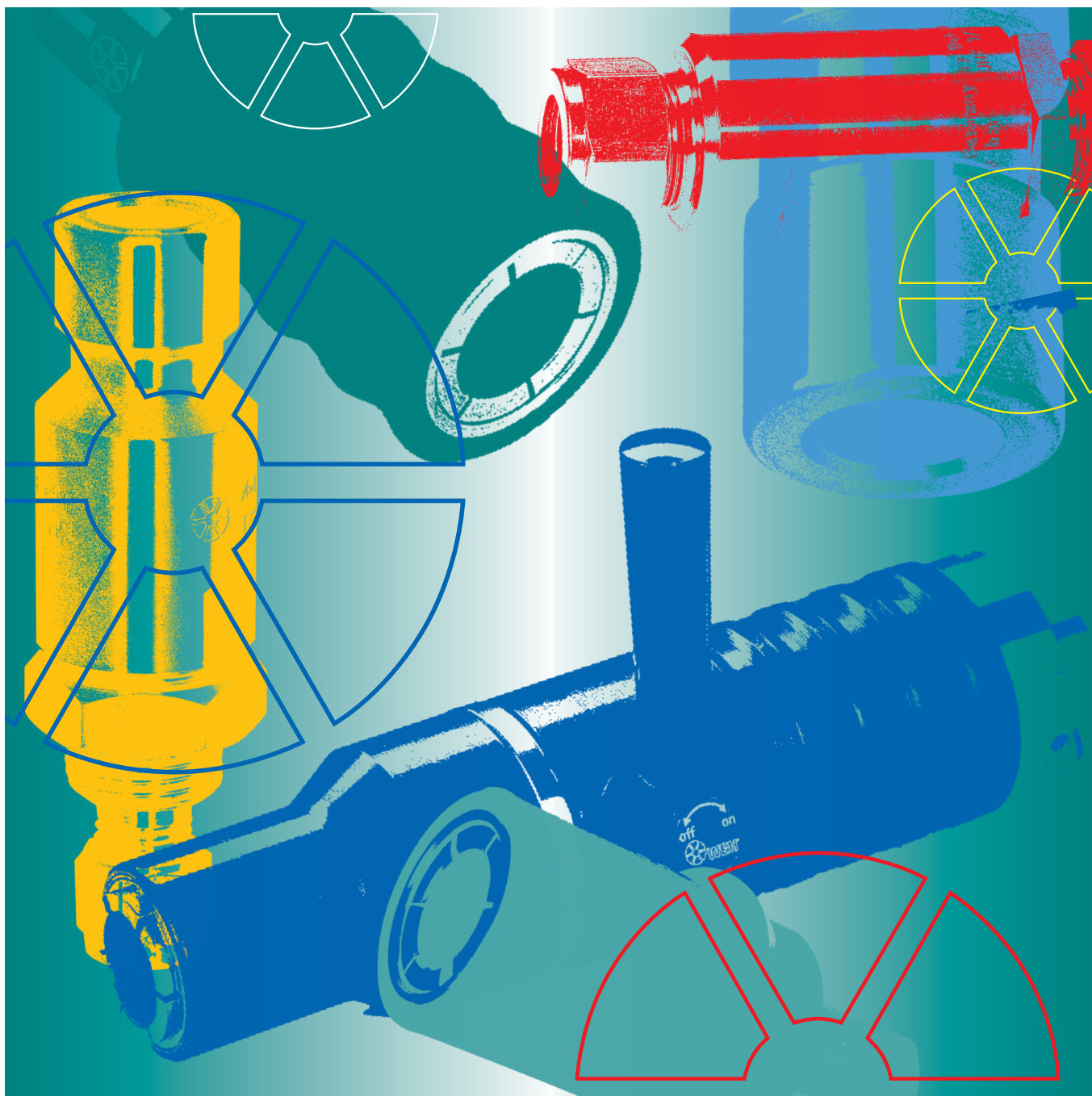




Nozzles · Receptacles · Fueling System · Check Valves · Adaptor Nozzles

**The complete
refueling system
for NGV's**

15

Catalogue 15 / Date 03/04

NGV Products

Rev.: 2003/07/00179-1-3

...Experience

WEH are pioneers in the natural gas vehicle (NGV) industry. Starting in 1986 they laid the foundation for the worldwide NGV 1 standard by developing a complete range of products to accommodate NGV refueling at self-serve fueling stations.

Over the years WEH NGV products have not only been bench tested but also under everyday conditions at filling stations. The results of this experience are to be seen worldwide.



TK1 Fueling Nozzle for overnight and time filled Vehicle Refueling Appliances (VRAs)



TK15 Fueling Nozzle for fast-filling at self-serve fueling stations

An advanced product for a high performance application

WEH's NGV product line has been designed expressly for the demanding applications of natural gas high-pressure 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.



Receptacle designed to meet the NGV1 standard with integrated non