak testing during maintenance in the course of which pressure is applied, we recommend the use of a service receptacle. The receptacle also protects the fueling nozzle from dirt ingress whilst not in use.

Part no.	Description
C1-148079	TNS1 H_2 Service receptacle incl. protection cap

Fueling nozzle **TK17 H_2 35 MPa ENR**

SPARE PARTS

Various parts are available as spares for the WEH® TK17 H_2 35 MPa ENR Fueling nozzle.

Part No.	Description
W137968	1 Impact protection sleeve (incl. 3 countersunk screws)
W137969	2 ATEX IR data interface (incl. 3 cylinder screws, 3 countersunk screws and o-ring)
W140915	2 NEC IR data interface (incl. 3 cylinder screws, 3 countersunk screws and o-ring)
W166319	2 KTL IR data interface (incl. 3 cylinder screws, 3 countersunk screws and o-ring)
E80-84030	3 Locking lever
E69-161748	4 Logo cap
E80-59738	4 Label plate
E80-162272	5 Plastic thermal protection (cold protection)
E99-44923	Maintenance spray

When ordering please specify the part no. engraved on the fueling nozzle.

Fueling nozzle **TK16 H_2**

DESCRIPTION

Features
- Compatible with WEH® TN1 H_2 receptacle profile
- WEH® EASY-TURN 360° swivel joint for actuation lever
- Easy operation
- Extremely high flow rate ➡ short filling times
- Recirculation of the vented gas
- Plastic thermal protection
- WEH® Jaw locking mechanism
- High-grade materials
- Coding for pressure range / gas type

The WEH® TK16 H_2 Fueling nozzle makes refueling with compressed hydrogen (CGH_2) even more easy for the operator. The TK16 H_2 is very light in weight and therefore easy to operate.
The actuation lever is located on the integrated swivel joint making it easy to rotate into the optimal actuating position.
The actuation lever needs less effort to actuate the nozzle.
The internal coding for pressure range and gas type ensures that the TK16 H_2 can be connected to the compatible WEH® Receptacles according to the opposite table and also prevents the risk of confusion with natural gas.

TK16 H_2 \ TN1 H_2	25 MPa	35 MPa	35 MPa HF*	70 MPa
25 MPa	✓	✓	✓	✓
35 MPa		✓	✓	✓

* HF = High-Flow

The WEH® TK16 H_2 offers optimum safety to the operator.
The fueling nozzle remains connected to the receptacle until the gas between inlet valve and receptacle is depressurized.

Application
Fueling nozzle for H_2 fast filling of cars at self-service fueling stations.

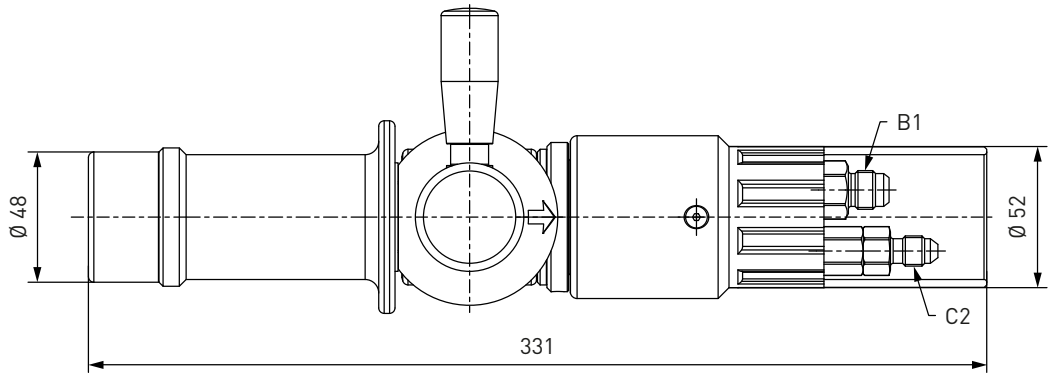
TECHNICAL DATA

Characteristics	Basic version	Options
Nominal bore (DN)	8 mm	On request
Pressure range	PN = 25 MPa (3,600 psi) | PS = 35 MPa PN = 35 MPa (5,000 psi) | PS = 45 MPa	
Temperature range	-40 °C up to +85 °C (-40 °F up to +185 °F)	On request
Material	Corrosion resistant	On request
Sealing material	Hydrogen resistant	On request
Design	With plastic thermal protection and gas recirculation	On request
Weight	Approx. 1.75 kg (3.86 lbs.)	
Conformity / Tests / Approvals	SAE J2600:2002	

Fueling nozzle **TK16 H_2**

ORDERING | WEH® TK16 H_2 Fueling nozzle

approx. dimensions (mm)



Part No.	Description	Pressure (PN)	B1 (male thread)	C2 (male thread)
C1-45695-X4-X01	TK16 H_2	25 MPa / 3,600 psi	UNF 9/16"-18*	UNF 7/16"-20*
C1-45696-X5-X01	TK16 H_2	35 MPa / 5,000 psi	UNF 9/16"-18*	UNF 7/16"-20*

* acc. to SAE J514, 37°

Fueling assemblies consisting of fueling nozzle, hose set and breakaway coupling are available on request.

ACCESSORIES

The following accessories are available for the WEH® TK16 H_2 Fueling nozzle:

Filling and venting hoses

Filling and venting hose for connecting fueling nozzle and TSA1 H_2 breakaway coupling, complete with fittings and press-fittings supported by coil spring stubs.
Design: max. operating pressure PS: 45 MPa (6,530 psi) / nominal bore (DN): 6.35 mm

Part No.	B1/B2 (female thread)	C1/C2 (female thread)	Hose length
C1-60917	UNF 9/16"-18*	UNF 7/16"-20*	3 m
C1-60920	UNF 9/16"-18*	UNF 7/16"-20*	4 m
C1-60923	UNF 9/16"-18*	UNF 7/16"-20*	5 m

* acc. to SAE JIC, 37°

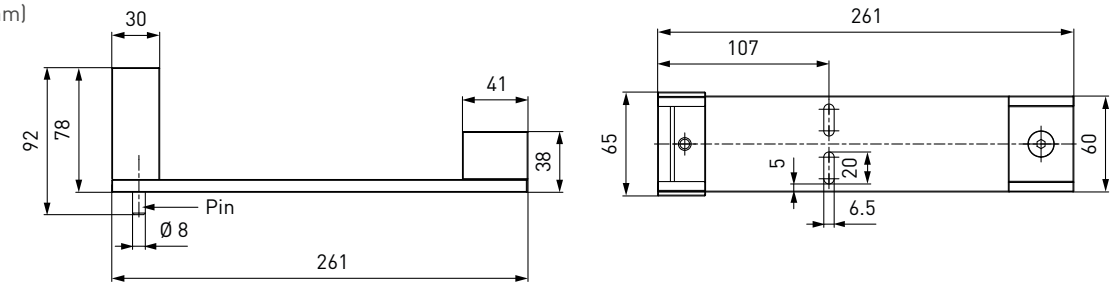
Fueling nozzle **TK16 H_2**

Dispenser mounting

Mounting for safe attachment of the fueling nozzle to the dispenser. Design: Aluminium, stainless steel

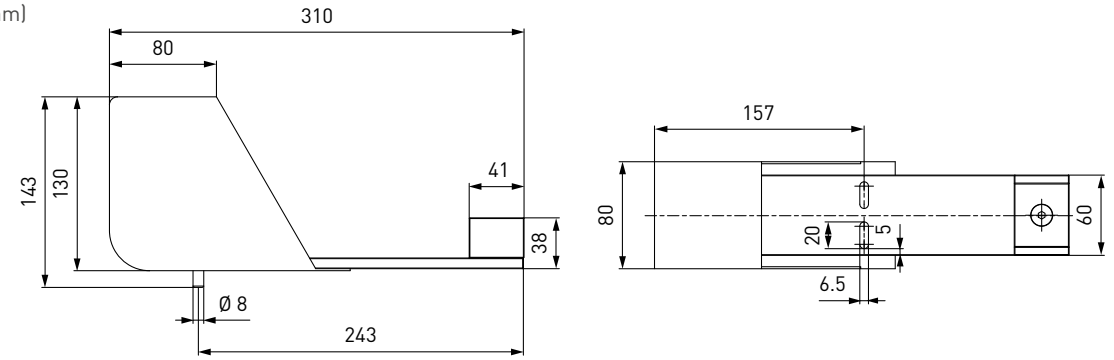
Switch actuated (with pin) resp. not switch actuated mounting

approx. dimensions (mm)



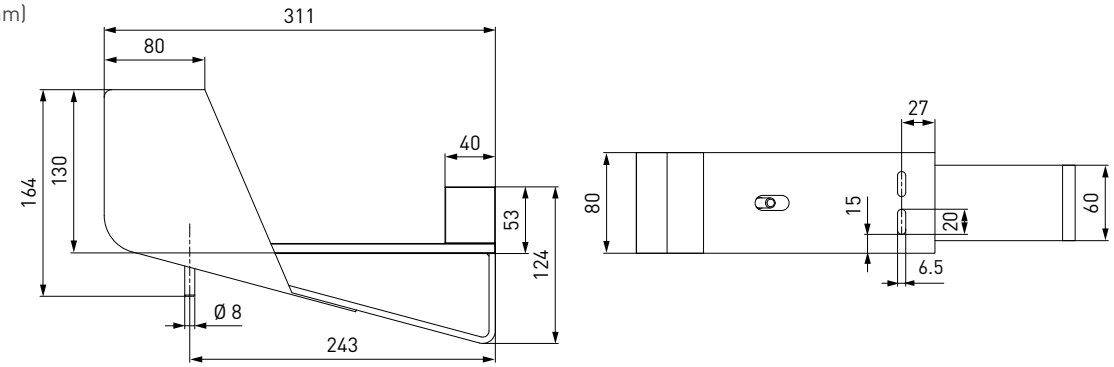
Switch actuated mounting with weather protection

approx. dimensions (mm)



Switch actuated mounting with weather protection and angle plate 15°

approx. dimensions (mm)



Part No.	Description
C1-55209	Mounting (switch actuated)
C1-55212	Mounting (not switch actuated)
C1-82152	Mounting (switch actuated) with weather protection
C1-112643	Mounting (switch actuated) with weather protection and angle plate 15°

Fueling nozzle **TK16 H_2**

Fittings

Stainless steel fittings for connecting port 'B1' to the filling hose resp. the port 'C2' to the venting hose are available on request.

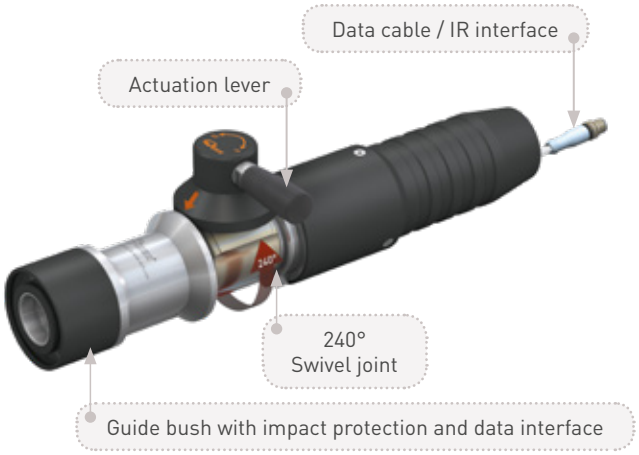
SPARE PARTS

Various parts are available as spares for the WEH® TK16 H_2 Fueling nozzle.

Part No.	Description
E80-45857	1 Impact protection
W72504	2 Actuation lever
E99-44923	Maintenance spray

Fueling nozzle **TK16 H_2 with data interface**

DESCRIPTION



Features
- Compatible with WEH® TN1 H_2 receptacle profile
- Integrated data interface acc. to SAE J2601
- WEH® EASY-TURN 240° swivel joint for actuation lever
- Easy operation
- Extremely high flow rate ➡ short filling times
- Recirculation of the vented gas
- Plastic thermal protection
- WEH® Jaw locking mechanism
- High-grade materials
- Coding for pressure range / gas type

The WEH® TK16 H_2 Fueling nozzle with data interface makes refueling with compressed hydrogen (CGH_2) even more easy for the operator. The TK16 H_2 with data interface features ease of operation, making refueling more comfortable for the operator. The actuation lever is located on the integrated swivel joint making it easy to rotate into the optimal actuating position. The actuation lever needs less effort to actuate the nozzle.
The internal coding for pressure range and gas type ensures that the TK16 H_2 with data interface can be connected to the compatible WEH® Receptacles according to the opposite table and also prevents the risk of confusion with natural gas.
Furthermore the fueling nozzle has an interface (IR) for data transfer between vehicle and fueling station.

TK16 H_2 IR** \ TN1 H_2	25 MPa	35 MPa	35 MPa HF*	70 MPa
35 MPa		✓	✓	✓

* HF = High-Flow
** IR = infrared data interface

The WEH® TK16 H_2 with data interface offers optimum safety to the operator.
The fueling nozzle remains connected to the receptacle until the gas between inlet valve and receptacle is depressurized.

Application
Fueling nozzle for H_2 fast filling of cars at self-service fueling stations.

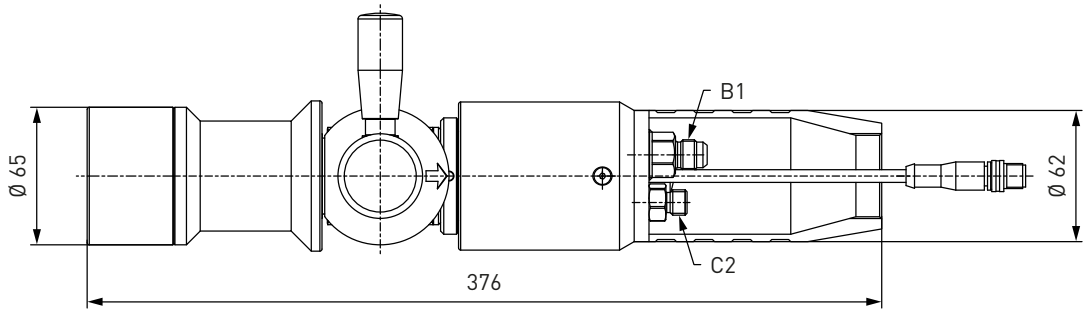
TECHNICAL DATA

Characteristics	Basic version	Options
Nominal bore (DN)	8 mm	On request
Pressure range	PN = 35 MPa (5,000 psi) | PS = 45 MPa	
Temperature range	-40 °C up to +85 °C (-40 °F up to +185 °F)	On request
Material	Corrosion resistant	On request
Sealing material	Hydrogen resistant	On request
Design	With plastic thermal protection, gas recirculation and and data interface	On request
Weight	Approx. 2.4 kg (5.29 lbs.)	
Conformity / Tests / Approvals	SAE J2600:2002 Data interface: SAE J2601 / ATEX	Data interface: SAE J2601 / NEC Class 1 Zone 1

Fueling nozzle **TK16 H_2 with data interface**

ORDERING | WEH® TK16 H_2 Fueling nozzle with data interface

approx. dimensions (mm)



Part No.	Description	Pressure (PN)	B1	C2
C1-103471-X01	TK16 H_2	35 MPa / 5,000 psi	UNF 9/16"-18* male thread	M12x1.5 male thread
C1-100208-X01	TK16 H_2	35 MPa / 5,000 psi	UNF 9/16"-18** female thread	UNF 9/16"-18** female thread
C1-101987-X01	TK16 H_2	35 MPa / 5,000 psi	UNF 9/16"-18** female thread	UNF 7/16"-20** female thread

* acc. to SAE J514, 37°
** 60° cone, MP-fitting

On request the TK16 H_2 fueling nozzle with data interface is also available with registration acc. to NEC Class 1 Zone 1 (acc. to SAE J2601).
Fueling assemblies consisting of fueling nozzle, hose set and breakaway coupling are available on request.

ACCESSORIES

The following accessories are available for the WEH® TK16 H_2 Fueling nozzle with data interface:

Filling and venting hoses

Filling and venting hose for connecting fueling nozzle and TSA1 H_2 breakaway coupling, complete with hose fittings, plastic spiral hose and cable for data interface.
Design: max. operating pressure PS: 45 MPa (6,530 psi) / nominal bore (DN): 6.35 mm (filling hose) resp. 2 mm (venting hose)

Part No.	B1/B2 (female thread)	C1/C2 (female thread)	Hose length
C1-90698	UNF 9/16"-18*	M12x1.5	3 m
C1-94428	UNF 9/16"-18*	M12x1.5	4 m
C1-94429	UNF 9/16"-18*	M12x1.5	5 m

* acc. to SAE JIC, 37°

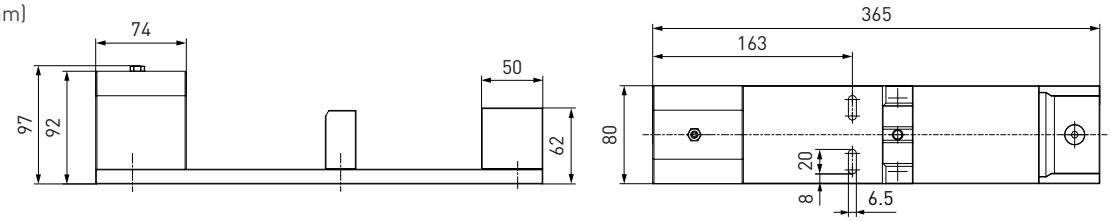
Fueling nozzle **TK16 H_2 with data interface**

Dispenser mounting

Mounting for safe attachment of the fueling nozzle to the dispenser. Design: Aluminium, stainless steel

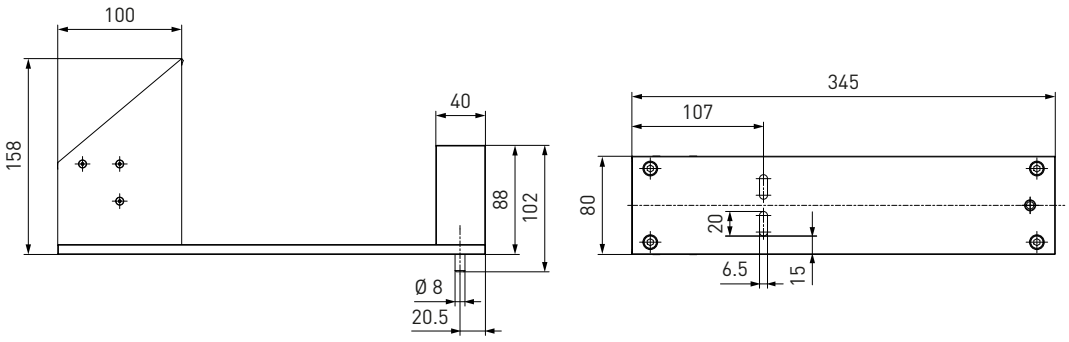
Not switch actuated mounting with protection of front sleeve

approx. dimensions (mm)



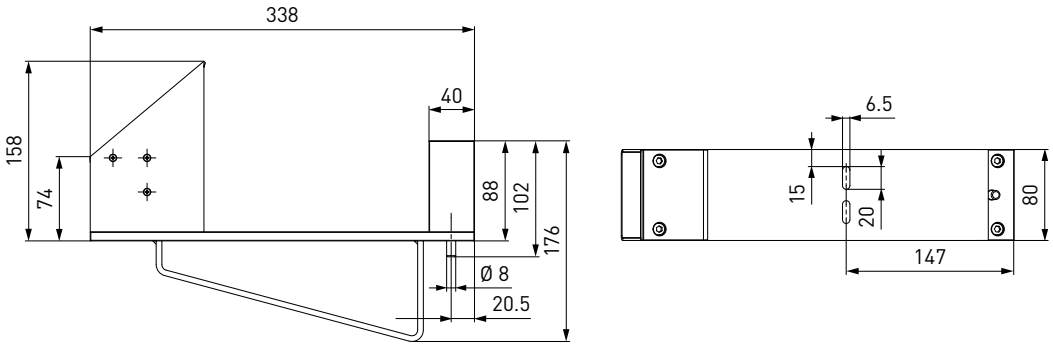
Switch actuated mounting with weather protection

approx. dimensions (mm)



Switch actuated mounting with weather protection and angle plate 15°

approx. dimensions (mm)



Part No.	Description
C1-94671	Mounting (not switch actuated) with protection of front sleeve
C1-90675	Mounting (switch actuated) with weather protection
C1-114632	Mounting (switch actuated) with weather protection and angle plate 15°

Fueling nozzle **TK16 H_2 with data interface**

Fittings

Stainless steel fittings for connecting port 'B1' to the filling hose resp. the port 'C2' to the venting hose are available on request.

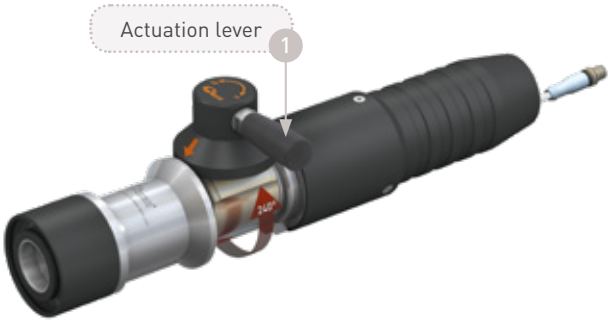
Data cable

Data cable for connecting controller and dispenser.

Part No.	Description
E68-96193	Data cable 3.45 m

SPARE PARTS

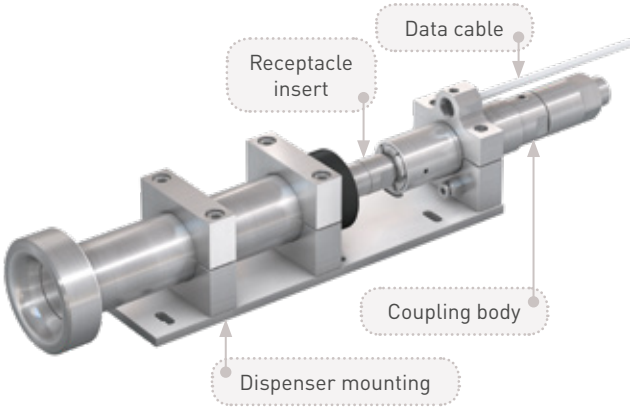
Various parts are available as spares for the WEH® TK16 H_2 Fueling nozzle with data interface.



Part No.	Description
W72504	1 Actuation lever
E99-44923	Maintenance spray

Breakaway coupling **TSA1 H_2 70 MPa**

DESCRIPTION



Features
- Re-usable without factory reservicing
- Installation at the dispenser
- Small compact design
- Integrated cleanable filter (20 micron)
- Incl. dispenser mounting

The WEH® TSA1 H_2 70 MPa Breakaway coupling was developed specifically for 700 bar technology. The breakaway is installed directly at the dispenser of the car fueling station. In the event of accidental deployment, e.g. driving a vehicle from the dispenser with the nozzle remaining in the vehicle fuel port, the coupling will separate the connections between dispenser and hose sealing both ends. This protects largely the receptacle, the fueling nozzle and the dispenser against damage. The detached coupling can be easily reattached and placed back in service after having been function tested.
The integrated filter provides clean hydrogen and is easy to maintain.
WEH® Breakaway coupling consists of a coupling body, a receptacle insert and a dispenser mounting.
The TSA1 H_2 70 MPa for fueling nozzles with data interface additionally contain a data cable for the data interface.

On request we also offer fueling assemblies consisting of a fueling nozzle, a hose set and a breakaway coupling.

Application
Breakaway coupling for car fueling stations for direct installation at the dispenser.

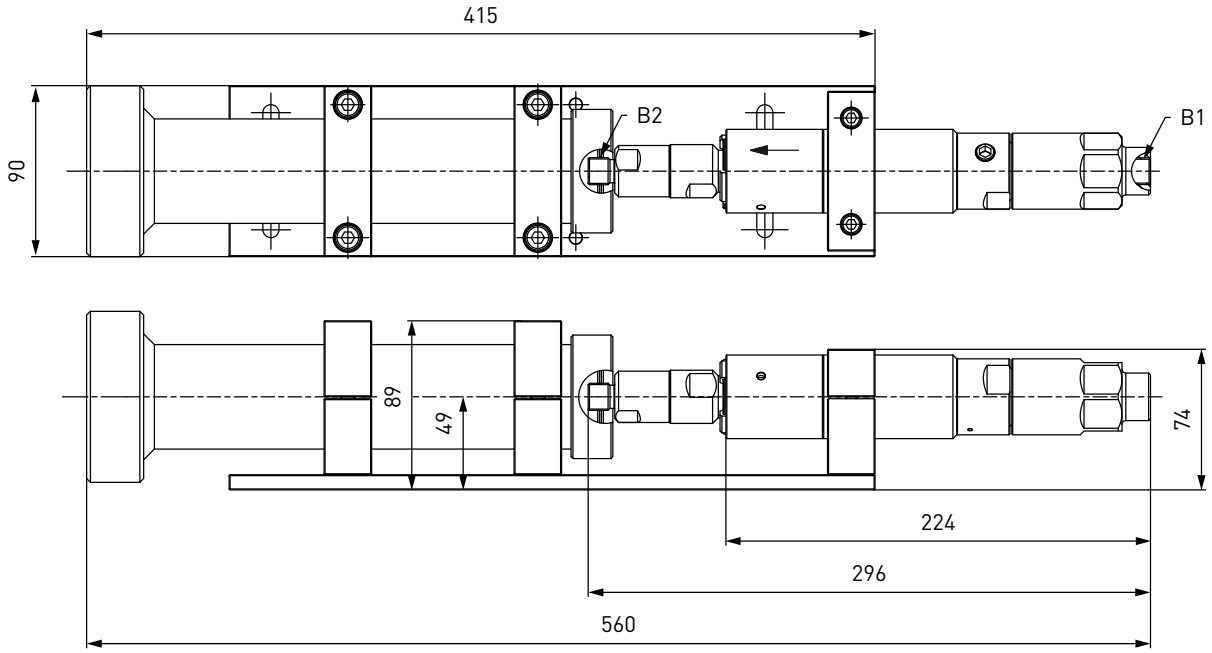
TECHNICAL DATA

Characteristics	Basic version	Options
Nominal bore (DN)	4 mm	On request
Pressure range	PN = 70 MPa (10,000 psi) | PS = 87.5 MPa	
Temperature range	-40 °C up to +85 °C (-40 °F up to +185 °F)	On request
Breakaway force	300 - 600 N	On request
Material	Corrosion resistant stainless steel	On request
Sealing material	Hydrogen resistant	On request
Design	With filter (20 micron) and dispenser mounting Incl. data cable (only for breakaways for fueling nozzles with data interface)	On request

Breakaway coupling **TSA1 H_2 70 MPa**

ORDERING | WEH® TSA1 H_2 70 MPa Breakaway coupling without gas recirculation

approx. dimensions (mm)



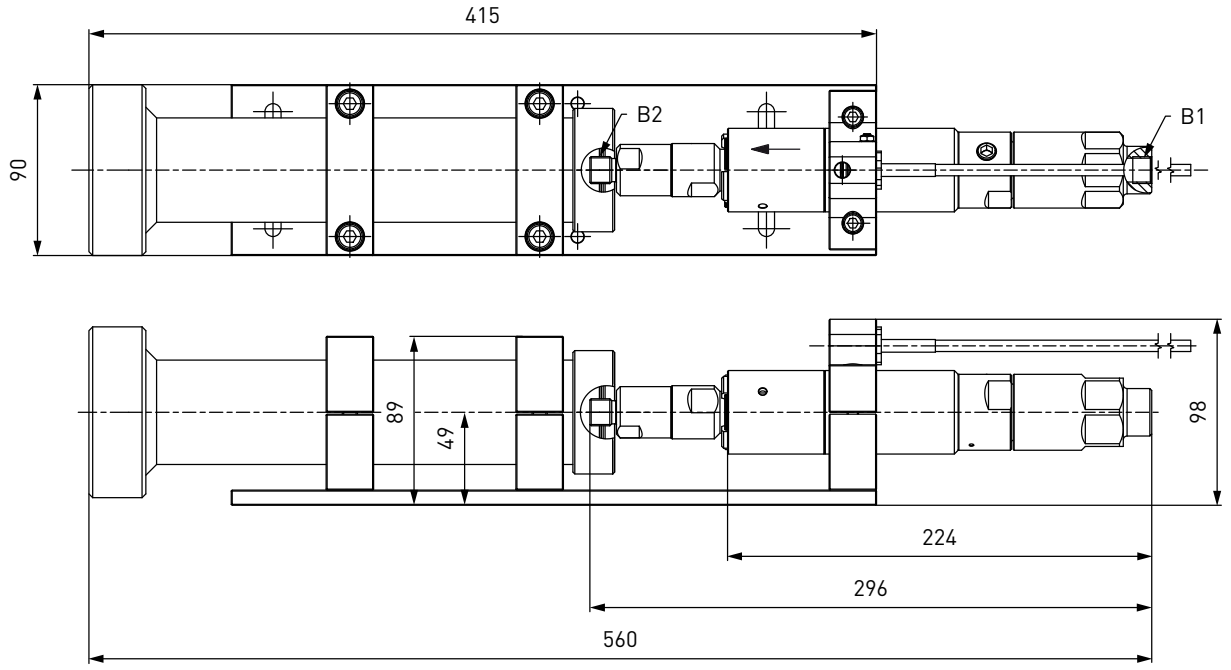
Part No.	Description	Pressure (PN)	B1 (female thread)	B2 (male thread)
C1-93837-X01	TSA1 H_2 70 MPa with filter (20 micron)	70 MPa / 10,000 psi	UNF 9/16"-18*	UNF 9/16"-18**

* 60° cone, MP-fitting
** 60° inner cone

Breakaway coupling **TSA1 H_2 70 MPa**

ORDERING | WEH® TSA1 H_2 70 MPa Breakaway coupling without gas recirculation, for data interface

approx. dimensions (mm)



Part No.	Description	Pressure (PN)	B1 (female thread)	B2 (male thread)
C1-96938-X01	TSA1 H_2 70 MPa with filter (20 micron)	70 MPa / 10,000 psi	UNF 9/16"-18*	UNF 9/16"-18**

* 60° cone, MP-fitting
** 60° inner cone

Breakaway coupling **TSA1 H_2 70 MPa**

ACCESSORIES

The following accessories are available for the WEH® TSA1 H_2 70 MPa Breakaway coupling:

Filling hoses

Suitable filling hose for the TSA1 H_2 70 MPa breakaway coupling are available on request.

Fittings

Stainless steel fittings for connecting port 'B2' to the filling hose are available on request.

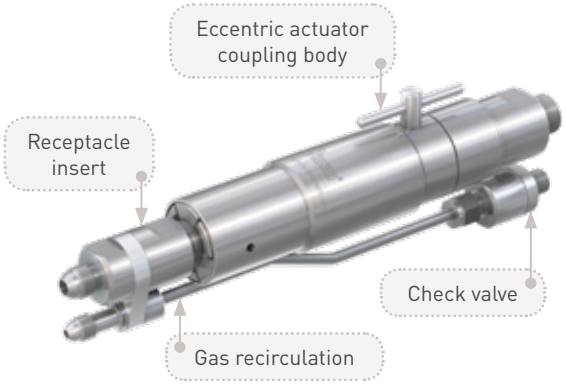
SPARE PARTS

Various parts are available as spares for the WEH® TSA1 H_2 70 MPa Breakaway coupling.

Part No.	Description
W92182	Receptacle insert for TSA1 H_2 70 MPa (C1-93837, C1-96938)
C1-123477	Spare seal set for receptacle insert W92182
E69-67754	Wire filter insert 20 micron (incl. spring and o-ring)

Breakaway coupling **TSA1 H_2**

DESCRIPTION



Features
- Re-usable without factory reservicing
- Installation at the dispenser
- Small compact design
- Integrated cleanable filter (40 resp. 20 micron)
- Check valve at venting line
- No additional tool necessary

The WEH® TSA1 H_2 Breakaway coupling offers additional safety for your car fueling station. The breakaway is installed between the dispenser and the filling hose resp. filling and venting hose. In the event of accidental deployment, e.g. driving a vehicle from the dispenser with the nozzle remaining in the vehicle fuel port, the coupling will separate the connections between dispenser and hose sealing both ends. This protects largely the receptacle, the fueling nozzle and the dispenser against damage. The detached coupling can be easily reattached and placed back in service after having been function tested. The integrated filter provides clean hydrogen and is easy to maintain.
The WEH® Breakaway coupling consists of a coupling body, a receptacle insert and a gas recirculation with check valve. The breakaway is also available without gas recirculation.
The TSA1 H_2 for fueling nozzles with data interface additionally contain a dispenser mounting incl. data cable for the data interface.

On request we also offer fueling assemblies consisting of a fueling nozzle, a hose set and a breakaway coupling.

Application
Breakaway coupling for car fueling stations for direct installation at the dispenser.

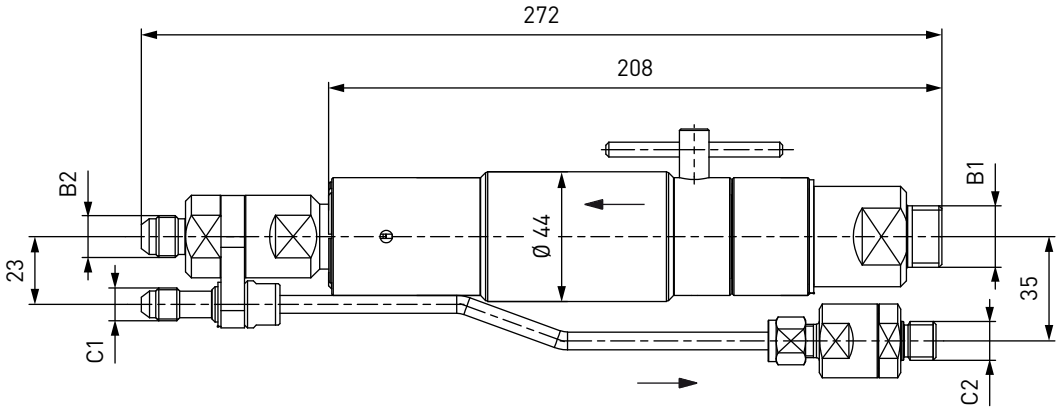
TECHNICAL DATA

Characteristics	Basic version	Options
Nominal bore (DN)	Max. 8 mm, depending on design	On request
Pressure range	PN = 35 MPa (5,000 psi) | PS = 45 MPa	
Temperature range	-40 °C up to +85 °C (-40 °F up to +185 °F)	On request
Breakaway force	300 - 600 N	On request
Material	Corrosion resistant stainless steel, aluminium	On request
Sealing material	Hydrogen resistant	On request
Design	With resp. without gas recirculation With filter (40 resp. 20 micron) Incl. dispenser mounting and data cable (only for breakaways for fueling nozzles with data interface)	On request

Breakaway coupling **TSA1 H_2**

ORDERING | WEH® TSA1 H_2 Breakaway coupling with gas recirculation, male thread

approx. dimensions (mm)

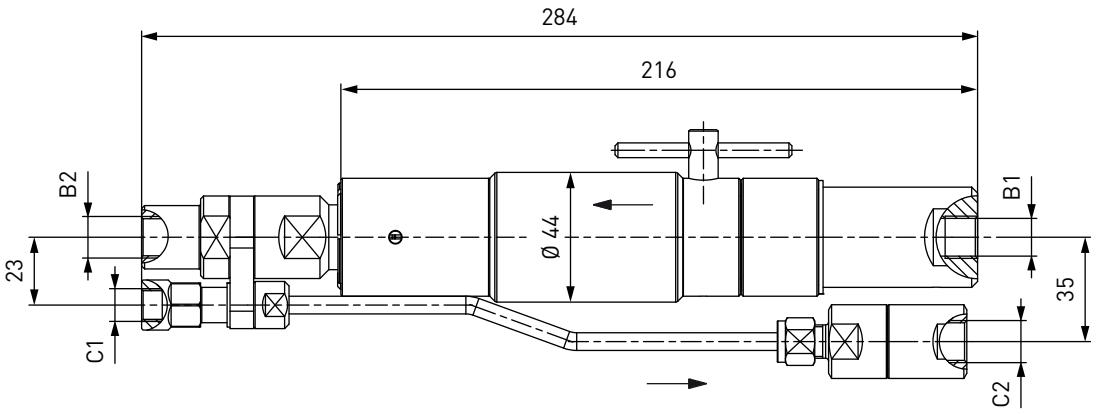


Part No.	Description	DN	Pressure (PN)	B1 (male thread)	B2 (male thread)	C1 (male thread)	C2 (male thread)
C1-18834-X7-X01	TSA1 H_2 with filter (40 micron)	8	35 MPa / 5,000 psi	G1/2"	UNF 9/16"-18*	UNF 7/16"-20*	G1/4"
C1-67741-X1-X01	TSA1 H_2 with filter (20 micron)	8	35 MPa / 5,000 psi	G1/2"	UNF 9/16"-18*	UNF 7/16"-20*	G1/4"

* acc. to SAE J514, 37°

ORDERING | WEH® TSA1 H_2 Breakaway coupling with gas recirculation, female thread

approx. dimensions (mm)



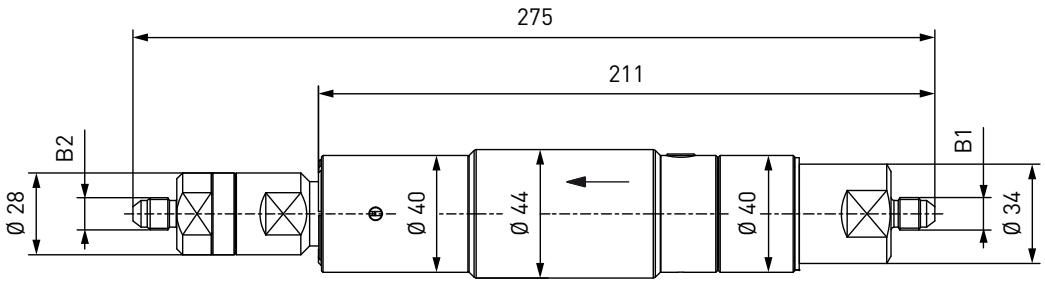
Part No.	Description	DN	Pressure (PN)	B1/B2 (female thread)	C1 (female thread)	C2 (female thread)
C1-99345-X01	TSA1 H_2 with filter (40 micron)	5	35 MPa / 5,000 psi	UNF 9/16"-18*	UNF 7/16"-20*	UNF 9/16"-18*

* 60° cone, MP-fitting

Breakaway coupling **TSA1 H_2**

ORDERING | WEH® TSA1 H_2 Breakaway coupling without gas recirculation, male thread

approx. dimensions (mm)

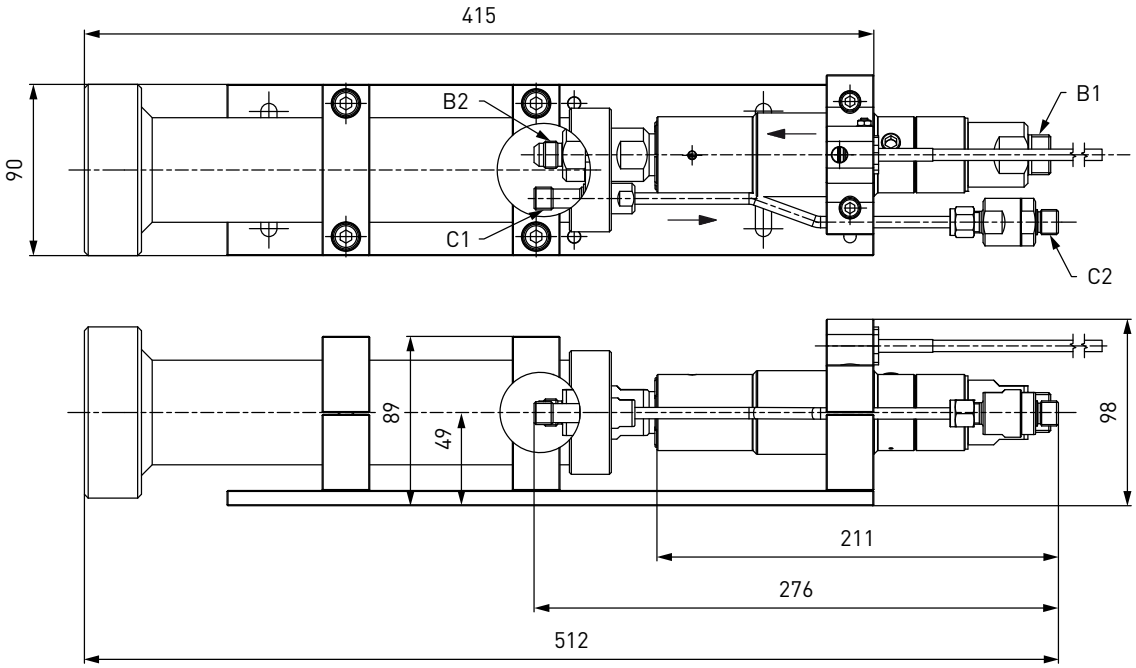


Part No.	Description	DN	Pressure (PN)	B1 (male thread)	B2 (male thread)
C1-111068-X01	TSA1 H_2 with filter (40 micron)	4	35 MPa / 5,000 psi	UNF 7/16"-20*	UNF 7/16"-20*

* acc. to SAE J514, 37°

ORDERING | WEH® TSA1 H_2 Breakaway coupling with gas recirculation, for data interface

approx. dimensions (mm)



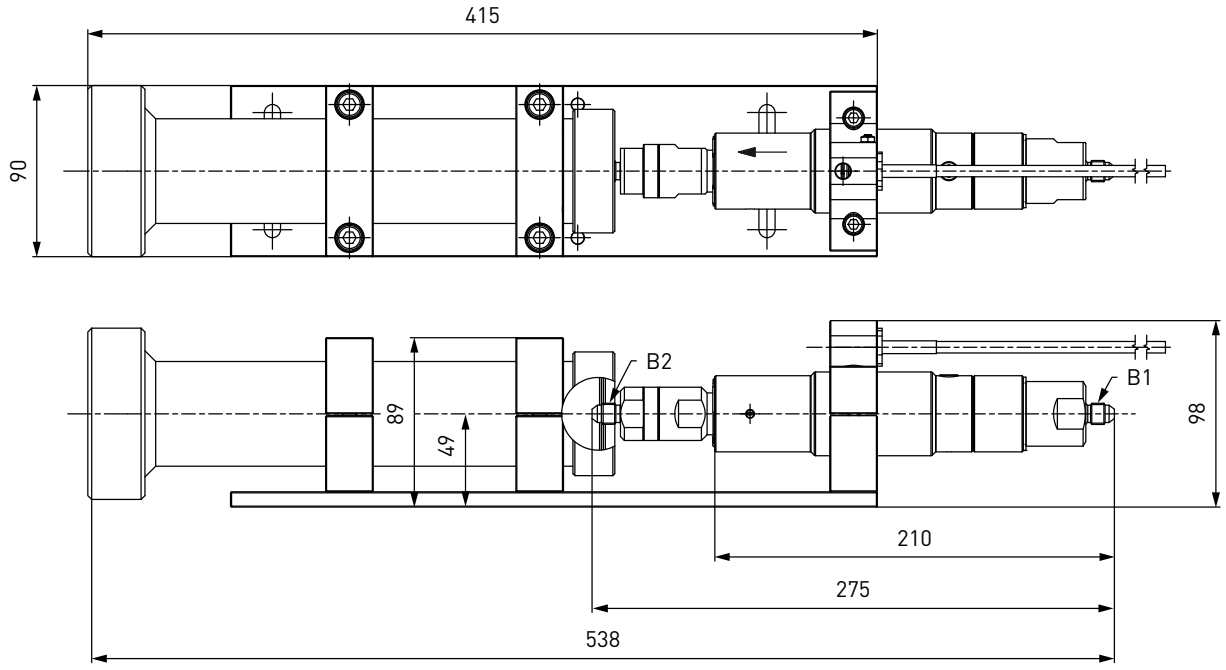
Part No.	Description	DN	Pressure (PN)	B1 (male thread)	B2 (male thread)	C1 (male thread)	C2 (male thread)
C1-90679-X01	TSA1 H_2 with filter (40 micron)	4	35 MPa / 5,000 psi	G1/2"	UNF 9/16"-18*	M12x1.5**	G1/4"

* acc. to SAE J514, 37°
** 24° inner cone

Breakaway coupling **TSA1 H_2**

ORDERING | WEH® TSA1 H_2 Breakaway coupling without gas recirculation, for data interface

approx. dimensions (mm)



Part No.	Description	DN	Pressure (PN)	B1 (male thread)	B2 (male thread)
C1-111069-X01	TSA1 H_2 with filter (40 micron)	4	35 MPa / 5,000 psi	UNF 7/16"-20*	UNF 7/16"-20*

* acc. to SAE J514, 37°

Breakaway coupling **TSA1 H_2**

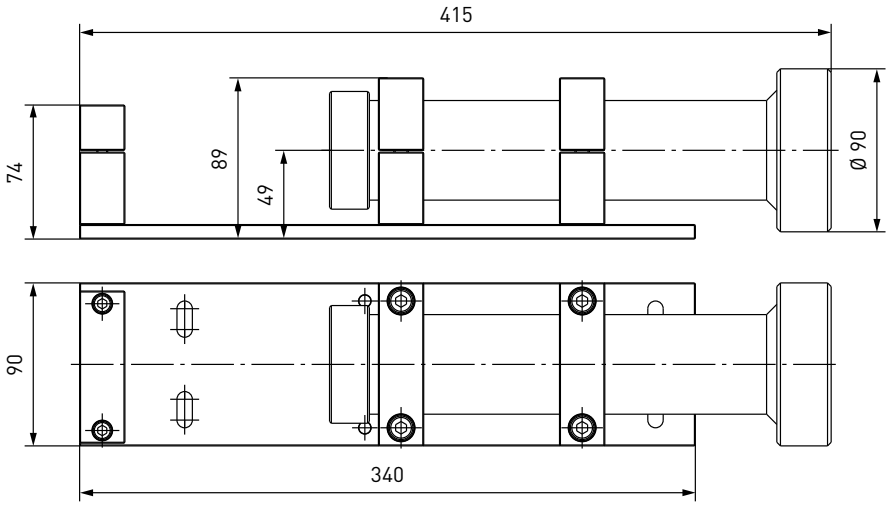
ACCESSORIES

The following accessories are available for the WEH® TSA1 H_2 Breakaway coupling:

Dispenser mounting for breakaway coupling

The breakaway coupling can also be used with a dispenser mounting. The mounting is firmly attached to the dispenser. The integrated guide tube provides a straight pull-off force. The dispenser mounting can be used instead of a return pulley (hose pulley).

approx. dimensions (mm)



Part No.	Description
C1-69275	Dispenser mounting for TSA1 H_2 in combination with TK16 H_2 or TK17 H_2 35 MPa

Breakaway coupling **TSA1 H_2**

Filling and venting hoses

Suitable filling and venting hoses for the TSA1 H_2 breakaway coupling are available on request.

Fittings

Stainless steel fittings for connecting port 'B2' to the filling hose resp. port 'C1' to the venting hose are available on request.

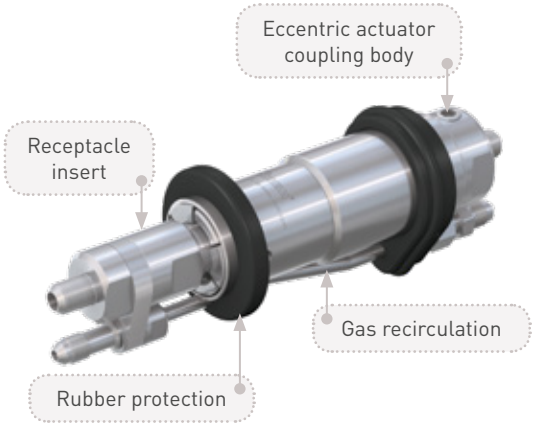
SPARE PARTS

Various parts are available as spares for the WEH® TSA1 H_2 Breakaway coupling.

Part No.	Description
W94249	Receptacle insert for TSA1 H_2 with gas recirculation (C1-18834, C1-67741)
W108401	Receptacle insert for TSA1 H_2 with gas recirculation (C1-99345)
W74608	Receptacle insert for TSA1 H_2 without gas recirculation (C1-111068, C1-111069)
W108154	Receptacle insert for TSA1 H_2 with gas recirculation (C1-90679)
C1-119056	Spare seal set for receptacle insert W94249, W108401, W108154
C1-119054	Spare seal set for receptacle insert W74608
E69-9061	Wire filter insert 40 micron (incl. spring and o-ring)
E69-67754	Wire filter insert 20 micron (incl. spring and o-ring)
E69-46414	Copper disc for G1/4" male thread (port C2)
E69-45950	Copper disc for G1/2" male thread (port B1)

Inline breakaway coupling **TSA2 H_2**

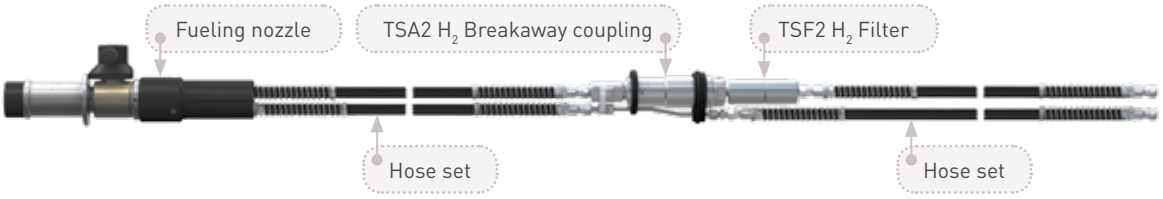
DESCRIPTION



Features
- Re-usable without factory reservicing
- Installation inbetween the filling and venting hoses
- Small compact design
- Rubber protection
- Eccentric actuation via an allen wrench

The WEH® TSA2 H_2 Inline breakaway coupling which is installed inbetween the filling hose resp. filling and venting hoses, is also available for bus and truck fueling stations. In the event of accidental deployment, e.g. driving a vehicle from the dispenser with the nozzle remaining in the vehicle fuel port, the coupling will separate the connections between dispenser and hose sealing both ends. This protects largely the receptacle, the fueling nozzle and the dispenser against damage. The detached coupling can be easily reattached and placed back in service after having been function tested.
The WEH® Breakaway coupling consists of a coupling body, a receptacle insert and a gas recirculation. The breakaway is also available without gas recirculation.

We recommend the installation of a WEH® TSF2 H_2 Filter (see page 92) when using the TSA2 H_2 inline breakaway coupling. The filter protects your system from dirt ingress.



On request we also offer fueling assemblies consisting of a fueling nozzle, a hose set and an inline break-away coupling.

Application
Inline breakaway coupling for car fueling stations for installation inbetween the filling hoses resp. filling and venting hoses.

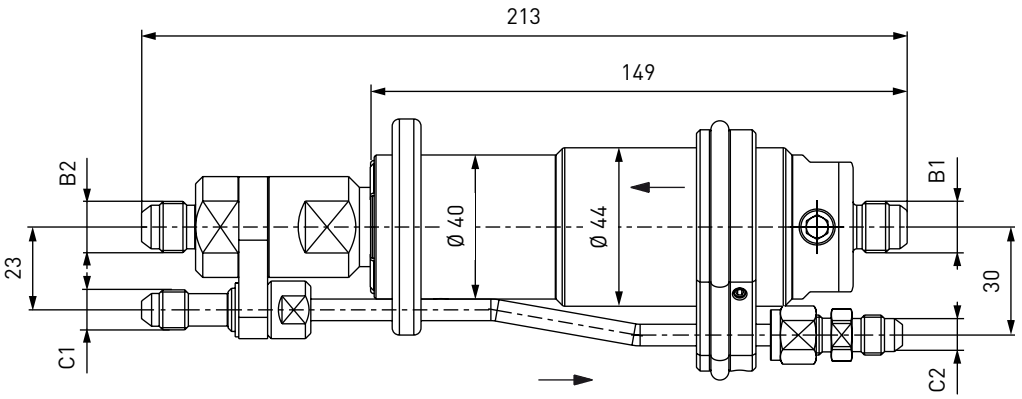
TECHNICAL DATA

Characteristics	Basic version	Options
Nominal bore (DN)	8 mm	On request
Pressure range	PN = 35 MPa (5,000 psi) | PS = 45 MPa	
Temperature range	-40 °C up to +85 °C (-40 °F up to +185 °F)	On request
Breakaway force	300 - 600 N	On request
Material	Corrosion resistant stainless steel, aluminium	On request
Sealing material	Hydrogen resistant	On request
Design	With resp. without gas recirculation	On request

Inline breakaway coupling **TSA2 H_2**

ORDERING | WEH® TSA2 H_2 Inline breakaway coupling with gas recirculation

approx. dimensions (mm)

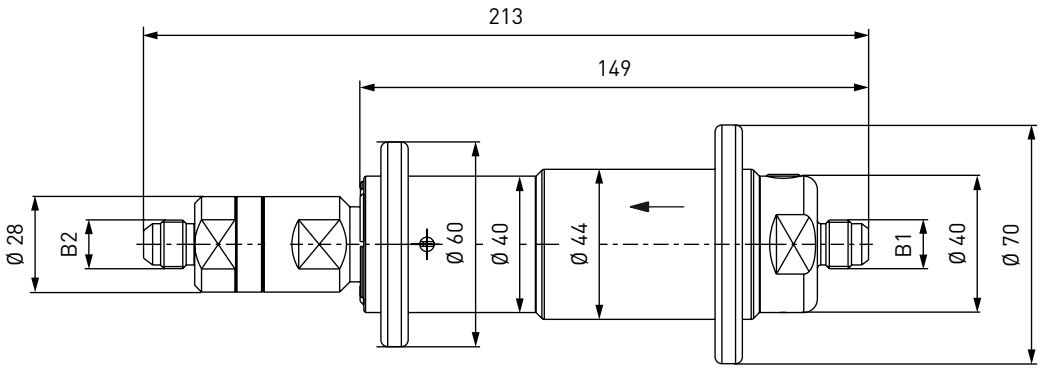


Part No.	Description	DN	Pressure (PN)	B1/B2 (male thread)	C1/C2 (male thread)
C1-77240-X01	TSA2 H_2	8	35 MPa / 5,000 psi	UNF 9/16"-18*	UNF 7/16"-20*

* acc. to SAE J514, 37°

ORDERING | WEH® TSA2 H_2 Inline breakaway coupling without gas recirculation

approx. dimensions (mm)



Part No.	Description	DN	Pressure (PN)	B1 (male thread)	B2 (male thread)
C1-77227-X01	TSA2 H_2	8	35 MPa / 5,000 psi	UNF 9/16"-18*	UNF 9/16"-18*

* acc. to SAE J514, 37°

Inline breakaway coupling **TSA2 H_2**

ACCESSORIES

The following accessories are available for the WEH® TSA2 H_2 Inline breakaway coupling:

Filter TSF2 H_2

We recommend the installation of a WEH® TSF2 H_2 Filter (see page 92) when using the TSA2 H_2 inline breakaway coupling. The filter protects your system from dirt ingress. The TSF2 H_2 is installed as prefilter in the media inlet between inline breakaway coupling and filling hose.

Part No.	Description	Filter (micron)	DN	Pressure (PN)	B1 (male thread)	B2 (female thread)
C1-134710-X01	TSF2 H_2	40	8	35 MPa / 5,000 psi	UNF 9/16"-18*	UNF 9/16"-18*
C1-134711-X01	TSF2 H_2	20	8	35 MPa / 5,000 psi	UNF 9/16"-18*	UNF 9/16"-18*

* acc. to SAE J514, 37°

Filling and venting hoses

Suitable filling and venting hoses for the TSA2 H_2 inline breakaway coupling are available on request.

Fittings

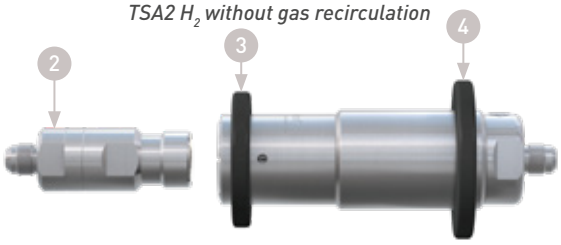
Stainless steel fittings for connecting port 'B1/B2' to the filling hose resp. port 'C1/C2' to the venting hose are available on request.

Inline breakaway coupling **TSA2 H_2**

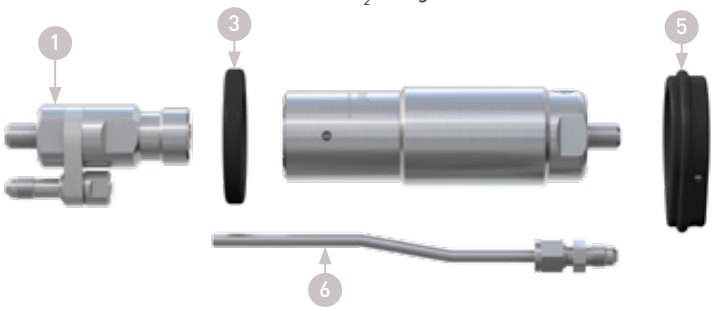
SPARE PARTS

Various parts are available as spares for the WEH® TSA2 H_2 Inline breakaway coupling.

TSA2 H_2 without gas recirculation



TSA2 H_2 with gas recirculation



Part No.	Description
W94249	1 Receptacle insert for TSA2 H_2 with gas recirculation
W60006	2 Receptacle insert for TSA2 H_2 without gas recirculation
B200B-119056	Spare seal set for receptacle insert W94249
B200B-119054	Spare seal set for receptacle insert W60006
E80-71324	3 Front rubber protection
E80-71325	4 Rear rubber protection
W150599	5 Mounting flange incl. impact protection
W139030	6 Spare part set consisting of a gas recirculation tube and a firmly mounted fitting

Receptacle **TN1 H_2 70 MPa**

DESCRIPTION

Features
- Low-noise refueling
- Integrated self-cleaning particle filter (20 micron)
- Integrated high-flow check valve
- Sealing-friendly design
- Coding for pressure range / gas type

The WEH® TN1 H_2 70 MPa Receptacle is designed specifically for hydrogen refueling of cars with a pressure range of 700 bar. Due to the internal aerodynamic design the receptacle gives low noise (no high frequency whistle) combined with maximum flow rate and fast filling. The receptacle is a very durable unit, minimizing maintenance and down-time. The WEH® TN1 H_2 70 MPa Receptacle has an integrated check valve system which is designed to minimize the effect that dirt particles have on the sealing components within the receptacle. The TN1 H_2 70 MPa is also equipped with a coding for pressure range and gas type.

Enhanced safety by integrating a particle filter
Using an integrated particle filter avoids dirt ingress and therefore leakage from the receptacle which gives enhanced safety.

Application
Receptacle for refueling of cars with hydrogen.

TN1 H_2 70 MPa	TK17 H_2 / TK16 H_2			
	25 MPa	35 MPa	35 MPa HF*	70 MPa
70 MPa	✓	✓	✓**	✓

* HF = High-Flow
** except TK16 H_2 High-Flow

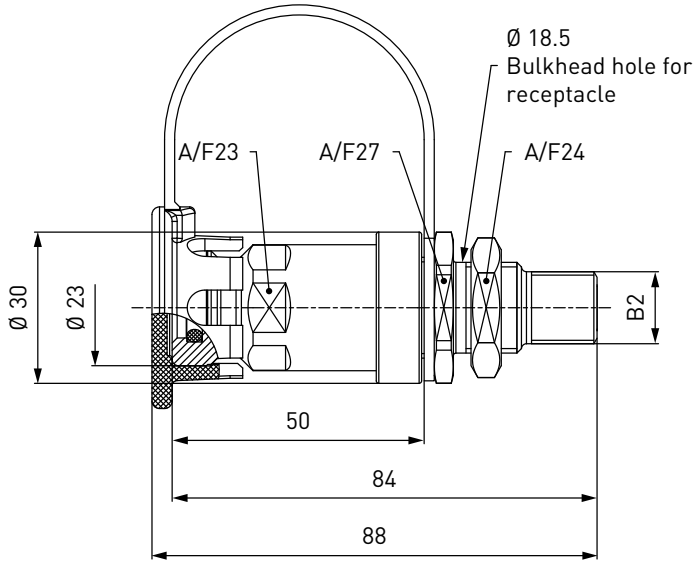
TECHNICAL DATA

Characteristics	Basic version	Options
Nominal bore (DN)	3 mm	On request
Pressure range	PN = 70 MPa (10,000 psi) | PS = 87.5 MPa	
Temperature range	-40 °C up to +85 °C (-40 °F up to +185 °F)	On request
Material	Corrosion resistant	On request
Sealing material	Hydrogen resistant	On request
Design	With protection cap, with integrated particle filter (20 micron) and integrated check valve	On request
Conformity / Tests / Approvals	e 1 00 0010 (Regulation (EC) No. 79/2009) SAE J2600:2002 SAE TIR J2799	

Receptacle **TN1 H_2 70 MPa**

ORDERING | WEH® TN1 H_2 70 MPa Receptacle with male thread

approx. dimensions (mm)

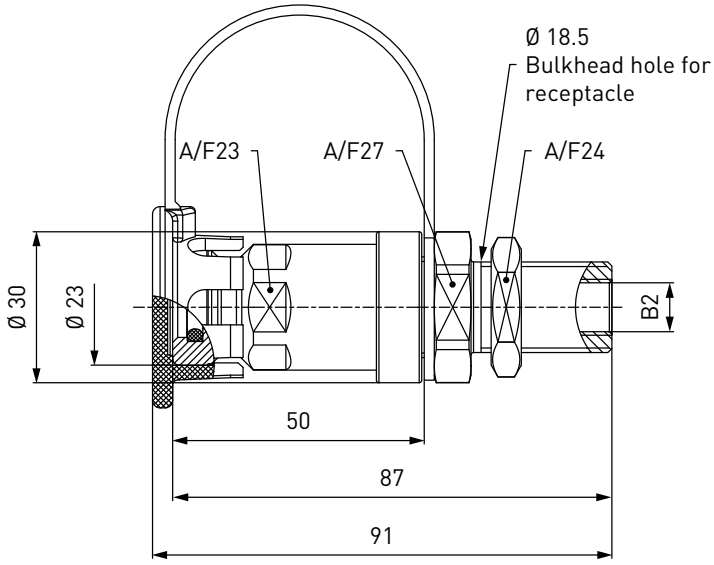


Part No.	Description	DN	Pressure (PN)	B2 (male thread)
C1-84087	TN1 H_2 70 MPa (e1)	3	70 MPa / 10,000 psi	UNF 9/16"-18 for sealing with O-Lok® Face Seal* for tube Ø 6 (1/4")

* Face Seal acc. to SAE J1453

ORDERING | WEH® TN1 H_2 70 MPa Receptacle with female thread (autoclave)

approx. dimensions (mm)



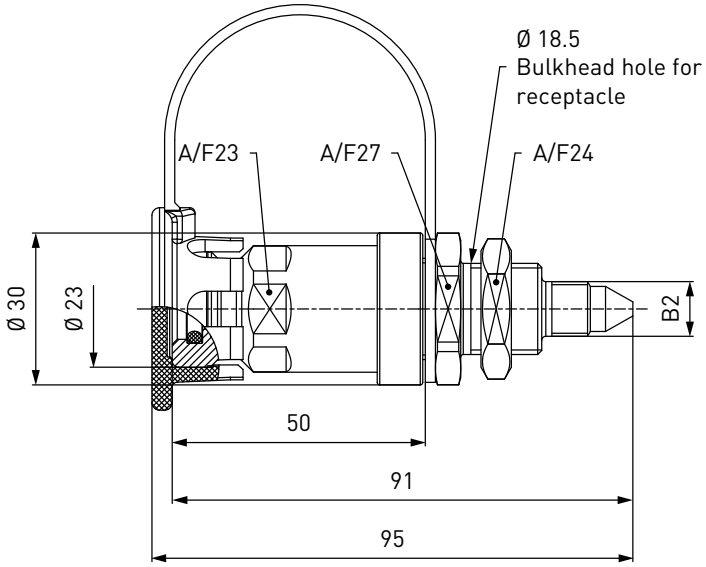
Part No.	Description	DN	Pressure (PN)	B2 (female thread)
C1-87745	TN1 H_2 70 MPa (e1)	3	70 MPa / 10,000 psi	UNF 7/16"-20*

* 60° cone, MP-fitting

Receptacle **TN1 H_2 70 MPa**

ORDERING | WEH® TN1 H_2 70 MPa Receptacle with male thread (autoclave)

approx. dimensions (mm)



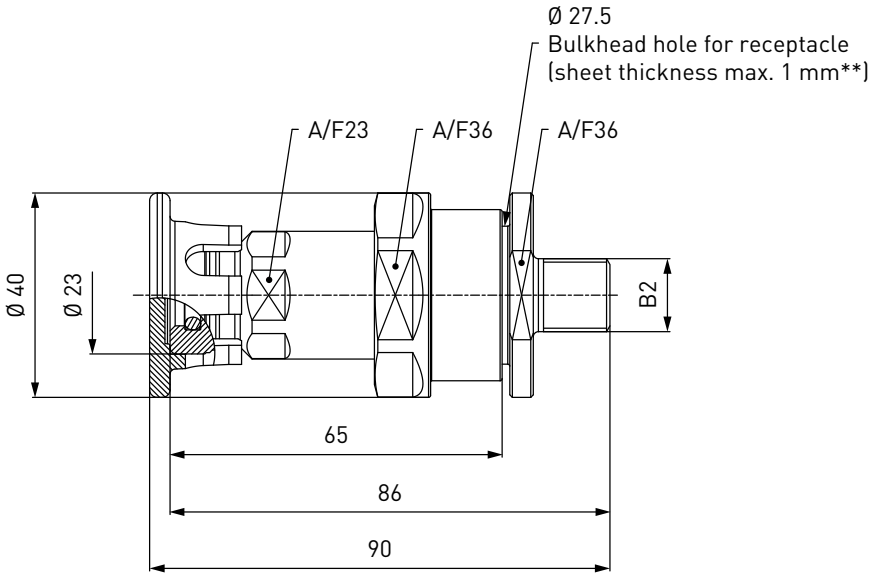
Part No.	Description	DN	Pressure (PN)	B2 (male thread)
C1-88565	TN1 H_2 70 MPa (e1)	3	70 MPa / 10,000 psi	UNF 7/16"-20*

* 60° outer cone

Receptacle **TN1 H_2 70 MPa**

ORDERING | WEH® TN1 H_2 70 MPa Receptacle with male thread, prepared for data interface

approx. dimensions (mm)



Part No.	Description	DN	Pressure (PN)	B2 (male thread)
C1-84883	TN1 H_2 70 MPa (e1)	3	70 MPa / 10,000 psi	UNF 9/16"-18 for sealing with O-Lok® Face Seal* for tube Ø 6 (1/4")

* Face Seal acc. to SAE J1453
** Please indicate when ordering if thicker sheet metals are needed!
Data interface not included!

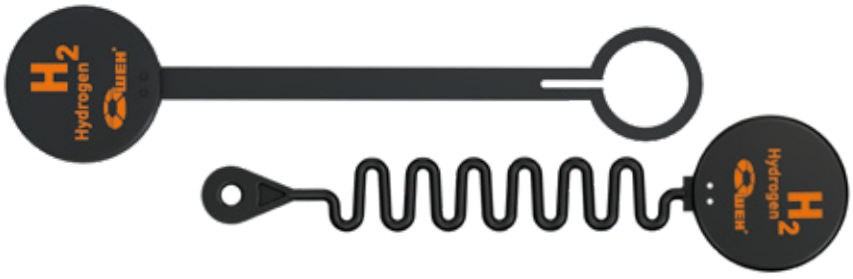
Other connection sizes and versions on request.

SPARE PARTS

Various parts are available as spares for the WEH® TN1 H_2 70 MPa Receptacle.

Protection cap

Protection cap with a strap to protect the TN1 H_2 70 MPa receptacle from dirt ingress.



Part No.	Description
C1-87803	Protection cap
C1-85984	Protection cap for receptacles prepared for data interface

Receptacle **TN1 H_2**

DESCRIPTION

Features
- Low-noise refueling
- Version with and without integrated self-cleaning particle filter (50 resp. 40 micron)
- Integrated high-flow check valve
- Sealing-friendly design
- Coding for pressure range / gas type

The WEH® TN1 H_2 Receptacle is designed specifically for hydrogen refueling of cars. Due to the internal aerodynamic design the receptacle gives low noise (no high frequency whistle) combined with maximum flow rate and fast filling. The receptacle is a very durable unit, minimizing maintenance and down-time. The WEH® TN1 H_2 Receptacle has an integrated check valve system which is designed to minimize the effect that dirt particles have on the sealing components within the receptacle. The TN1 H_2 is also equipped with a coding for pressure range and gas type.

Enhanced safety by integrating a particle filter
Using an integrated particle filter avoids dirt ingress and therefore leakage from the receptacle which gives enhanced safety.

Application
Receptacle for refueling of cars with hydrogen.

TN1 H_2 \ TK17 H_2 / TK16 H_2	25 MPa	35 MPa	35 MPa HF*	70 MPa
25 MPa	✓	✓		
35 MPa		✓		

* HF = High-Flow

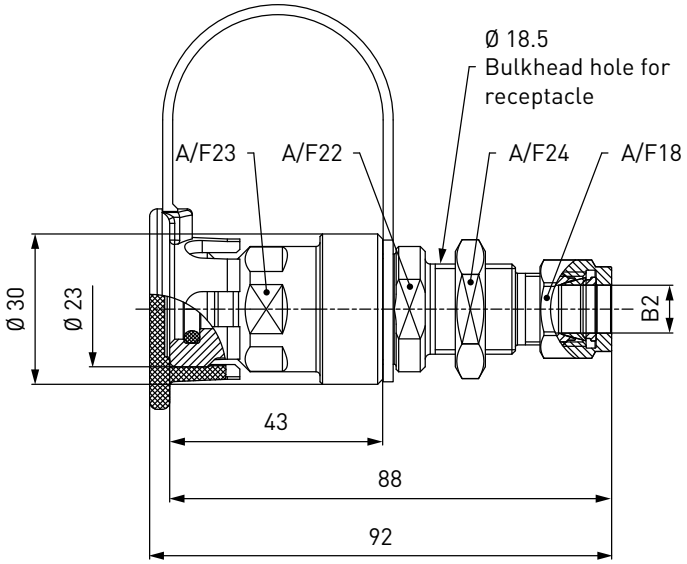
TECHNICAL DATA

Characteristics	Basic version	Options
Nominal bore (DN)	8 mm	On request
Pressure range	PN = 25 MPa (3,600 psi) | PS = 35 MPa PN = 35 MPa (5,000 psi) | PS = 45 MPa	Pressure range 11 MPa resp. 50 MPa on request
Temperature range	-40 °C up to +85 °C (-40 °F up to +185 °F)	On request
Material	Corrosion resistant	On request
Sealing material	Hydrogen resistant	On request
Design	With protection cap, with resp. without integrated particle filter (50 resp. 40 micron), integrated check valve and fittings (only for receptacles with tube fitting)	On request
Conformity / Tests / Approvals	e 1 00 0008 (Regulation (EC) No. 79/2009) SAE J2600:2002	

Receptacle **TN1 H_2**

ORDERING | WEH® TN1 H_2 Receptacle with tube fitting and filter (50 micron)

approx. dimensions (mm)



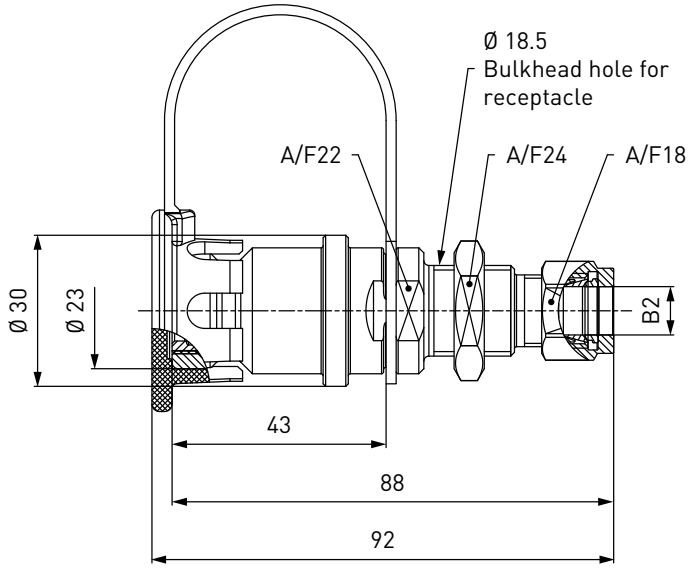
Part No.	Description	DN	Pressure (PN)	B2
C1-31315-X1-X01	TN1 H_2	8	25 MPa / 3,600 psi	Tube Ø 3/8"*
C1-31316	TN1 H_2 (e1)	8	35 MPa / 5,000 psi	Tube Ø 3/8"*
C1-70661-X01	TN1 H_2	8	25 MPa / 3,600 psi	Tube Ø 10"*
C1-35426	TN1 H_2 (e1)	8	35 MPa / 5,000 psi	Tube Ø 10*

* double ferrule fitting

Receptacle **TN1 H_2**

ORDERING | WEH® TN1 H_2 Receptacle with tube fitting, without filter

approx. dimensions (mm)



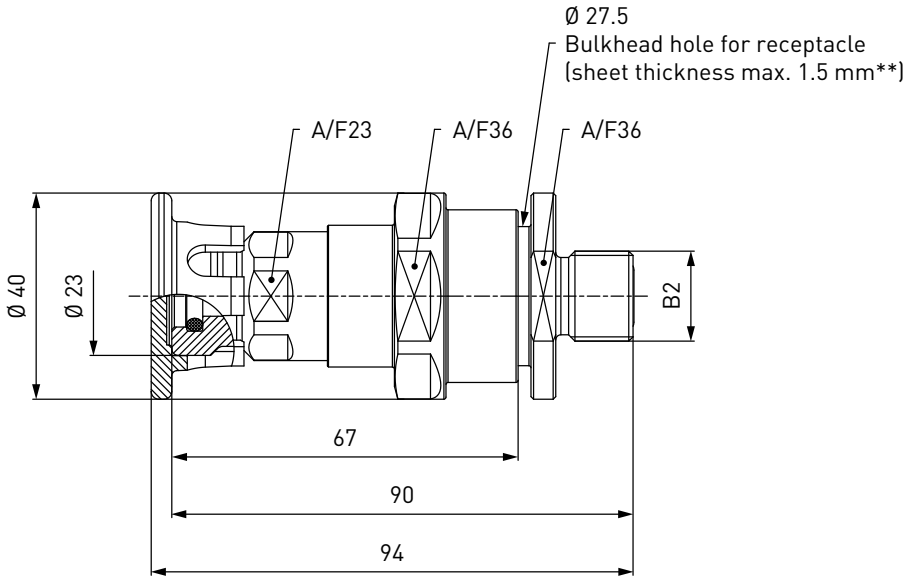
Part No.	Description	DN	Pressure (PN)	B2
C1-18480/4-X01	TN1 H_2	8	25 MPa / 3,600 psi	Tube Ø 3/8"*
C1-18481/4-X01	TN1 H_2	8	35 MPa / 5,000 psi	Tube Ø 3/8"*
C1-32456	TN1 H_2 (e1)	8	35 MPa / 5,000 psi	Tube Ø 10*

* double ferrule fitting

Receptacle **TN1 H_2**

ORDERING | WEH® TN1 H_2 Receptacle prepared for data interface, with filter (40 micron)

approx. dimensions (mm)



Part No.	Description	DN	Pressure (PN)	B2 (male thread)
C1-85965	TN1 H_2 (e1)	8	35 MPa / 5,000 psi	UN 11/16"-16 for sealing with O-Lok® Face Seal* for tube Ø 10 (3/8")

* Face Seal acc. to SAE J1453
** Please indicate when ordering if thicker sheet metals are needed!
Data interface and fittings not included!

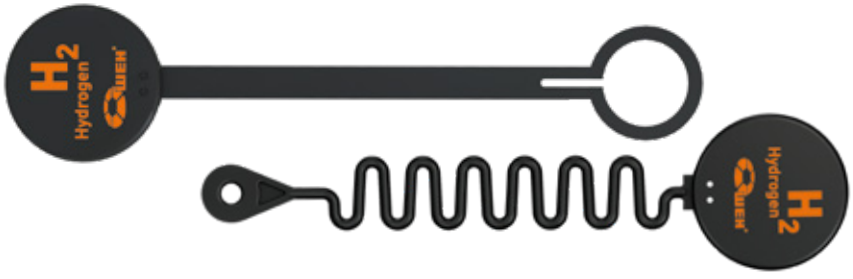
Other connection sizes and versions on request.

SPARE PARTS

Various parts are available as spares for the WEH® TN1 H_2 Receptacle.

Protection cap

Protection cap with a strap to protect the TN1 H_2 receptacle from dirt ingress.



Part No.	Description
C1-87803	Protection cap
C1-85984	Protection cap for receptacles prepared for data interface

Check valve **TVR1 H_2 70 MPa**

DESCRIPTION

Features
- Robust construction
- Low-noise opening and closing
- Corrosion resistant stainless steel
- High leak tightness

With the TVR1 H_2 70 MPa WEH offers a high performance check valve for use with hydrogen cars or fueling stations of the latest generation. The check valve system is designed to minimize the effect of dirt particles on the sealing components within the unit. The WEH® TVR1 H_2 70 MPa Check valve is constructed of corrosion-resistant stainless steel achieving a very durable unit due to its robust internal structure.

Application
Check valve for cars (e1 approval), also suitable for installation in fueling stations.

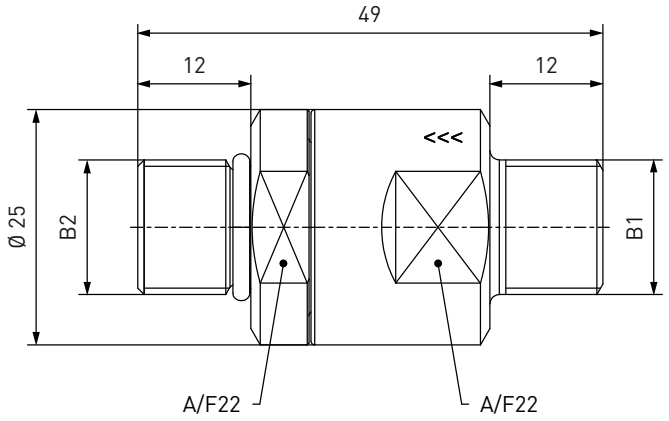
TECHNICAL DATA

Characteristics	Basic version	Options
Nominal bore (DN)	Max. 4 mm, depending on design	On request
Pressure range	PN = 70 MPa (10,000 psi) | PS = 87.5 MPa	
Temperature range	-40 °C up to +85 °C (-40 °F up to +185 °F)	On request
Material	Corrosion resistant stainless steel	On request
Sealing material	Hydrogen resistant	On request
Design	With resp. without integrated particle filter (20 micron) and incl. fittings (only for check valves with tube fitting)	On request
Conformity / Tests / Approvals	e 1 00 0009 (Regulation (EC) No. 79/2009)	

Check valve **TVR1 H_2 70 MPa**

ORDERING | WEH® TVR1 H_2 70 MPa Check valve with male thread on both sides (Face Seal at the inlet)

approx. dimensions (mm)



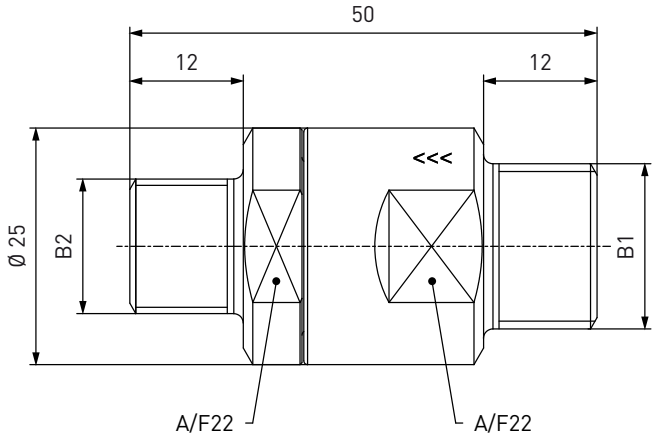
Part No.	Description	DN	Pressure (PN)	B1 (male thread)	B2 (male thread)
C1-117366	TVR1 H_2 70 MPa (e1)	4	70 MPa / 10,000 psi	UNF 9/16"-18 for sealing with O-Lok® Face Seal** for tube Ø 6 (1/4")	UNF 9/16"-18*

* acc. to SAE J1926
** Face Seal acc. to SAE J1453

Check valve **TVR1 H_2 70 MPa**

ORDERING | WEH® TVR1 H_2 70 MPa Check valve with male thread on both sides (Face Seal on both sides)

approx. dimensions (mm)



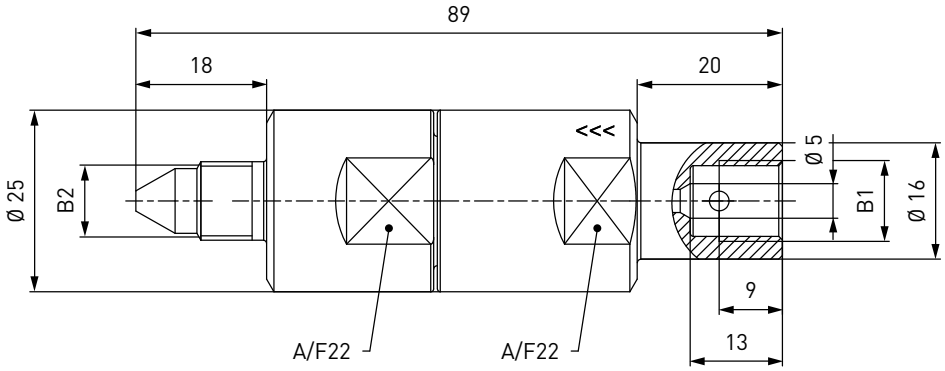
Part No.	Description	DN	Pressure (PN)	B1 (male thread)	B2 (male thread)
C1-76959	TVR1 H_2 70 MPa (e1)	4	70 MPa / 10,000 psi	UN 11/16"-16 for sealing with O-Lok® Face Seal* for tube Ø 10 (3/8")	UNF 9/16"-18 for sealing with O-Lok® Face Seal* for tube Ø 6 (1/4")

* Face Seal acc. to SAE J1453

Check valve **TVR1 H_2 70 MPa**

ORDERING | WEH® TVR1 H_2 70 MPa Check valve with female / male thread and filter (20 micron)

approx. dimensions (mm)



Part No.	Description	DN	Pressure (PN)	B1 (female thread)	B2 (male thread)
C1-87743	TVR1 H_2 70 MPa (e1)	2.5	70 MPa / 10,000 psi	UNF 7/16"-20*	UNF 7/16"-20**

* 60° cone, MP-fitting
** 59° cone, MP-fitting

Other connection sizes and versions on request.

Check valve **TVR1 H_2**

DESCRIPTION

Features
- Robust construction
- Low-noise opening and closing
- Corrosion resistant stainless steel
- High leak tightness

With the TVR1 H_2 WEH offers a high performance check valve for use with hydrogen. The check valve system is designed to minimize the effect of dirt particles on the sealing components within the unit. The WEH® TVR1 H_2 Check valve is constructed of corrosion-resistant stainless steel achieving a very durable unit due to its robust internal structure.

Application
Check valve for cars (e1 approval), also suitable for installation in fueling stations.

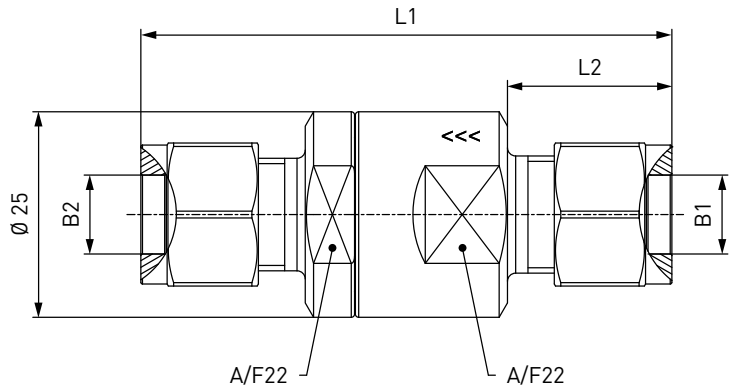
TECHNICAL DATA

Characteristics	Basic version	Options
Nominal bore (DN)	Max. 8 mm, depending on design	On request
Pressure range	PN = 35 MPa (5,000 psi) | PS = 45 MPa	
Temperature range	-40 °C up to +85 °C (-40 °F up to +185 °F)	On request
Material	Corrosion resistant stainless steel (inner components partially made of brass: C1-18485)	On request
Sealing material	Hydrogen resistant	On request
Design	Incl. fittings (only for check valves with tube fitting)	With integrated particle filter
Conformity / Tests / Approvals	e 1 00 0005 (Regulation (EC) No. 79/2009)	

Check valve **TVR1 H_2**

ORDERING | WEH® TVR1 H_2 Check valve with tube fitting on both sides

approx. dimensions (mm)



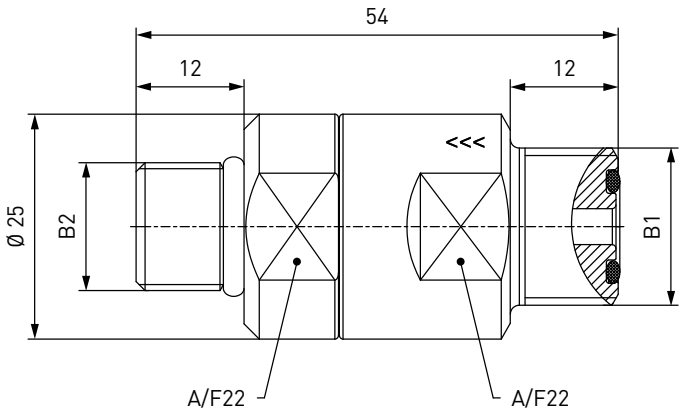
Part No.	Description	DN	Pressure (PN)	B1	B2	L1	L2
C1-42741	TVR1 H_2 (e1)	5	35 MPa / 5,000 psi	Tube Ø 6*	Tube Ø 6*	63.0	18.0
C1-33824-X01	TVR1 H_2	5	35 MPa / 5,000 psi	Tube Ø 6*	Tube Ø 6*	63.0	18.0
C1-35547	TVR1 H_2 (e1)	5	35 MPa / 5,000 psi	Tube Ø 1/4"*	Tube Ø 1/4"*	64.5	18.5
C1-133820-X01	TVR1 H_2	5	35 MPa / 5,000 psi	Tube Ø 1/4"*	Tube Ø 1/4"*	64.5	18.5
C1-133821	TVR1 H_2 (e1)	6	35 MPa / 5,000 psi	Tube Ø 8*	Tube Ø 8*	66.0	20.5
C1-43260-X01	TVR1 H_2	6	35 MPa / 5,000 psi	Tube Ø 8*	Tube Ø 8*	66.0	20.5
C1-18485	TVR1 H_2 (e1)	8	35 MPa / 5,000 psi	Tube Ø 3/8"*	Tube Ø 3/8"*	65.0	20.0
C1-81898-X01	TVR1 H_2	8	35 MPa / 5,000 psi	Tube Ø 3/8"*	Tube Ø 3/8"*	65.0	20.0
C1-43215	TVR1 H_2 (e1)	8	35 MPa / 5,000 psi	Tube Ø 10*	Tube Ø 10*	65.0	20.0
C1-133822-X01	TVR1 H_2	8	35 MPa / 5,000 psi	Tube Ø 10*	Tube Ø 10*	65.0	20.0

* double ferrule fitting

Check valve **TVR1 H_2**

ORDERING | WEH® TVR1 H_2 Check valve with male thread on both sides

approx. dimensions (mm)



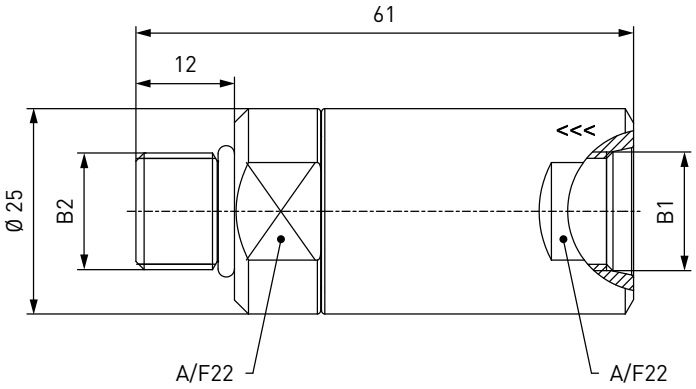
Part No.	Description	DN	Pressure (PN)	B1 (male thread)	B2 (male thread)
C1-108879	TVR1 H_2 (e1)	4	35 MPa / 5,000 psi	UN 11/16"-16 for sealing with O-Lok® Face Seal** for tube Ø 10 (3/8")	UNF 9/16"-18*

* acc. to SAE J1926
** Face Seal acc. to SAE J1453

Check valve **TVR1 H_2**

ORDERING | WEH® TVR1 H_2 Check valve with female and male thread

approx. dimensions (mm)



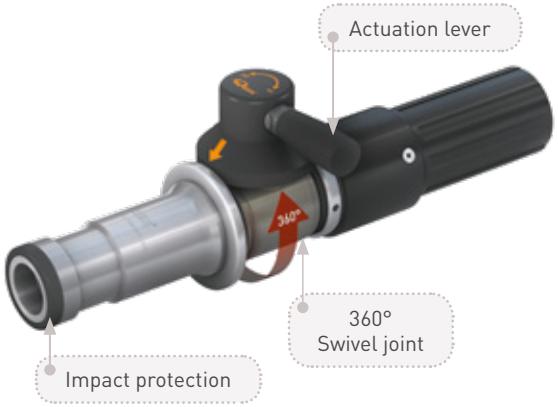
Part No.	Description	DN	Pressure (PN)	B1 (female thread)	B2 (male thread)
C1-34575-X2-X01	TVR1 H_2	8	35 MPa / 5,000 psi	UNF 9/16"-18*	UNF 9/16"-18*

* acc. to SAE J1926

Other connection sizes and versions on request.

Fueling nozzle **TK16 H_2 High-Flow**

DESCRIPTION



Features
- Compatible with WEH® TN1 H_2 High-Flow receptacle profile
- WEH® EASY-TURN 360° swivel joint for actuation lever
- Easy operation
- Higher flow rate ➡ shorter filling times
- Filling rate approx. 100 - 120 g/sec.
- Recirculation of the vented gas
- Plastic thermal protection
- WEH® Jaw locking mechanism
- High-grade materials
- Coding for pressure range / gas type

The WEH® TK16 H_2 High-Flow Fueling nozzle provides a faster hydrogen refueling solution for buses and trucks. An increased flow rate achieves even faster filling times.
The actuation lever is located on the integrated swivel joint making it easy to rotate into the optimal actuating position. The actuation lever needs less effort to actuate the nozzle.
The internal coding for pressure range and gas type ensures that the TK16 H_2 High-Flow can be connected to the compatible WEH® Receptacles according to the opposite table and also prevents the risk of confusion with natural gas.

TK16 H_2 HF* \ TN1 H_2	25 MPa	35 MPa	35 MPa HF*	70 MPa
35 MPa HF*			✓	

* HF = High-Flow

The WEH® TK16 H_2 High-Flow offers optimum safety to the operator.
The fueling nozzle remains connected to the receptacle until the gas between inlet valve and receptacle is depressurized.

Application
Fueling nozzle for H_2 fast filling of buses and trucks at self-service fueling stations.

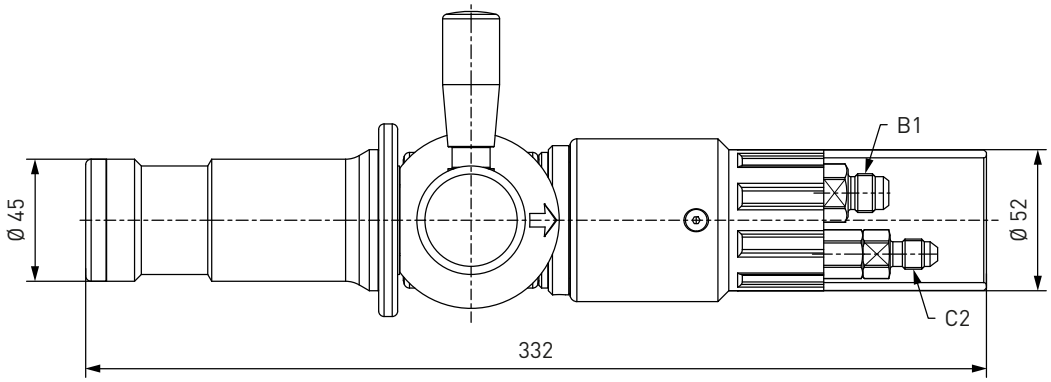
TECHNICAL DATA

Characteristics	Basic version	Options
Nominal bore (DN)	8 mm	On request
Pressure range	PN = 35 MPa (5,000 psi) | PS = 45 MPa	
Temperature range	-40 °C up to +85 °C (-40 °F up to +185 °F)	On request
Material	Corrosion resistant	On request
Sealing material	Hydrogen resistant	On request
Design	With plastic thermal protection and gas recirculation	On request
Weight	Approx. 1.8 kg (3.97 lbs.)	
Conformity / Tests / Approvals	SAE J2600:2002	

Fueling nozzle **TK16 H_2 High-Flow**

ORDERING | WEH® TK16 H_2 High-Flow Fueling nozzle

approx. dimensions (mm)



Part No.	Description	Pressure (PN)	B1 (male thread)	C2 (male thread)
C1-85042-X01	TK16 H_2 High-Flow	35 MPa / 5,000 psi	UNF 9/16"-18*	UNF 7/16"-20*

* acc. to SAE J514, 37°

Fueling assemblies consisting of fueling nozzle, hose set and breakaway coupling are available on request.

ACCESSORIES

The following accessories are available for the WEH® TK16 H_2 High-Flow Fueling nozzle:

Filling and venting hoses

Filling and venting hose for connecting fueling nozzle and TSA1 H_2 breakaway coupling, complete with fittings and press-fittings supported by coil spring stubs.
Design: max. operating pressure PS: 45 MPa (6,530 psi) / nominal bore (DN): 6.35 mm

Part No.	B1/B2 (female thread)	C1/C2 (female thread)	Hose length
C1-60917	UNF 9/16"-18*	UNF 7/16"-20*	3 m
C1-60920	UNF 9/16"-18*	UNF 7/16"-20*	4 m
C1-60923	UNF 9/16"-18*	UNF 7/16"-20*	5 m

* acc. to SAE JIC, 37°

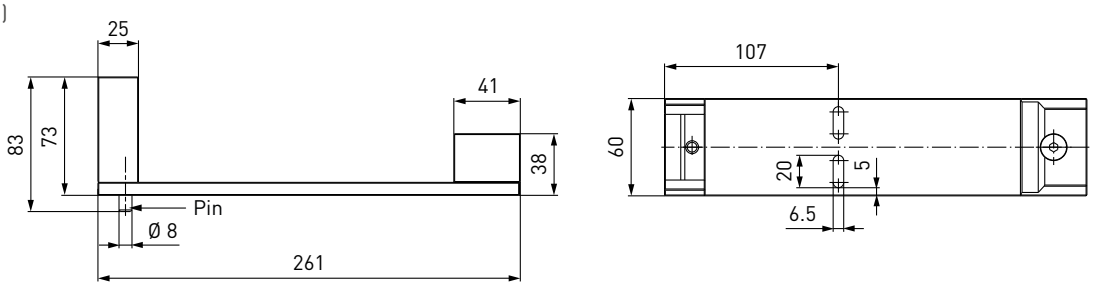
Fueling nozzle **TK16 H_2 High-Flow**

Dispenser mounting

Mounting for safe attachment of the fueling nozzle to the dispenser. Design: Aluminium, stainless steel

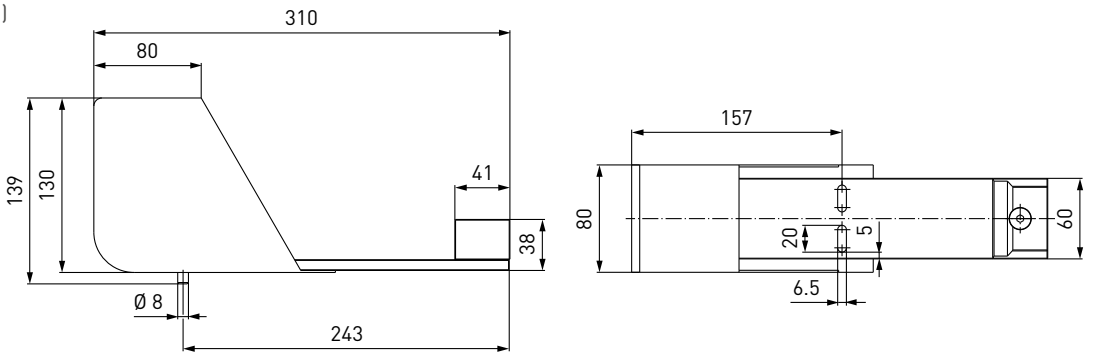
Switch actuated (with pin) resp. not switch actuated mounting

approx. dimensions (mm)



Switch actuated mounting with weather protection

approx. dimensions (mm)



Part No.	Description
C1-86860	Mounting (switch actuated)
C1-109880	Mounting (not switch actuated)
C1-109678	Mounting (switch actuated) with weather protection

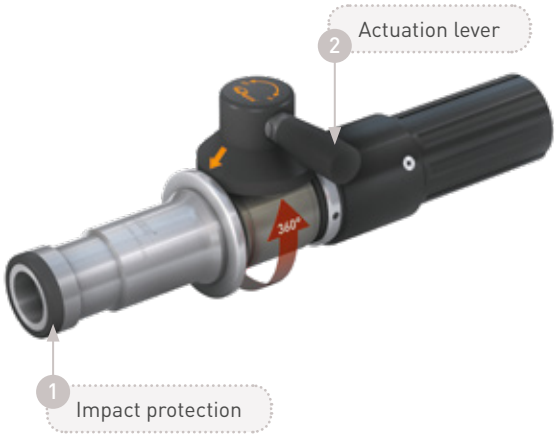
Fueling nozzle **TK16 H_2 High-Flow**

Fittings

Stainless steel fittings for connecting port 'B1' to the filling hose resp. the port 'C2' to the venting hose are available on request.

SPARE PARTS

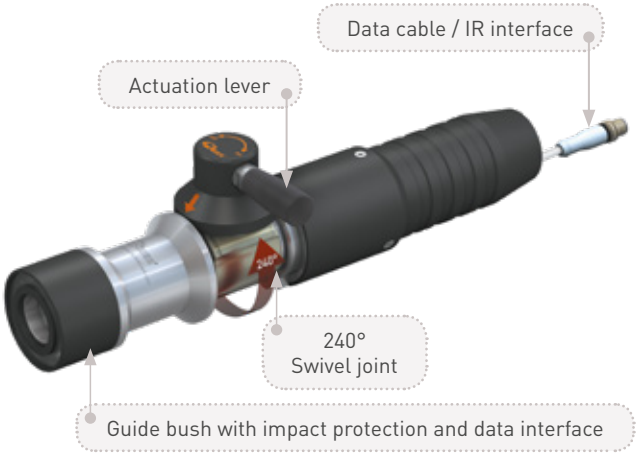
Various parts are available as spares for the WEH® TK16 H_2 High-Flow Fueling nozzle.



Part No.	Description
E80-85045	1 Impact protection
W72504	2 Actuation lever
E99-44923	Maintenance spray

Fueling nozzle **TK16 H_2 High-Flow with data interface**

DESCRIPTION



Features
- Compatible with WEH® TN1 H_2 High-Flow and WEH® TN1 H_2 70 MPa receptacle profile
- Integrated data interface acc. to SAE J2601
- WEH EASY-TURN® 240° swivel joint for actuation lever
- Easy operation
- Higher flow rate ➡ shorter filling times
- Filling rate approx. 100 - 120 g/sec.
- Recirculation of the vented gas
- Plastic thermal protection
- WEH® Jaw locking mechanism
- High-grade materials
- Coding for pressure range / gas type

The WEH® TK16 H_2 High-Flow Fueling nozzle with data interface provides a faster hydrogen refueling solution for buses and trucks. An increased flow rate achieves even faster filling times.
The actuation lever is located on the integrated swivel joint making it easy to rotate into the optimal actuating position.
The actuation lever needs less effort to actuate the nozzle.
The internal coding for pressure range and gas type ensures that the TK16 H_2 High-Flow with data interface can be connected to the compatible WEH® Receptacles according to the opposite table and also prevents the risk of confusion with natural gas.
Furthermore the fueling nozzle has an interface (IR) for data transfer between vehicle and fueling station.

TK16 H_2 HF* IR** \ TN1 H_2	25 MPa	35 MPa	35 MPa HF*	70 MPa
35 MPa HF*			✓	✓

* HF = High-Flow
** IR = infrared data interface

The WEH® TK16 H_2 High-Flow with data interface offers optimum safety to the operator.
The fueling nozzle remains connected to the receptacle until the gas between inlet valve and receptacle is depressurized.

Application
Fueling nozzle for H_2 fast filling of buses and trucks at self-service fueling stations.

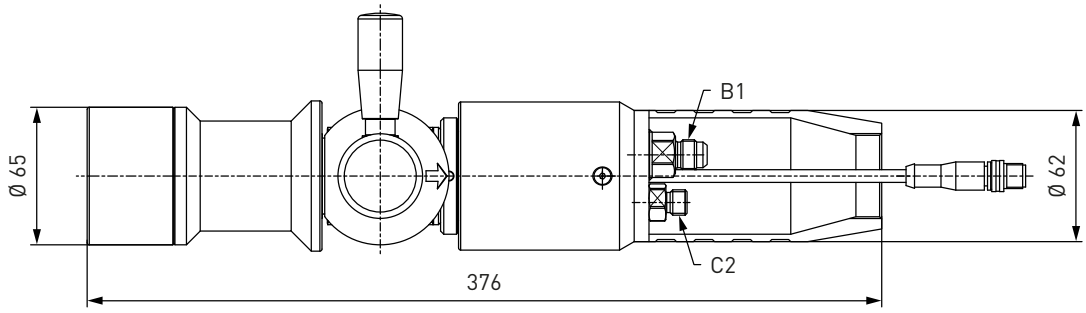
TECHNICAL DATA

Characteristics	Basic version	Options
Nominal bore (DN)	8 mm	On request
Pressure range	PN = 35 MPa (5,000 psi) | PS = 45 MPa	
Temperature range	-40 °C up to +85 °C (-40 °F up to +185 °F)	On request
Material	Corrosion resistant	On request
Sealing material	Hydrogen resistant	On request
Design	With plastic thermal protection, gas recirculation and and data interface	On request
Weight	Approx. 2.4 kg (5.29 lbs.)	
Conformity / Tests / Approvals	SAE J2600:2002 Data interface: SAE J2601 / ATEX	Data interface: SAE J2601 / NEC Class 1 Zone 1

Fueling nozzle **TK16 H_2 High-Flow with data interface**

ORDERING | WEH® TK16 H_2 High-Flow Fueling nozzle with data interface

approx. dimensions (mm)



Part No.	Description	Pressure (PN)	B1 (male thread)	C2 (male thread)
C1-94315-X01	TK16 H_2 High-Flow	35 MPa / 5,000 psi	UNF 9/16"-18*	M12x1.5

* acc. to SAE J514, 37°

On request the TK16 H_2 High-Flow fueling nozzle with data interface is also available with registration acc. to NEC Class 1 Zone 1 (acc. to SAE J2601).
Fueling assemblies consisting of fueling nozzle, hose set and breakaway coupling are available on request.

ACCESSORIES

The following accessories are available for the WEH® TK16 H_2 High-Flow Fueling nozzle with data interface:

Filling and venting hoses

Filling and venting hose for connecting fueling nozzle and TSA1 H_2 breakaway coupling, complete with hose fittings, plastic spiral hose and cable for data interface.
Design: max. operating pressure PS: 45 MPa (6,530 psi) / nominal bore (DN): 6.35 mm (filling hose) resp. 2 mm (venting hose)

Part No.	B1/B2 (female thread)	C1/C2 (female thread)	Hose length
C1-90698	UNF 9/16"-18*	M12x1.5	3 m
C1-94428	UNF 9/16"-18*	M12x1.5	4 m
C1-94429	UNF 9/16"-18*	M12x1.5	5 m

* acc. to SAE JIC, 37°

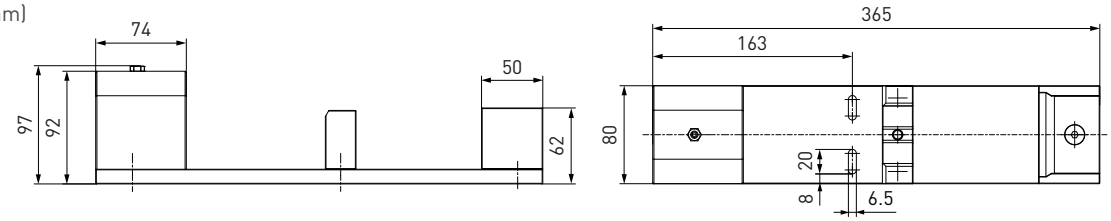
Fueling nozzle **TK16 H_2 High-Flow with data interface**

Dispenser mounting

Mounting for safe attachment of the fueling nozzle to the dispenser. Design: Aluminium, stainless steel

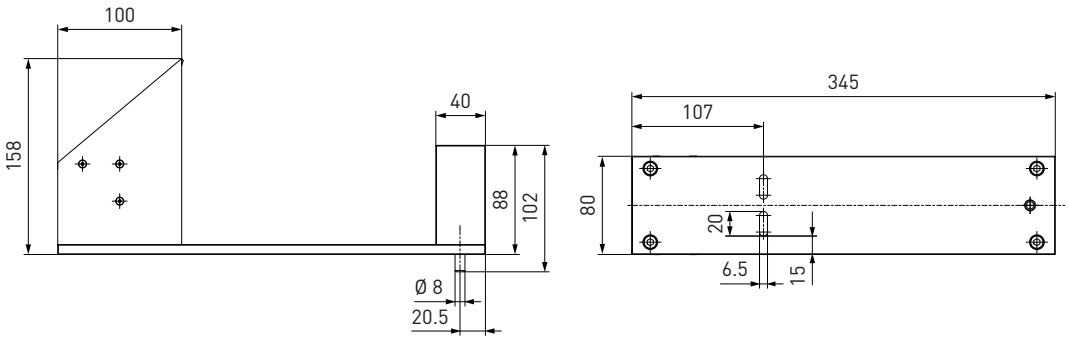
Not switch actuated mounting with protection of front sleeve

approx. dimensions (mm)



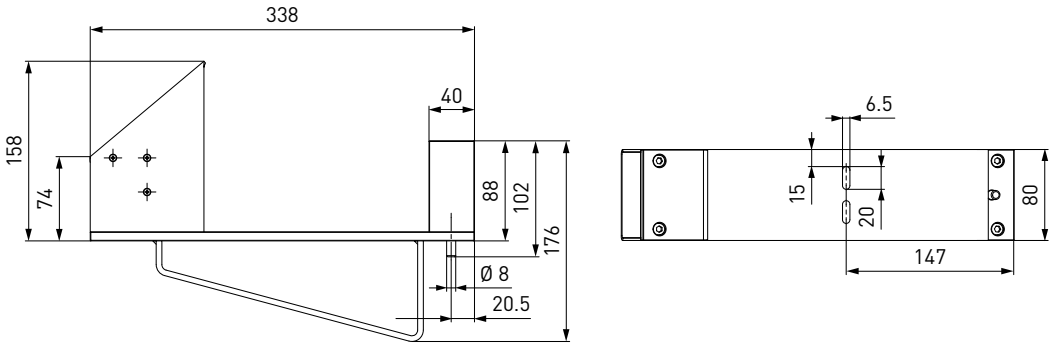
Switch actuated mounting with weather protection

approx. dimensions (mm)



Switch actuated mounting with weather protection and angle plate 15°

approx. dimensions (mm)



Part No.	Description
C1-94671	Mounting (not switch actuated) with protection of front sleeve
C1-90675	Mounting (switch actuated) with weather protection
C1-114632	Mounting (switch actuated) with weather protection and angle plate 15°

Fueling nozzle **TK16 H_2 High-Flow with data interface**

Fittings

Stainless steel fittings for connecting port 'B1' to the filling hose resp. the port 'C2' to the venting hose are available on request.

Data cable

Data cable for connecting controller and dispenser.

Part No.	Description
E68-96193	Data cable 3.45 m

SPARE PARTS

Various parts are available as spares for the WEH® TK16 H_2 High-Flow Fueling nozzle with data interface.

Part No.	Description
W72504	1 Actuation lever
E99-44923	Maintenance spray

Fueling nozzle **TK25 H_2**

DESCRIPTION

Features
- Compatible with WEH® TN5 H_2 receptacle profile
- Safety features when not connected
- Extremely high flow rate ➡ short filling times
- Recirculation of the vented gas
- Plastic thermal protection
- WEH® Jaw locking mechanism
- High-grade materials
- Coding for pressure range / gas type

The WEH® TK25 H_2 Fueling nozzle meets all requirements placed on a fueling nozzle for bus and truck refueling.
Thus making hydrogen refueling as easy as gasoline refueling.
Simply place the TK25 H_2 fueling nozzle onto the receptacle and with a 180° turn of the actuation lever the filling procedure can start.

The internal coding for pressure range and gas type ensures that the TK25 H_2 with data interface can be connected to the compatible WEH® Receptacles according to the opposite table and also prevents the risk of confusion with natural gas.

TK25 H_2 \ TN5 H_2	25 MPa	35 MPa
25 MPa	✓	✓
35 MPa		✓

The WEH® TK25 H_2 offers optimum safety to the operator.
The fueling nozzle remains connected to the receptacle until the gas between inlet valve and receptacle is depressurized.

Application
Fueling nozzle for H_2 fast filling of buses and trucks at self-service fueling stations.

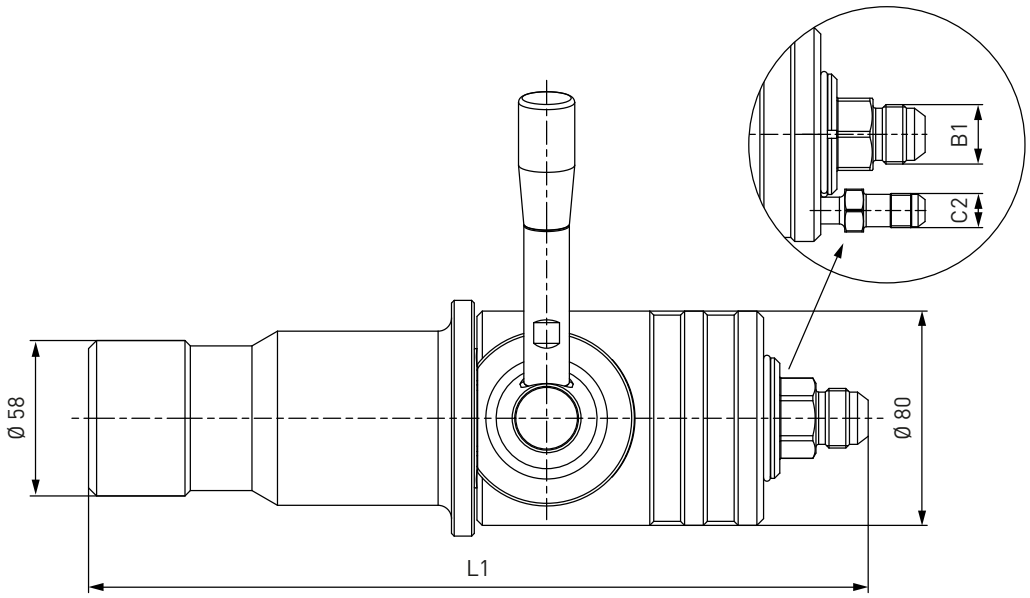
TECHNICAL DATA

Characteristics	Basic version	Options
Nominal bore (DN)	12 mm	On request
Pressure range	PN = 25 MPa (3,600 psi) | PS = 35 MPa PN = 35 MPa (5,000 psi) | PS = 45 MPa	
Temperature range	-40 °C up to +85 °C (-40 °F up to +185 °F)	On request
Material	Corrosion resistant	On request
Sealing material	Hydrogen resistant	On request
Design	With plastic thermal protection and gas recirculation	On request
Weight	Approx. 4.6 kg (10.14 lbs.)	

Fueling nozzle **TK25 H_2**

ORDERING | WEH® TK25 H_2 Fueling nozzle

approx. dimensions (mm)



Part No.	Description	Pressure (PN)	B1 (male thread)	C2 (male thread)	L1
C1-62529-X01	TK25 H_2	25 MPa / 3,600 psi	UNF 7/8"-14*	UNF 9/16"-18*	290
C1-62527-X1-X01	TK25 H_2	35 MPa / 5,000 psi	UNF 7/8"-14*	UNF 9/16"-18*	297

* acc. to SAE J514, 37°

Fueling assemblies consisting of fueling nozzle, hose set and breakaway coupling are available on request.

ACCESSORIES

The following accessories are available for the WEH® TK25 H_2 Fueling nozzle:

Filling and venting hoses

Filling and venting hose for connecting fueling nozzle and TSA5 H_2 breakaway coupling, complete with fittings and press-fittings supported by coil spring stubs.
Design: max. operating pressure PS: 45 MPa (6,530 psi) / nominal bore (DN): 6.35 mm

Part No.	B1/B2 (female thread)	C1/C2 (female thread)	Hose length
C1-152552	UNF 7/8"-14*	UNF 9/16"-18*	3 m
E68-152553	UNF 7/8"-14*	UNF 9/16"-18*	4 m
E68-152554	UNF 7/8"-14*	UNF 9/16"-18*	5 m

* acc. to SAE JIC, 37°

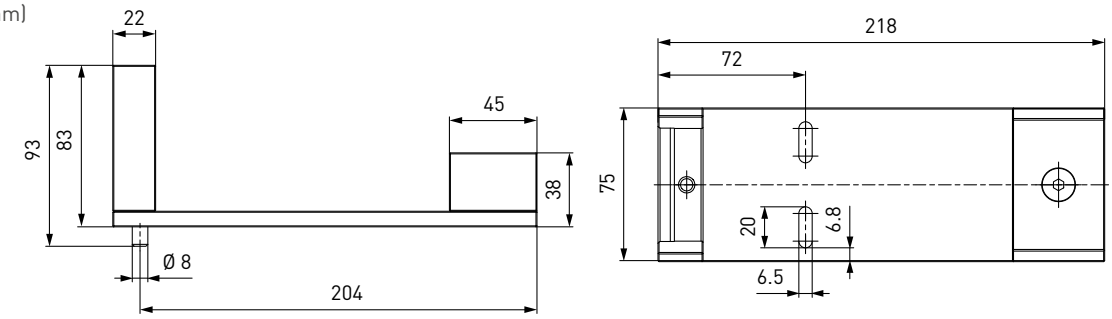
Fueling nozzle **TK25 H_2**

Dispenser mounting

Mounting for safe attachment of the fueling nozzle to the dispenser. Design: Aluminium, stainless steel

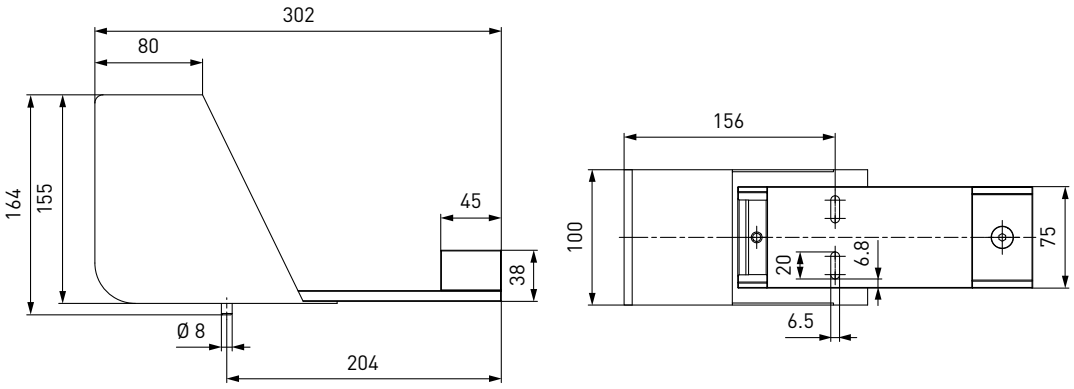
Switch actuated mounting (C1-83005)

approx. dimensions (mm)



Switch actuated mounting with weather protection (C1-82153)

approx. dimensions (mm)



Part No.	Description
C1-83005	Mounting (switch actuated)
C1-82153	Mounting (switch actuated) and weather protection

Fueling nozzle **TK25 H_2**

Fittings

Stainless steel fittings for connecting port 'B1' to the filling hose resp. the port 'C2' to the venting hose are available on request.

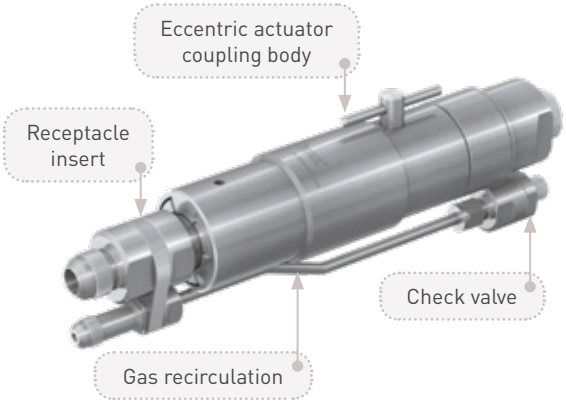
SPARE PARTS

Various parts are available as spares for the WEH® TK25 H_2 Fueling nozzle.

Part No.	Description
W6631	1 Actuation lever
E99-44923	Maintenance spray

Breakaway coupling **TSA5 H_2**

DESCRIPTION



Features
- Re-usable without factory reservicing
- Installation at the dispenser
- Small compact design
- Integrated cleanable filter (40 micron)
- Check valve at venting line
- No additional tool necessary

The WEH® TSA5 H_2 Breakaway coupling offers additional safety for your bus and truck fueling station. The breakaway is installed between the dispenser and the filling/venting hose. In the event of accidental deployment, e.g. driving a vehicle from the dispenser with the nozzle remaining in the vehicle fuel port, the coupling will separate the connections between dispenser and hose sealing both ends. This protects largely the receptacle, the fueling nozzle and the dispenser against damage. The detached coupling can be easily reattached and placed back in service after having been function tested.
The integrated filter provides clean hydrogen and is easy to maintain.
The WEH® Breakaway coupling consists of a coupling body, a receptacle insert and a gas recirculation with check valve.

On request we also offer fueling assemblies consisting of a fueling nozzle, a hose set and a breakaway coupling.

Application
Breakaway coupling for bus and truck fueling stations for direct installation at the dispenser.

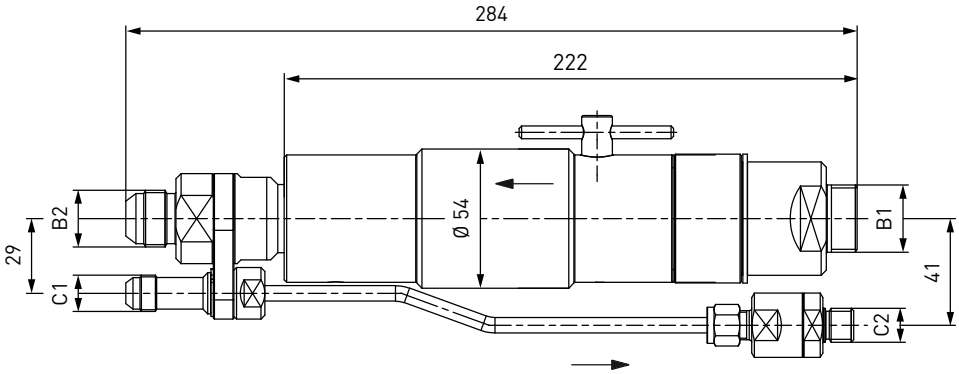
TECHNICAL DATA

Characteristics	Basic version	Options
Nominal bore (DN)	12 mm	On request
Pressure range	PN = 35 MPa (5,000 psi) | PS = 45 MPa	
Temperature range	-40 °C up to +85 °C (-40 °F up to +185 °F)	On request
Breakaway force	300 - 600 N	On request
Material	Corrosion resistant stainless steel, aluminium	On request
Sealing material	Hydrogen resistant	On request
Design	With gas recirculation and filter (40 micron)	On request

Breakaway coupling **TSA5 H_2**

ORDERING | WEH® TSA5 H_2 Breakaway coupling with gas recirculation

approx. dimensions (mm)



Part No.	Description	DN	Pressure (PN)	B1 (male thread)	B2 (male thread)	C1 (male thread)	C2 (male thread)
C1-17941-X7-X01	TSA5 H_2 with filter (40 micron)	12	35 MPa / 5,000 psi	G3/4"	UNF 7/8"-14*	UNF 9/16"-18*	G1/4"

* acc. to SAE J514, 37°

Breakaway coupling **TSA5 H_2**

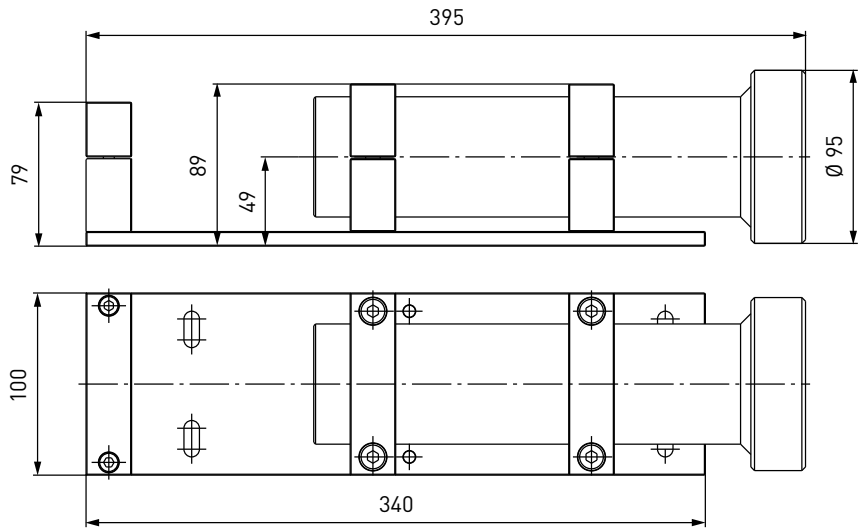
ACCESSORIES

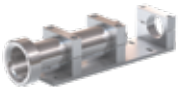
The following accessories are available for the WEH® TSA5 H_2 Breakaway coupling:

Dispenser mounting for breakaway coupling

The breakaway coupling can also be used with a dispenser mounting. The mounting is firmly attached to the dispenser. The integrated guide tube provides a straight pull-off force. The dispenser mounting can be used instead of a return pulley (hose pulley).

approx. dimensions (mm)





Part No.	Description
C1-82110	Dispenser mounting for TSA5 H_2

Breakaway coupling **TSA5 H_2**

Filling and venting hoses

Suitable filling and venting hoses for the TSA5 H_2 breakaway coupling are available on request.

Fittings

Stainless steel fittings for connecting port 'B2' to the filling hose resp. port 'C1' to the venting hose are available on request.

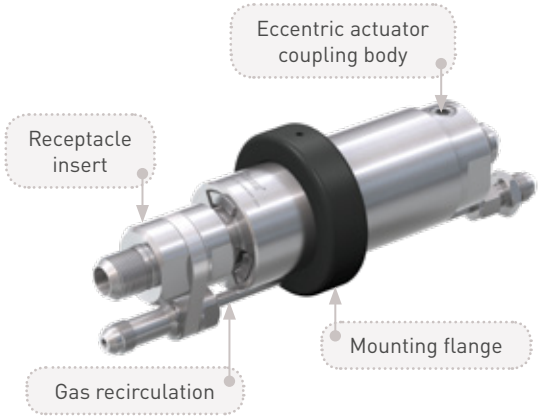
SPARE PARTS

Various parts are available as spares for the WEH® TSA5 H_2 Breakaway coupling.

Part No.	Description
W83706	Receptacle insert for TSA5 H_2 with gas recirculation
C1-119726	Spare seal set for receptacle insert W63194
E69-9062	Wire filter insert 40 micron
E69-46414	Copper disc for G1/4" male thread (port C2)
E69-45951	Copper disc for G3/4" male thread (port B1)

Inline breakaway coupling **TSA6 H_2**

DESCRIPTION



Features
- Re-usable without factory reservicing
- Installation inbetween the filling and venting hoses
- Small compact design
- Mounting flange
- Eccentric actuation via an allen wrench

The WEH® TSA6 H_2 Inline breakaway coupling which is installed inbetween the filling and venting hoses, is also available for bus and truck fueling stations. In the event of accidental deployment, e.g. driving a vehicle from the dispenser with the nozzle remaining in the vehicle fuel port, the coupling will separate the connections between dispenser and hose sealing both ends. This protects largely the receptacle, the fueling nozzle and the dispenser against damage. The detached coupling can be easily reattached and placed back in service after having been function tested.
The WEH® Breakaway coupling consists of a coupling body, a receptacle insert and a gas recirculation.

On request we also offer fueling assemblies consisting of a fueling nozzle, a hose set and an inline break-away coupling.

Application
Inline breakaway coupling for bus and truck fueling stations for installation inbetween the filling and venting hoses.

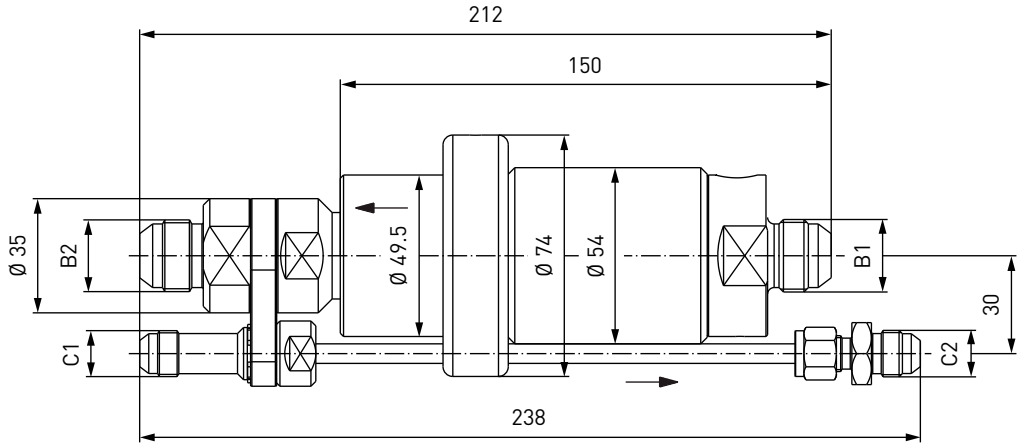
TECHNICAL DATA

Characteristics	Basic version	Options
Nominal bore (DN)	12 mm	On request
Pressure range	PN = 35 MPa (5,000 psi) | PS = 45 MPa	
Temperature range	-40 °C up to +85 °C (-40 °F up to +185 °F)	On request
Breakaway force	300 - 600 N	On request
Material	Corrosion resistant stainless steel, aluminium	On request
Sealing material	Hydrogen resistant	On request
Design	With gas recirculation	On request

Inline breakaway coupling **TSA6 H_2**

ORDERING | WEH® TSA6 H_2 Inline breakaway coupling with gas recirculation

approx. dimensions (mm)



Part No.	Description	DN	Pressure (PN)	B1/B2 (male thread)	C1/C2 (male thread)
C1-82323-X01	TSA6 H_2	12	35 MPa / 5,000 psi	UNF 7/8"-14*	UNF 9/16"-18*

* acc. to SAE J514, 37°

ACCESSORIES

The following accessories are available for the WEH® TSA6 H_2 Inline breakaway coupling:

Filling and venting hoses

Suitable filling and venting hoses for the TSA6 H_2 inline breakaway coupling are available on request.

Fittings

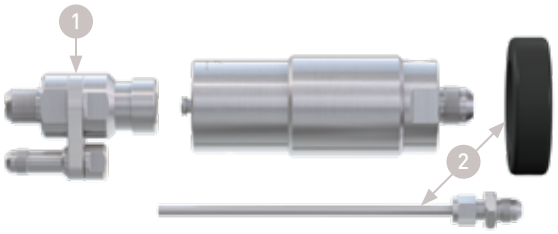
Stainless steel fittings for connecting port 'B1/B2' to the filling hose resp. port 'C1/C2' to the venting hose are available on request.

Inline breakaway coupling **TSA6 H_2**

SPARE PARTS

Various parts are available as spares for the WEH® TSA6 H_2 Inline breakaway coupling.

TSA6 H_2 with gas recirculation



Part No.	Description
W83706	1 Receptacle insert for TSA6 H_2 with gas recirculation
B200B-119726	Spare seal set for receptacle insert W83706
W139031	2 Spare part set consisting of a mounting flange, gas recirculation tube and a firmly mounted fitting

Inline breakaway coupling **TSA6 H_2**

Receptacle **TN1 H_2 High-Flow**

DESCRIPTION

Features
- Flow rate approx. 100 - 120 g/sec.
- Low-noise refueling
- Integrated self-cleaning particle filter (40 micron)
- Integrated high-flow check valve
- Sealing-friendly design
- Coding for pressure range / gas type

The WEH® TN1 H_2 High-Flow Receptacle was developed to be used with the WEH® TK16 H_2 High-Flow Fueling nozzle, enabling to refuel buses and trucks from now on at car fueling stations. Refueling with a higher speed occurs either with a TK16 H_2 Fueling nozzle or with a TK16 H_2 High-Flow Fueling nozzle. Due to the internal aerodynamic design the receptacle gives low noise (no high frequency whistle) combined with maximum flow rate and fast filling. The receptacle is a very durable unit, minimizing maintenance and down-time. The WEH® TN1 H_2 High-Flow Receptacle has an integrated check valve system which is designed to minimize the effect that dirt particles have on the sealing components within the receptacle. The TN1 H_2 High-Flow is also equipped with a coding for pressure range and gas type.

Enhanced safety by integrating a particle filter
Using an integrated particle filter avoids dirt ingress and therefore leakage from the receptacle which gives enhanced safety.

Application
Receptacle for refueling of buses and trucks with hydrogen.

TN1 H_2 HF* \ TK17 H_2 / TK16 H_2	25 MPa	35 MPa	35 MPa HF*	70 MPa
35 MPa	✓	✓	✓	

* HF = High-Flow

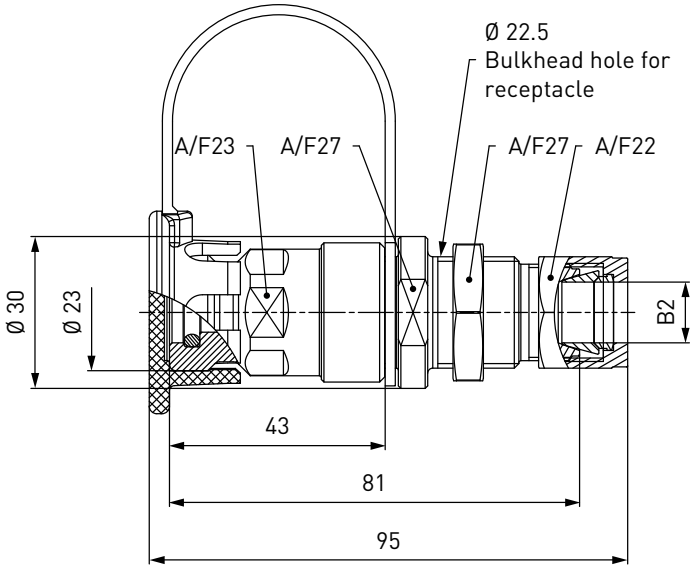
TECHNICAL DATA

Characteristics	Basic version	Options
Nominal bore (DN)	Max. 8 mm, depending on design	On request
Pressure range	PN = 35 MPa (5,000 psi) | PS = 45 MPa	
Temperature range	-40 °C up to +85 °C (-40 °F up to +185 °F)	On request
Material	Corrosion resistant	On request
Sealing material	Hydrogen resistant	On request
Design	With protection cap, integrated particle filter (40 micron), integrated check valve and fittings (only for receptacles with tube fitting)	On request
Conformity / Tests / Approvals	e 1 00 0003 (Regulation (EC) No. 79/2009) SAE J2600:2002	

Receptacle **TN1 H_2 High-Flow**

ORDERING | WEH® TN1 H_2 High-Flow Receptacle with tube fitting

approx. dimensions (mm)



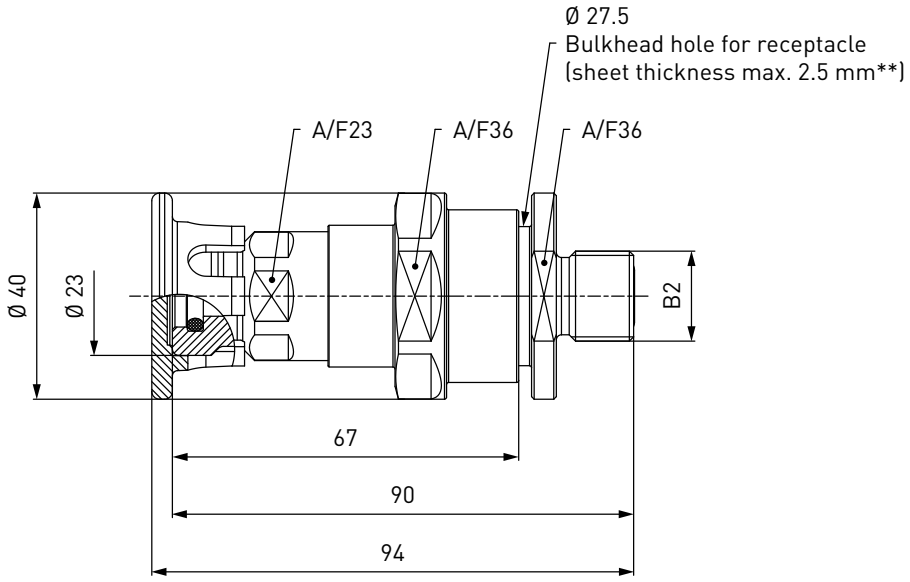
Part No.	Description	DN	Pressure (PN)	B2
C1-85040	TN1 H_2 High-Flow (e1)	8	35 MPa / 5,000 psi	Tube Ø 12*

* double ferrule fitting

Receptacle **TN1 H_2 High-Flow**

ORDERING | WEH® TN1 H_2 High-Flow Receptacle with male thread, prepared for data interface

approx. dimensions (mm)



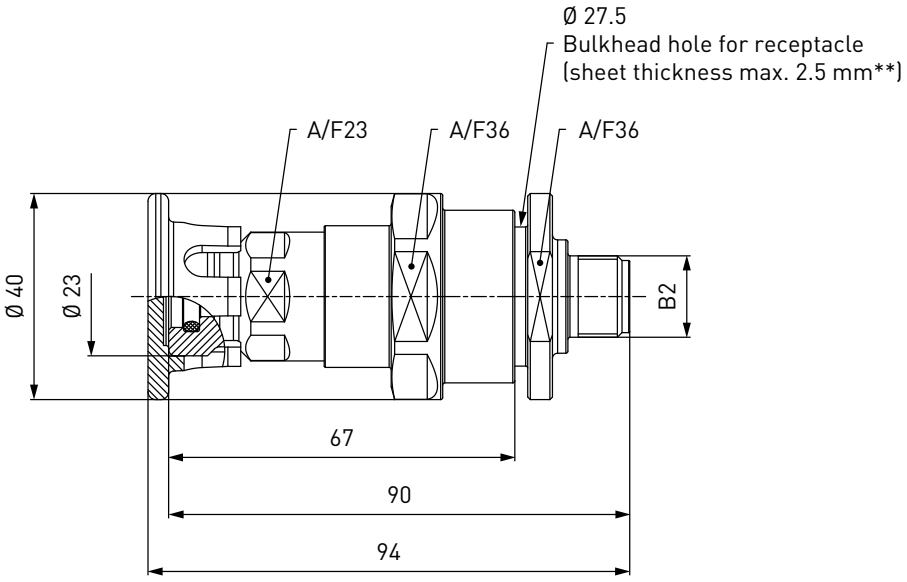
Part No.	Description	DN	Pressure (PN)	B2 (male thread)
C1-94306	TN1 H_2 High-Flow (e1)	6	35 MPa / 5,000 psi	UN 11/16"-16 for sealing with O-Lok® Face Seal* for tube Ø 10 (3/8")
C1-112679	TN1 H_2 High-Flow (e1)	8	35 MPa / 5,000 psi	UN 13/16"-16 for sealing with O-Lok® Face Seal* for tube Ø 12.7 (1/2")

* Face Seal acc. to SAE J1453
** Please indicate when ordering if thicker sheet metals are needed!
Data interface not included!

Receptacle **TN1 H_2 High-Flow**

ORDERING | WEH® TN1 H_2 High-Flow Receptacle with tube fitting, prepared for data interface

approx. dimensions (mm)



Part No.	Description	DN	Pressure (PN)	B2
C1-105920	TN1 H_2 High-Flow (e1)	6	35 MPa / 5,000 psi	Tube Ø 10*

* double ferrule fitting
** Please indicate when ordering if thicker sheet metals are needed!
Data interface and fittings not included!

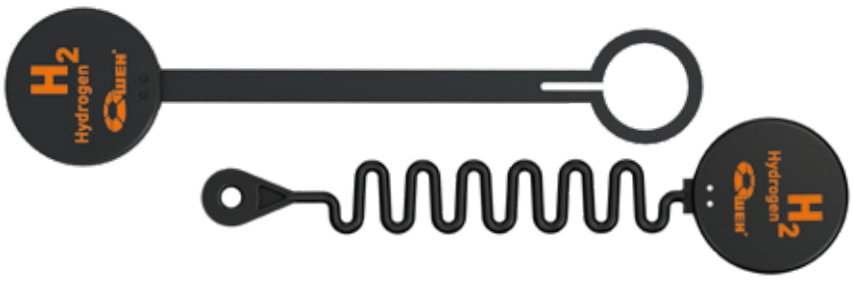
Other connection sizes and versions on request.

SPARE PARTS

Various parts are available as spares for the WEH® TN1 H_2 High-Flow Receptacle.

Protection cap

Protection cap with a strap to protect the TN1 H_2 High-Flow receptacle from dirt ingress.



Part No.	Description
C1-87803	Protection cap
C1-85984	Protection cap for receptacles prepared for data interface

Receptacle **TN5 H_2**

DESCRIPTION

Features
- Low-noise refueling
- Integrated self-cleaning particle filter (50 micron)
- Integrated high-flow check valve
- Sealing-friendly design
- Coding for pressure range / gas type

The WEH® TN5 H_2 Receptacle is designed specifically for hydrogen refueling of buses and trucks. Due to the internal aero-dynamic design the receptacle gives low noise (no high frequency whistle) combined with maximum flow rate and fast filling. The receptacle is a very durable unit, minimizing maintenance and down-time. The WEH® TN5 H_2 Receptacle has an integrated check valve system which is designed to minimize the effect that dirt particles have on the sealing components within the receptacle. The TN5 H_2 is also equipped with a coding for pressure range and gas type.

Enhanced safety by integrating a particle filter
Using an integrated particle filter avoids dirt ingress and therefore leakage from the receptacle which gives enhanced safety.

Application
Receptacle for refueling of buses and trucks with hydrogen, to be used with WEH® TK25 H_2 Fueling nozzles.

TN5 H_2 \ TK25 H_2	25 MPa	35 MPa
25 MPa	✓	✓
35 MPa		✓

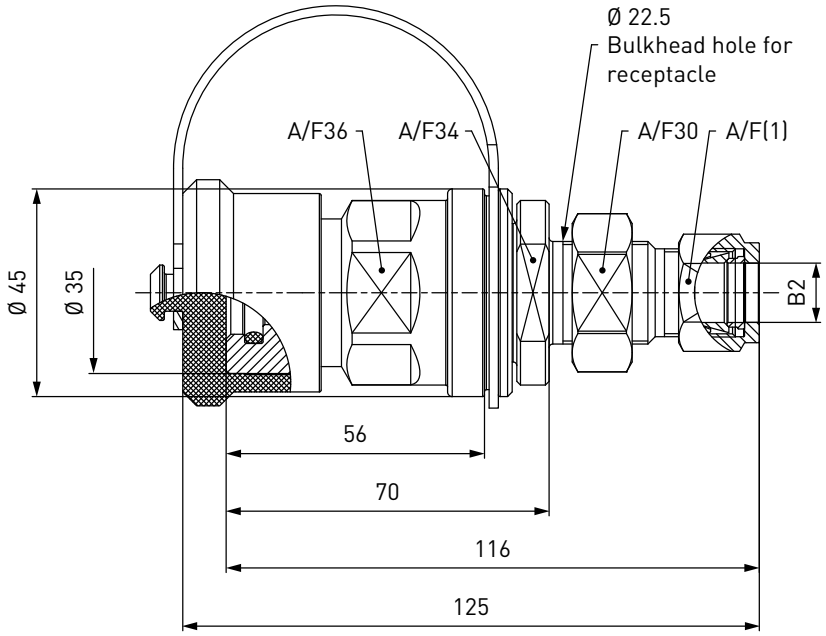
TECHNICAL DATA

Characteristics	Basic version	Options
Nominal bore (DN)	Max. 12 mm, depending on design	On request
Pressure range	PN = 25 MPa (3,600 psi) | PS = 35 MPa PN = 35 MPa (5,000 psi) | PS = 45 MPa	
Temperature range	-40 °C up to +85 °C (-40 °F up to +185 °F)	On request
Material	Corrosion resistant	On request
Sealing material	Hydrogen resistant	On request
Design	With protection cap, integrated particle filter (50 micron), integrated check valve and fittings	On request

Receptacle **TN5 H_2**

ORDERING | WEH® TN5 H_2 Receptacle with tube fitting

approx. dimensions (mm)



Part No.	Description	DN	Pressure (PN)	B2	A/F(1)
C1-49772-X1-X01	TN5 H_2	8	35 MPa / 5,000 psi	Tube Ø 12*	22
C1-90840-X01	TN5 H_2	10	25 MPa / 3,600 psi	Tube Ø 1/2"*	22
C1-46714-X01	TN5 H_2	10	35 MPa / 5,000 psi	Tube Ø 1/2"*	22
C1-19136-X1-X01	TN5 H_2	12	35 MPa / 5,000 psi	Tube Ø 16*	25

* double ferrule fitting

Other connection sizes and versions on request.

SPARE PARTS

Various parts are available as spares for the WEH® TN5 H_2 Receptacle.

Protection cap

Protection cap with a strap to protect the TN5 H_2 receptacle from dirt ingress.

Part No.	Description
C1-134306	Protection cap

Check valve **TVR5 H_2**

DESCRIPTION

Features
- Robust construction
- Low-noise opening and closing
- Corrosion resistant stainless steel
- High leak tightness

The WEH® TVR5 H_2 is the largest of our check valves. It is most efficient and developed specifically for H_2 buses and trucks. The check valve system is designed to minimize the effect of dirt particles on the sealing components within the unit. The WEH® TVR5 H_2 Check valve is constructed of corrosion-resistant stainless steel achieving a very durable unit due to its robust internal structure.

Application
Check valve for buses and trucks, also suitable for installation in fueling stations.

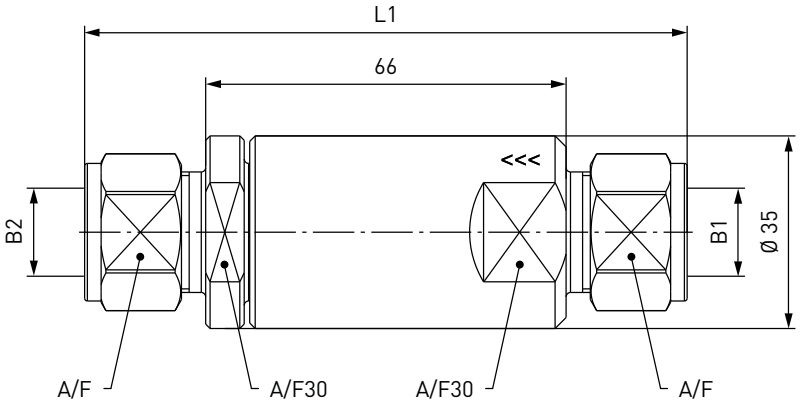
TECHNICAL DATA

Characteristics	Basic version	Options
Nominal bore (DN)	Max. 14 mm, depending on design	On request
Pressure range	PN = 35 MPa (5,000 psi) | PS = 45 MPa	
Temperature range	-40 °C up to +85 °C (-40 °F up to +185 °F)	On request
Material	Corrosion resistant stainless steel	On request
Sealing material	Hydrogen resistant	On request
Design	Incl. fittings (only for check valves with tube fitting)	On request

Check valve **TVR5 H_2**

ORDERING | WEH® TVR5 H_2 Check valve with tube fitting on both sides

approx. dimensions (mm)

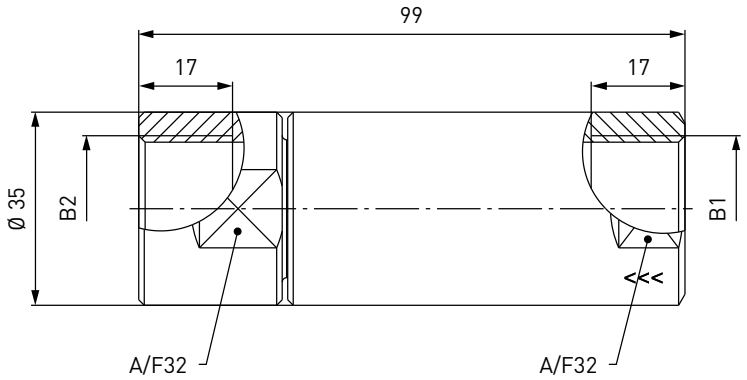


Part No.	Description	DN	Pressure (PN)	B1	B2	L1	A/F
C1-30216-X1-X01	TVR5 H_2	11	35 MPa / 5,000 psi	Tube Ø 12*	Tube Ø 12*	110	22
C1-30215-X1-X01	TVR5 H_2	14	35 MPa / 5,000 psi	Tube Ø 16*	Tube Ø 16*	111	25

* double ferrule fitting

ORDERING | WEH® TVR5 H_2 Check valve with female thread on both sides

approx. dimensions (mm)



Part No.	Description	DN	Pressure (PN)	B1 (female thread)	B2 (female thread)
C1-43326-X1-X01	TVR5 H_2	12	35 MPa / 5,000 psi	G3/4"*	G3/4"*

* acc. to DIN 3852-2

Other connection sizes and versions on request.

Filter **TSF2 H_2**

DESCRIPTION

Features
- For hydrogen free of impurities
- Filter insert can be cleaned
- For installation onboard H_2 vehicles and in fueling stations
- Also suitable as prefilter for inline breakaways

Contaminants in the gas flow can enter the vehicle's storage tank during refueling. These dirt particles in the hydrogen fuel may cause damage to the sealing components. WEH, therefore, offers the WEH® TSF2 H_2 Filter Series for clean hydrogen. Solid particles are captured reliably.
The filter element can be removed and is re-usable after having been cleaned.
The WEH® TSF2 H_2 Filter is mainly used for fueling stations and dispensers.
In order to meet the different requirements of the dispenser manufacturers, WEH offers a wide variety of connection configurations - tube fitting / female thread on both ends or female and male thread.
For use as a prefilter in the WEH® TSA2 H_2 Inline breakaway coupling, WEH offers a special design with male and female thread.

Application
Filter for installation onboard H_2 vehicles (e1 approval) and in fueling stations.

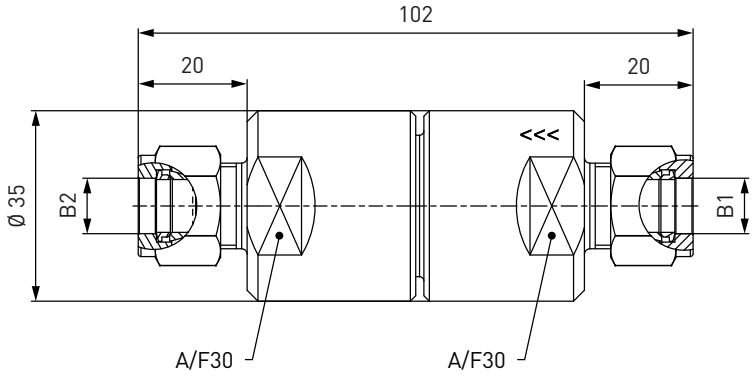
TECHNICAL DATA

Characteristics	Basic version	Options
Nominal bore (DN)	Max. 8 mm, depending on design	On request
Pressure range	PN = 30 MPa (4,350 psi) | PS = 40 MPa PN = 35 MPa (5,000 psi) | PS = 45 MPa	
Temperature range	-40 °C up to +85 °C (-40 °F up to +185 °F)	On request
Material	Corrosion resistant stainless steel	On request
Sealing material	Hydrogen resistant	On request
Filter element	40 resp. 20 micron	On request
Design	Incl. fittings (only for filters with tube fitting)	On request
Conformity / Tests / Approvals	e1 approval on request	

Filter **TSF2 H_2**

ORDERING | WEH® TSF2 H_2 Filter with tube fitting on both sides

approx. dimensions (mm)

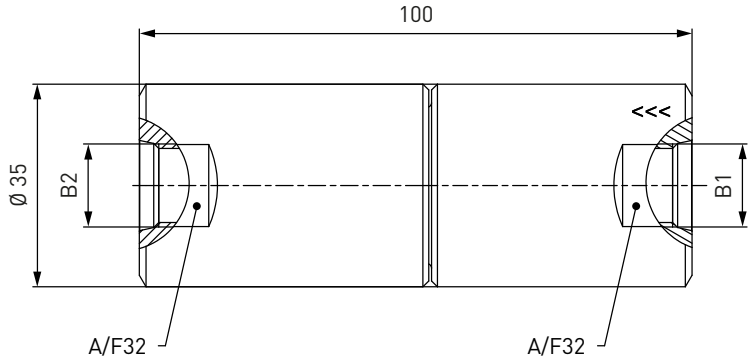


Part No.	Description	Filter (micron)	DN	Pressure (PN)	B1	B2
C1-54095-X01	TSF2 H_2	40	4	35 MPa / 5,000 psi	Tube Ø 1/4"*	Tube Ø 1/4"*
C1-18487-X01	TSF2 H_2	40	8	35 MPa / 5,000 psi	Tube Ø 3/8"*	Tube Ø 3/8"*
C1-36033-X01	TSF2 H_2	40	8	35 MPa / 5,000 psi	Tube Ø 10*	Tube Ø 10*

* double ferrule fitting

ORDERING | WEH® TSF2 H_2 Filter with female thread on both sides

approx. dimensions (mm)



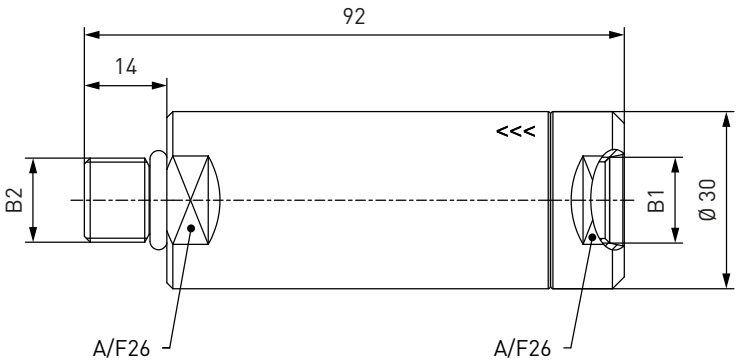
Part No.	Description	Filter (micron)	DN	Pressure (PN)	B1 (female thread)	B2 (female thread)
C1-34576-X01	TSF2 H_2	40	8	35 MPa / 5,000 psi	UNF 9/16"-18*	UNF 9/16"-18*

* acc. to SAE J1926

Filter **TSF2 H_2**

ORDERING | WEH® TSF2 H_2 Filter with female and male thread

approx. dimensions (mm)

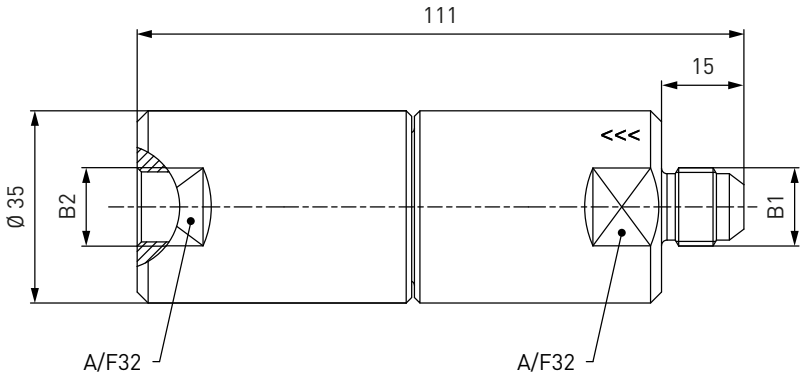


Part No.	Description	Filter (micron)	DN	Pressure (PN)	B1 (female thread)	B2 (male thread)
C1-17011-X01	TSF2 H_2	40	8	30 MPa / 4,350 psi	UNF 9/16"-18*	UNF 9/16"-18*

* acc. to SAE J1926

ORDERING | WEH® TSF2 H_2 Filter with male and female thread (also suitable as prefilter for TSA2 H_2)

approx. dimensions (mm)



Part No.	Description	Filter (micron)	DN	Pressure (PN)	B1 (male thread)	B2 (female thread)
C1-134710-X01	TSF2 H_2	40	8	35 MPa / 5,000 psi	UNF 9/16"-18*	UNF 9/16"-18*
C1-134711-X01	TSF2 H_2	20	8	35 MPa / 5,000 psi	UNF 9/16"-18*	UNF 9/16"-18*

* acc. to SAE J514, 37°

Filter **TSF2 H_2**

SPARE PARTS

Various parts are available as spares for the WEH® TSF2 H_2 Filter.

Part No.	Description
E69-9061	Wire filter insert 40 micron (incl. spring and o-ring)
E69-67754	Wire filter insert 20 micron (incl. spring and o-ring)

Coalescing filter **TSF2 H_2**

DESCRIPTION

Features
- Fine filter with high particle removal efficiency
- (efficiency of approx. 99.9% > 0.3 micron)
- For installation onboard H_2 vehicles and in fueling stations
- Protection of critical components in the fuel system
- Wear resistant
- Ease of maintenance

Clean, filtered gases are essential to guarantee the proper function of components for vehicles and fueling stations when refueling with hydrogen. The WEH® TSF2 H_2 Coalescing filter was developed to remove particles from the gas flow. Coalescing filters are more effective in comparison to regular particle filters due to the high particle removal efficiency. When filtering the gas flow, the coalescing filter reliably removes contaminants such as oil, water and dirt particles which are contained in the gas. This contamination is isolated by the coalescing filter. Hydrogen flows through the filter, whereas contaminants such as oil, water and other aerosols coalesce, and drop into the sump of the filter, where they are separated into a drain port.
The WEH® TSF2 H_2 is easy to maintain and can be installed onboard vehicles and in fueling stations at any time.

Application
Coalescing filter for installation onboard H_2 vehicles (e1 approval) and in fueling stations.

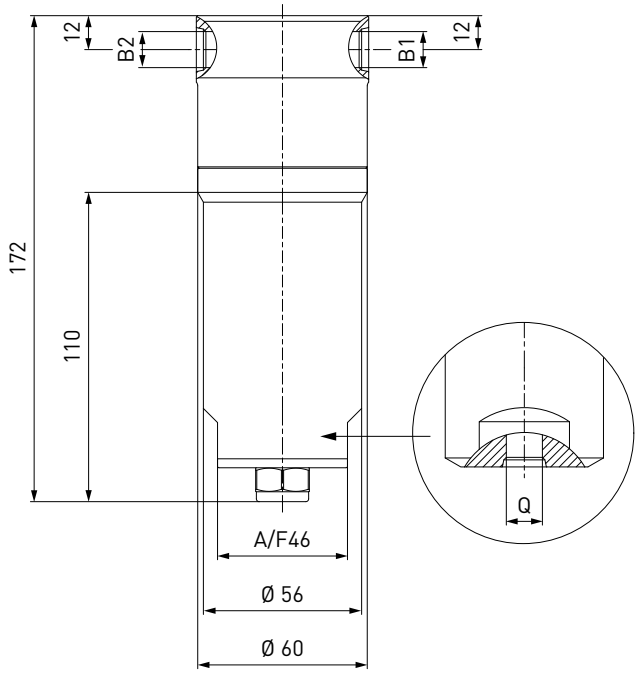
TECHNICAL DATA

Characteristics	Basic version	Options
Nominal bore (DN)	10 mm	On request
Pressure range	PN = 35 MPa (5,000 psi) | PS = 45 MPa	
Temperature range	-40 °C up to +85 °C (-40 °F up to +185 °F)	On request
Material	Corrosion resistant stainless steel	On request
Sealing material	Hydrogen resistant	On request
Filter element	< 1 micron	On request
Design	Incl. plug	On request
Conformity / Tests / Approvals	e 1 00 0004 (Regulation (EC) No. 79/2009)	

Coalescing filter **TSF2 H_2**

ORDERING | WEH® TSF2 H_2 Coalescing filter with filter cartridge Ø 38.0 mm

approx. dimensions (mm)



Part No.	Description	Pressure (PN)	B1 (female thread)	B2 (female thread)	Q (female thread)
C1-89635	TSF2 H_2 (e1)	35 MPa / 5,000 psi	UNF 9/16"-18*	UNF 9/16"-18*	UNF 9/16"-18*
C1-120710-X01	TSF2 H_2	35 MPa / 5,000 psi	UNF 9/16"-18*	UNF 9/16"-18*	UNF 9/16"-18*

* acc. to SAE J1926

SPARE PARTS

Various parts are available as spares for the WEH® TSF2 H_2 Coalescing filter.

Plug

Plug with polyurethane o-ring for closing the drain port 'Q' (end of the filter).

Part No.	Description	Port (male thread)
E69-93336	Plug with o-ring	UNF 9/16"-18*

* acc. to SAE J1926

Filter cartridge

For TSF2 H_2 coalescing filter with filter cartridge Ø 38.0 mm.

Part No.	Description	Length
E69-89626	Filter cartridge	90.0 mm

Filter **TSF4 H_2**

DESCRIPTION

Features
- For hydrogen free of impurities
- Filter insert can be cleaned
- For installation onboard H_2 vehicles and in fueling stations

Contaminants in the gas flow can enter the vehicle's storage tank during refueling. These dirt particles in the hydrogen fuel may cause damage to the sealing components. WEH, therefore, offers the WEH® TSF4 H_2 Filter Series for clean hydrogen. Solid particles are captured reliably.
The filter element can be removed and is re-usable after having been cleaned.
The filter is mainly used for onboard H_2 powered vehicles, but can also be used for fueling stations and dispensers.
The WEH® TSF4 H_2 is available as round filter and as T-filter.
The round filter is available with tube fitting or male and female thread.
The T-filter has been specially designed for use in H_2 buses and trucks.
The filter can be removed for cleaning purposes without tedious unscrewing of the media lines.

TSF4 H_2 T-Filter

Application
Filter for installation onboard H_2 vehicles (e1 approval) and in fueling stations.

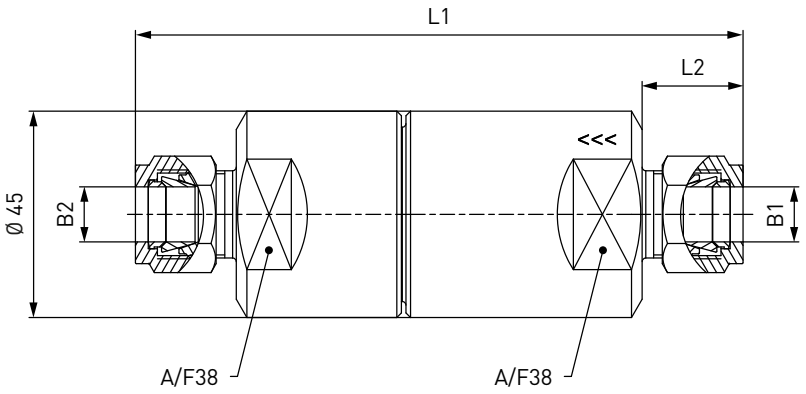
TECHNICAL DATA

Characteristics	Basic version	Options
Nominal bore (DN)	Depending on design	On request
Pressure range	PN = 35 MPa (5,000 psi) | PS = 45 MPa	
Temperature range	-40 °C up to +85 °C (-40 °F up to +185 °F)	On request
Material	Corrosion resistant stainless steel	On request
Sealing material	Hydrogen resistant	On request
Filter element	40 resp. 10 micron	On request
Design	Incl. fittings (only for filters with tube fitting)	On request
Conformity / Tests / Approvals	e1 approval on request	

Filter **TSF4 H_2**

ORDERING | WEH® TSF4 H_2 Round filter with tube fitting on both sides

approx. dimensions (mm)



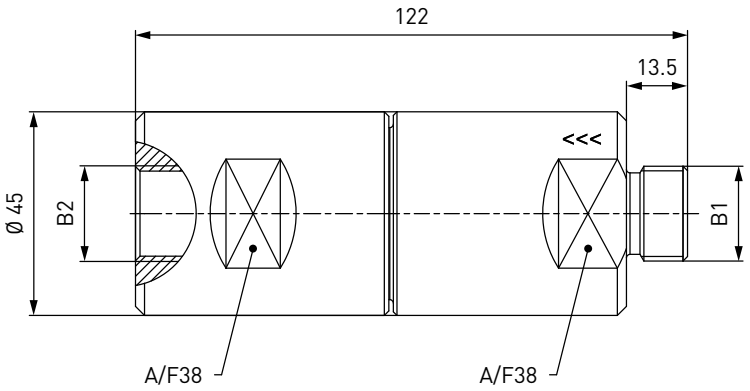
Part No.	Description	Filter (micron)	DN	Pressure (PN)	B1	B2	L1	L2
C1-33157-X01	TSF4 H_2	10	8	35 MPa / 5,000 psi	Tube Ø 3/8"*	Tube Ø 3/8"*	128	20
C1-69045-X01	TSF4 H_2	10	8	35 MPa / 5,000 psi	Tube Ø 10*	Tube Ø 10*	128	20
C1-36032-X01	TSF4 H_2	40	8	35 MPa / 5,000 psi	Tube Ø 10*	Tube Ø 10*	129	20
C1-30214-X01	TSF4 H_2	40	10	35 MPa / 5,000 psi	Tube Ø 12*	Tube Ø 12*	133	22
C1-59447-X01	TSF4 H_2	10	10	35 MPa / 5,000 psi	Tube Ø 1/2"*	Tube Ø 1/2"*	133	22
C1-49130-X01	TSF4 H_2	40	9	35 MPa / 5,000 psi	Tube Ø 1/2"*	Tube Ø 1/2"*	133	22
C1-30213-X1-X01	TSF4 H_2	40	12	35 MPa / 5,000 psi	Tube Ø 16"*	Tube Ø 16"*	134	23

* double ferrule fitting

Filter **TSF4 H_2**

ORDERING | WEH® TSF4 H_2 Round filter with male and female thread

approx. dimensions (mm)

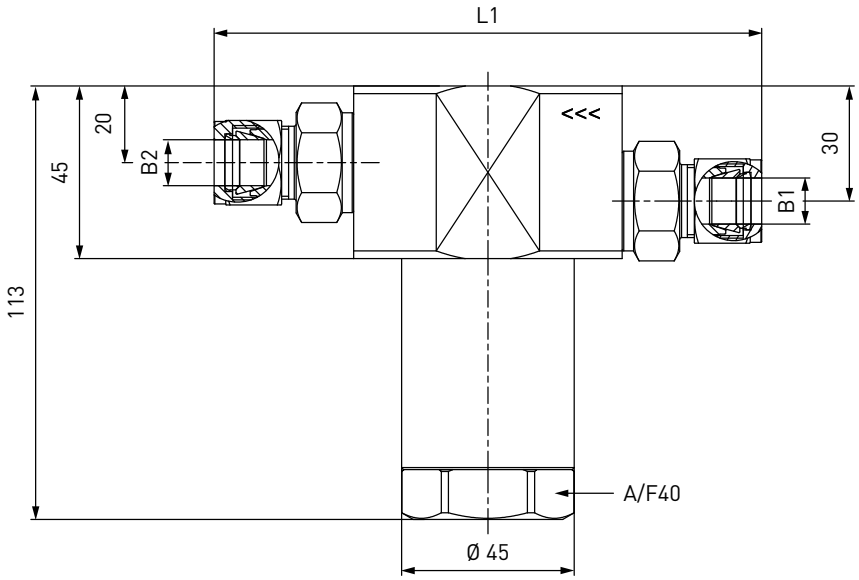


Part No.	Description	Filter (micron)	DN	Pressure (PN)	B1 (male thread)	B2 (female thread)
C1-36114-X01	TSF4 H_2	40	12	35 MPa / 5,000 psi	G1/2"	G1/2"

Filter **TSF4 H_2**

ORDERING | WEH® TSF4 H_2 T-Filter with tube fitting on both sides

approx. dimensions (mm)



Part No.	Description	Filter (micron)	DN	Pressure (PN)	B1	B2	L1
C1-117286-X01	TSF4 H_2	40	6	35 MPa / 5,000 psi	Tube Ø 8*	Tube Ø 8*	140
C1-70379-X01	TSF4 H_2	10	8	35 MPa / 5,000 psi	Tube Ø 3/8"*	Tube Ø 3/8"*	140
C1-58026-X01	TSF4 H_2	10	10	35 MPa / 5,000 psi	Tube Ø 12*	Tube Ø 12*	145
C1-73987-X01	TSF4 H_2	10	10	35 MPa / 5,000 psi	Tube Ø 1/2"*	Tube Ø 1/2"*	145
C1-47886-X01	TSF4 H_2	40	12	35 MPa / 5,000 psi	Tube Ø 16*	Tube Ø 16*	145
C1-69040-X01	TSF4 H_2	10	12	35 MPa / 5,000 psi	Tube Ø 16*	Tube Ø 16*	145

* double ferrule fitting

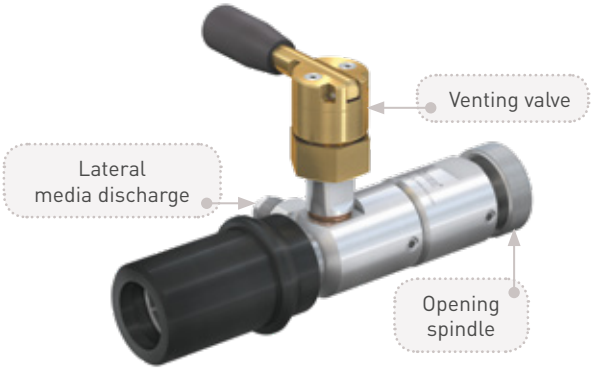
SPARE PARTS

Various parts are available as spares for the WEH® TSF4 H_2 Filter.

Part No.	Description
E69-9062	Wire filter insert 40 micron
E69-9063	Wire filter insert 10 micron
E51-47589	O-ring for filter insert (only T-filter)

Defueling nozzle **TK6 H_2**

DESCRIPTION



Features
- Discharge through the filling receptacle
- Knurled spindle actuation
- No additional locking device required
- Version with and without venting valve
- Plastic thermal protection
- Only suitable for WEH® TN1 H_2 Receptacles without filter

Cars running on hydrogen have to be serviced and checked regularly, a process involving the discharge of their pressurized fuel tanks. The WEH® TK6 H_2 Defueling nozzle has been designed for this specific purpose.
The defueling nozzle is simply engaged onto the WEH® TN1 H_2 Receptacle of the car and the knurled spindle fully turned until the receptacle is fully open. Discharge can now take place through the lateral media discharge vent.

Application
Defueling nozzle for discharging of H_2 fuel tanks of cars through the filling receptacle. Only to be used with WEH® TN1 H_2 Receptacles without filter. Operation only by specially trained personnel. Not for self-service operation!

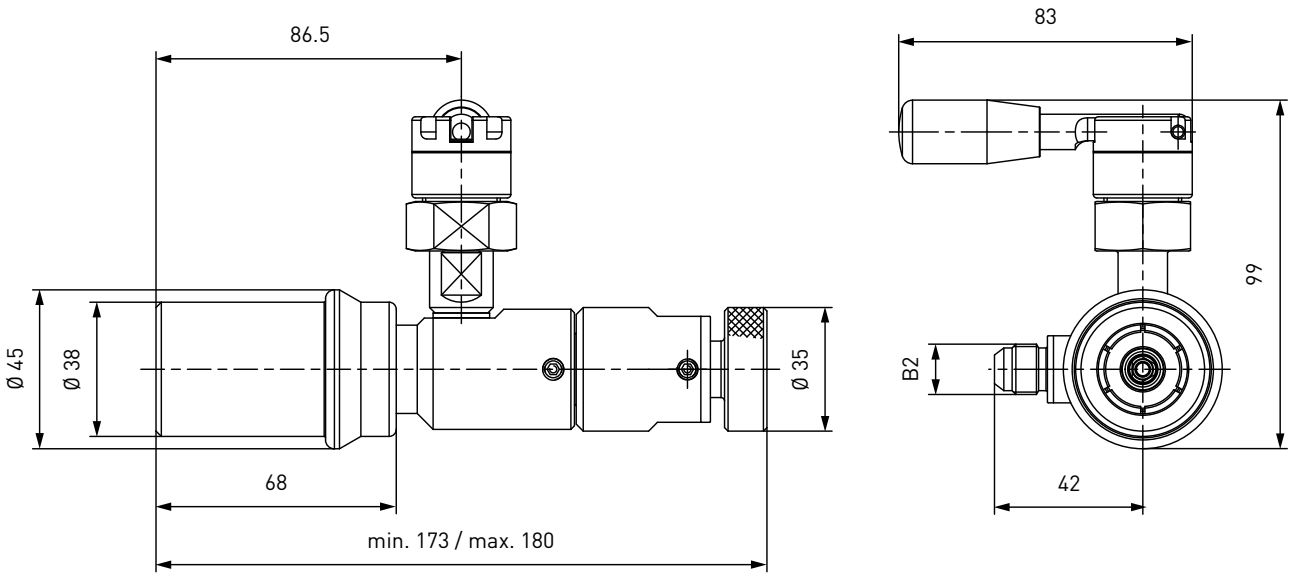
TECHNICAL DATA

Characteristics	Basic version	Options
Nominal bore (DN)	6 mm	On request
Pressure range	PN = 35 MPa (5,000 psi) | PS = 45 MPa	
Temperature range	-40 °C up to +85 °C (-40 °F up to +185 °F)	On request
Material	Corrosion resistant	On request
Sealing material	Hydrogen resistant	On request
Design	With plastic thermal protection, opening spindle and with resp. without venting valve	On request
Weight	Approx. 1.2 kg (2.65 lbs.) with venting valve resp. approx. 1 kg (2.21 lbs.) without venting valve	

Defueling nozzle **TK6 H_2**

ORDERING | WEH® TK6 H_2 Defueling nozzle with venting valve

approx. dimensions (mm)

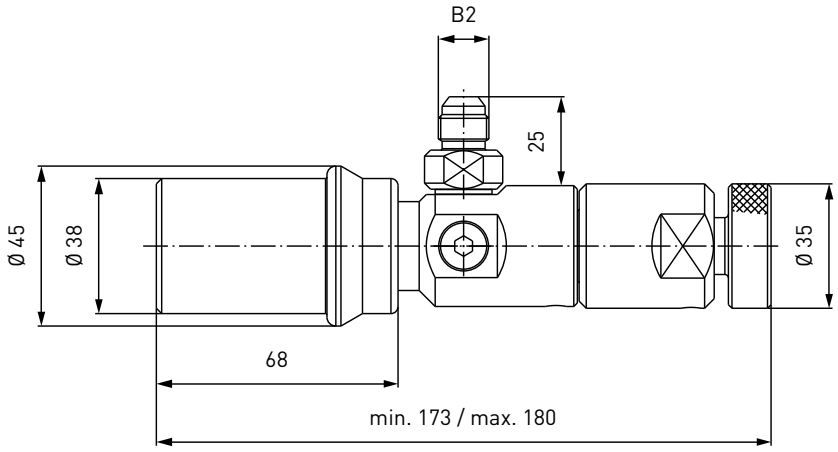


Part No.	Description	Pressure (PN)	B2 (male thread)
C1-104732-X01	TK6 H_2	35 MPa / 5,000 psi	UNF 9/16"-18*

* acc. to SAE J514, 37°

ORDERING | WEH® TK6 H_2 Defueling nozzle without venting valve

approx. dimensions (mm)



Part No.	Description	Pressure (PN)	B2 (male thread)
C1-114907-X01	TK6 H_2	35 MPa / 5,000 psi	UNF 9/16"-18*

* acc. to SAE J514, 37°

Defueling nozzle **TK6 H_2**

ACCESSORIES

The following accessories are available for the WEH® TK6 H_2 Defueling nozzle:

Hoses

Hoses for connection to the TK6 H_2 defueling nozzle, complete with fittings and press-fittings supported by coil spring stubs.

Part No.	B1/B2 (female thread)	Hose length
E68-60809	UNF 9/16"-18*	3 m
E68-60812	UNF 9/16"-18*	4 m
E68-60813	UNF 9/16"-18*	5 m

* acc. to SAE J514, 37°

Defueling nozzle **TK6 H_2**

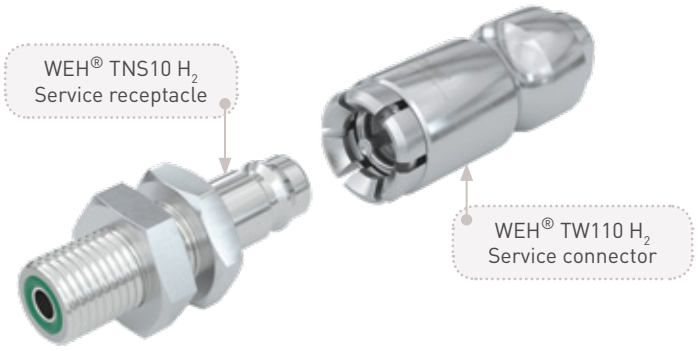
Service receptacle **TNS10 H_2**

DESCRIPTION

Features
- Integrated shut-off valve
- Reduces chatter during discharging
- Sealing-friendly design
- Incl. protection cap

Vehicles running on hydrogen have to be serviced and checked regularly. To achieve this, it is necessary to discharge all pressure vessels resp. fuel tanks. The WEH® TNS10 H_2 Service receptacle has been designed for this specific purpose. It is mounted on the underside of the hydrogen vehicle and provides simple discharging of the fuel tank.

We recommend that the WEH® TNS10 H_2 Service receptacle is used with the WEH® TW110 Service connector. The TW110 needs only to be placed onto the service receptacle and discharging can commence. After discharging, the service nozzle can be disconnected.



Application
Service receptacle for discharging hydrogen fuel tanks.
Operation only by specially trained service personnel. Not for self-service operation!
Attention: The TNS10 H_2 may not be used for filling!

Note:
The TNS10 H_2 may only be used in connection with a suitable locking device or shut-off valve (e.g. ball valve)!

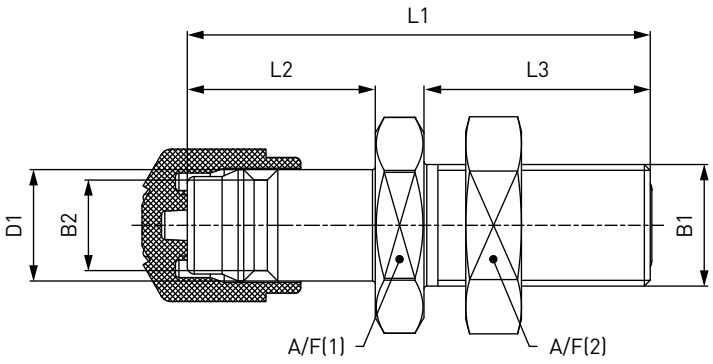
TECHNICAL DATA

Characteristics	Basic version
Nominal bore (DN)	6 mm
Pressure range	PN = 1.6 MPa (230 psi) | PS = 2 MPa
Temperature range	-40 °C up to +85 °C (-40 °F up to +185 °F)
Material	Corrosion resistant stainless steel
Sealing material	Hydrogen resistant
Design	Incl. integrated shut-off valve, bulkhead fitting and protection cap

Service receptacle **TNS10 H_2**

ORDERING | WEH® TNS10 H_2 Service receptacle

approx. dimensions (mm)



Part No.	Description	DN	Pressure (PN)	B1 (male thread)	B2	L1	L2	L3	D1	A/F(1) / A/F(2)
C1-151481	TNS10 H_2	6	1.6 MPa / 230 psi	UN 11/16"-16 for sealing with O-Lok® Face seal* for tube Ø 10 (3/8")	Ø 13	66.5	32.5	27	16	27

* Face seal acc. to SAE J1453

Service receptacle **TNS10 H_2**

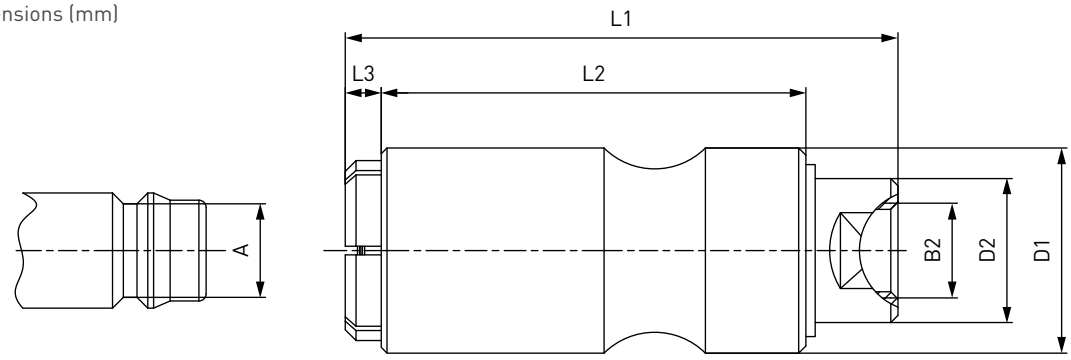
ACCESSORIES

The following accessories are available for the WEH® TNS10 H_2 Service receptacle:

WEH® TW110 H_2 Service connector

Service connector with integrated shut-off valve for discharging the pressure vessels and fuel tanks of vehicles running on hydrogen.

approx. dimensions (mm)



Part No.	Description	Pressure (PN)	A (≙ B2 of TNS10 H_2)	B2 (female thread)	L1	L2	L3	D1	D2
C1-84461	TW110 H_2	1.6 MPa / 230 psi	Ø 13	G1/4"	77	59	5	28.5	20

Service receptacle **TNS10 H_2**

SPARE PARTS

Various parts are available as spares for the WEH® TNS10 H_2 Service receptacle.

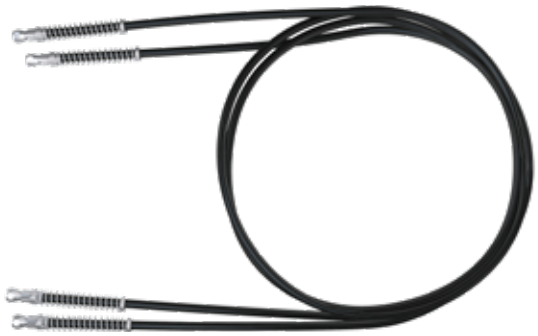
Protection cap

Protection cap for protecting the TNS10 H_2 service receptacle from dirt ingress and damage whilst not in use.

Part No.	Description
E49-83726	Protection cap

Filling and venting hoses

DESCRIPTION



Features
- Different lengths available
- Tailor-made according to customers' specifications

We offer hydrogen hoses for connecting fueling nozzle and breakaway coupling or dispenser. The hoses are available with the appropriated fittings. The filling resp. filling and venting hoses (hose set) can be delivered in different standard sizes. On request the hydrogen hoses are also available in other lengths.

Application
Hydrogen hoses for installation at the dispenser.

TECHNICAL DATA

Characteristics	Basic version
Max. allowable operating pressure PS	45 MPa / 6,530 psi (hoses for TK16 H_2, TK16 H_2 High-Flow, TK17 H_2 35 MPa, TK25 H_2, TK6 H_2) 87.5 MPa / 12,690 psi (hoses for TK17 H_2 70 MPa)
Temperature range	-40 °C up to +60 °C (-40 °F up to +140 °F)
Sealing material	Hydrogen resistant

Filling and venting hoses

ORDERING | Hose set for TK17 H_2 70 MPa

Hose set for connecting fueling nozzle and TSA1 H_2 70 MPa breakaway coupling, complete with filling hose (for pre-cooled hydrogen) and braided protection hose as cover.
Design filling hose:
max. operating pressure PS: 87.5 MPa / nominal bore (DN): 4.5 mm / temperature range: -40 °C up to +65 °C (-40 °F up to +149 °F)

Part no.	B1/B2 (female thread)	Hose length
E68-163061	UNF 9/16"-18*	3 m
E68-163062	UNF 9/16"-18*	4 m
E68-163063	UNF 9/16"-18*	5 m

* DKJ 58°

ORDERING | Hose set for TK17 H_2 70 MPa ENR

Hose set for connecting fueling nozzle and TSA1 H_2 70 MPa breakaway coupling, complete with filling hose (for pre-cooled hydrogen), data cable, purging line and braided protection hose as cover.
Design filling hose:
max. operating pressure PS: 87.5 MPa / nominal bore (DN): 4.5 mm / temperature range: -40 °C up to +65 °C (-40 °F up to +149 °F)

Part no.	B1/B2 (female thread)	P1/P2	Hose length
E68-161886	UNF 9/16"-18*	Ø 6	3 m
E68-161887	UNF 9/16"-18*	Ø 6	4 m
E68-161888	UNF 9/16"-18*	Ø 6	5 m

* DKJ 58°

ORDERING | Hose set for TK17 H_2 35 MPa

Hose set for connecting fueling nozzle and TSA1 H_2 breakaway coupling, complete with filling hose (for pre-cooled hydrogen) and braided protection hose as cover.
Design filling hose:
max. operating pressure PS: 45 MPa / nominal bore (DN): 6 mm / temperature range: -40 °C up to +65 °C (-40 °F up to +149 °F)

Part no.	B1/B2 (female thread)	Hose length
E68-162705	UNF 7/16"-20*	3 m
E68-162706	UNF 7/16"-20*	4 m
E68-162707	UNF 7/16"-20*	5 m

* acc. to SAE JIC, 37° sealing cone

Filling and venting hoses

ORDERING | Hose set for TK17 H_2 35 MPa ENR

Hose set for connecting fueling nozzle and TSA1 H_2 breakaway coupling, complete with filling hose (for pre-cooled hydrogen), data cable, purging line and braided protection hose as cover.
Design filling hose:
max. operating pressure PS: 45 MPa / nominal bore (DN): 6 mm / temperature range: -40 °C up to +65 °C (-40 °F up to +149 °F)

Part no.	B1/B2 (female thread)	P1/P2	Hose length
E68-162702	UNF 7/16"-20*	Ø 6	3 m
E68-162703	UNF 7/16"-20*	Ø 6	4 m
E68-162704	UNF 7/16"-20*	Ø 6	5 m

* acc. to SAE JIC, 37° sealing cone

ORDERING | Hose set for TK16 H_2 (25 MPa / 35 MPa) and TK16 H_2 High-Flow (35 MPa)

Filling and venting hose for connecting fueling nozzle and TSA1 H_2 breakaway coupling, complete with fittings and press-fittings supported by coil spring stubs.
Design: max. operating pressure PS: 45 MPa (6,530 psi) / nominal bore (DN): 6.35 mm

Part No.	B1/B2 (female thread)	C1/C2 (female thread)	Hose length
C1-60917	UNF 9/16"-18*	UNF 7/16"-20*	3 m
C1-60920	UNF 9/16"-18*	UNF 7/16"-20*	4 m
C1-60923	UNF 9/16"-18*	UNF 7/16"-20*	5 m

* acc. to SAE JIC, 37°

ORDERING | Hose set for TK16 H_2 (35 MPa) and TK16 H_2 High-Flow (35 MPa) with data interface

Filling and venting hose for connecting fueling nozzle and TSA1 H_2 breakaway coupling, complete with hose fittings, plastic spiral hose and cable for data interface.
Design: max. operating pressure PS: 45 MPa / nominal bore (DN): 6.35 mm (filling hose) resp. 2 mm (venting hose)

Part No.	B1/B2 (female thread)	C1/C2 (female thread)	Hose length
C1-90698	UNF 9/16"-18*	M12x1.5	3 m
C1-94428	UNF 9/16"-18*	M12x1.5	4 m
C1-94429	UNF 9/16"-18*	M12x1.5	5 m

* acc. to SAE JIC, 37°

Filling and venting hoses

ORDERING | Hose set for TK25 H_2 (25 MPa / 35 MPa)

Filling and venting hose for connecting fueling nozzle and TSA5 H_2 breakaway coupling, complete with fittings and press-fittings supported by coil spring stubs.
Design: max. operating pressure PS: 45 MPa / nominal bore (DN): 6.35 mm

Part No.	B1/B2 (female thread)	C1/C2 (female thread)	Hose length
C1-152552	UNF 7/8"-14*	UNF 9/16"-18*	3 m
E68-152553	UNF 7/8"-14*	UNF 9/16"-18*	4 m
E68-152554	UNF 7/8"-14*	UNF 9/16"-18*	5 m

* acc. to SAE JIC, 37°

ORDERING | Hose for TK6 H_2 (35 MPa)

Hoses for connection to the defueling nozzle, complete with fittings and press-fittings supported by coil spring stubs.
Design: max. operating pressure PS: 45 MPa / nominal bore (DN): 6.35 mm

Part No.	B1/B2 (female thread)	Hose length
E68-60809	UNF 9/16"-18*	3 m
E68-60812	UNF 9/16"-18*	4 m
E68-60813	UNF 9/16"-18*	5 m

* acc. to SAE JIC, 37°

Technical appendix

Definitions

Abbreviation	Definition	
Pressure specifications		
PN	Nominal pressure	Nominal pressure after temperature compensation at 15 °C (59 °F)
PS	Max. allowable operating pressure	Maximum allowable operating pressure acc. to Pressure Equipment Directive 2014/68/EU, Article 2 paragraph 8
PT	Hydrostatic test pressure	Hydrostatic test pressure acc. to Pressure Equipment Directive 2014/68/EU, Annex I no. 7.4
PP	Pilot pessure	Actuation pressure for hydraulic and pneumatic components
PC	Cracking pressure	Pressure at which the check valve opens and the first indication of flow occurs
WP	Working pressure	'Working pressure' means the maximum pressure to which a component is designed to be subjected to and which is the basis for determining the strength of the component under consideration
MAWP	Max. allowable working pressure	Max. allowable operating pressure at which the weakest point of the system or the vessel (e.g. cylinder valve) can operate at a certain temperature during normal operation
Dimensions		
L1, L2, L3 ...	Length specification	
D1, D2, D3 ...	Diameter specification	
A/F(1), A/F(2) ...	Wrench size specification	
Ports		
A / X	Customer-specific port (test piece, sample, cylinder valve, handwheel respiratory protective equipment)	
B1, B2, B3 ...	Media ports	
C1, C2, C3 ...	Gas recirculation ports	
P1, P2, P3 ...	Pilot pressure ports	
MA1, MA2 ...	Measuring ports	
Q	Drain port filter	
G	Mounting bores	
Others		
DN	Nominal size (DN) acc. to Pressure Equipment Directive 2014/68/EU, Article 2 paragraph 11	
µm	Max. diameter of the filtered particle	
Kv	Is the discharge of water in m^3/h at a pressure drop of 1 bar (14.5 psi), acc. to DIN/EN 60534-2	
Cv	Is the discharge of water in gallons per minute at a pressure drop of 1 psi, acc. to DIN/EN 60534-2	
IR	Infrared data interface	
ENR	Exchangeable data interface (exchangeable nozzle receiver)	
TS	Maximum allowable temperature acc. to Pressure Equipment Directive 2014/68/EU, Article 2 paragraph 9	

Technical appendix

Definitions

Abbreviation	Definition
Breakaway force	Is the force range, in which the breakaway releases
NC	Normally closed (initial position of shut-off valve)
NO	Normally open (initial position of shut-off valve)

Technical explanations

Term	Definition
Temperature range	Is the temperature range in which the WEH® Product can be used.
Media temperature range	Is the temperature range of the medium used, which can flow through the WEH® Product (may change depending on the time of measurement).
Ambient temperature range	Is the temperature range of the environment in which the WEH® Product can be used.
Leak rate	Is the maximum external leak rate, which the WEH® Product exhibits in delivery condition.
Internal leak rate	The internal leak rate depends, among other things, on type of application, medium and pressure difference on the WEH® Product. On request it can be specified more precisely.
Max. side load	Is the max. allowable sum of all external forces that may act on the device under intended use. **Note:** External forces can affect the life time of WEH® Products and can cause damage. Tensile and transverse loads as well as vibrations and pressure impacts need to be considered, e.g. by user side measures such as on site mountings and similar. Therefore, lateral forces such as whipping hoses or other equipment must be avoided. WEH® Products should be installed in such a way, that lateral forces which could lead to leakage or damage can not occur. Special applications require a special consultation before selecting the product.
Products with pneumatic actuation	The customer has to ensure there is adequate axial movement when pneumatically actuated WEH® Products are used in automated systems, see maximum side load. Ideally the products should be mounted with a floating joint or introduced individually to prevent the possibly existing clamping jaws getting blocked or jammed in the thread of the test piece.
Sealing material	On request the WEH® Product can be adapted to customer specific applications regarding to the sealing materials used. The clarification of the media compatibility and suitability of the adapted WEH® Product for the final application is always the responsibility of the end user.
Storage / life time of components	There are certain requirements for every WEH® Product. WEH® Products are generally products which may be subject to wear and fatigue during operation and depending on your individual application/use. For details - in particular regarding the corresponding minimum inspection and maintenance intervals – please refer to the respective operating instructions for the WEH® Product.

Technical appendix

Further explanations

Subject	Definition
Safe product selection	Our WEH® Products are designed to be operated by qualified professional users (insofar as WEH® Products are also designed to be operated by other users in individual cases, this is explicitly stated in the corresponding operating instructions). Please note that WEH does not know your system and therefore - also due to the large number of different potential applications of WEH® Products - cannot perform tests on all potential types of application. You alone are responsible for the selection, configuration and suitability of WEH® Products, especially according to the requirements of your system. Before purchasing WEH® Products, please particularly ensure that our products are compatible with your intended use, your performance data, your material and fluids, your system concept and your system limits according to our product specifications. Please also consider your technical and legal requirements for operation, handling and maintenance. The quality and safety of WEH® Products is our highest priority. For this reason, WEH® Products may not be used outside the specifications in the relevant data sheets and product descriptions. If you are not sure whether the WEH® Product is suitable for your system and intended use, please contact us in advance. We also strongly recommend that you refrain from using third-party spare parts or a combination of WEH® Products with unsuitable third-party products. You alone are responsible for reviewing the suitability of third-party products. WEH® Products and WEH® Spare parts comply with our quality and safety standards.
Explanation on the Pressure Equipment Directive	In general, WEH® Products with a maximum allowable operating pressure of more than 0.5 bar (PS) fall within the scope of application of the Pressure Equipment Directive 2014/68/EU, are generally classified as pressure accessories in accordance with Article 2 (5) of the same and are considered to be similar to piping. These WEH® Products may not be used as safety accessories. Furthermore, it is pointed out, that these WEH® Products are designed and placed on the market in accordance with the requirements of Article 4 (3) of the Pressure Equipment Directive 2014/68/EU. For some products a different classification and/or categorisation is required or can be conducted on request. In these cases, if legally required, a conformity assessment procedure in accordance with Annex III of the Pressure Equipment Directive 2014/68/EU can and will also be conducted and the conformity can be declared by means of an EU Declaration of Conformity in accordance with Annex IV of the Pressure Equipment Directive 2014/68/EU. In these cases, the EU Declaration of Conformity is enclosed with the product.
External change management	WEH reserves the right to update, optimise and adjust its products continuously. This may result in corresponding changes of the product. Customers will be informed proactively or unsolicited by WEH only in individual cases about product updates, product optimisations and/or product adaptations that have been carried out. You are free to contact WEH at any time to request information about any product updates, product optimisations and/or product adjustments.

Brochure data

This catalog was created diligently and on the basis of decades of experience.

All information/recommendations in this catalog are non-binding and are particularly subject to possible deviations or changes. For any binding information/recommendations, please refer to the verified information/recommendations in our individual orders. Particularly, due to the wide range of possible applications of WEH® Products and the unknown parameters and operating conditions linked to them, the accuracy and/or completeness of the information/recommendations in this catalog cannot be guaranteed with respect to certain individual cases. In doing so, we would like to refer once again to the information/recommendations provided in individual orders.

The application limits indicated in this catalog (e.g. for pressure, temperature, etc.) are generally theoretical values determined in a test environment. As the concrete operating conditions could differ, we cannot ensure that these values apply to a specific customer application. During the practical use, you should particularly consider that the mutual influence of operational parameters could result in changes of the maximum values. Especially, in case of any unusual operating conditions, please contact WEH before using any WEH® Products. We therefore strongly recommend that you also require any necessary binding information/recommendations to be included by us in the individual orders.

Furthermore, we point out that we cannot assume any warranty or accept any responsibility for printing errors, incomplete information or misinterpretations. Illustrations and/or images are particularly provided for illustrative purposes only and may differ in some details from the actual product. Moreover, dimensions and other technical details in this catalog are non-binding information and are provided for illustrative purposes only. The product's exact form and design result exclusively from the specific individual order. In particular, certain information/recommendations in the catalog only become integral part of the contract if they have been expressly contractually agreed.

Only the latest version of our catalog and other product related documents is valid and applicable. Please ensure that you always use the latest catalog's and documents' versions. Please feel free to contact WEH at any time and request the latest versions.

In case of deliveries and other services, our General Terms and Conditions and the Know-How Protection and Quality Assurance Agreement shall apply unless otherwise expressly agreed.
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More questions? – Great! Don't hesitate to contact our experts.

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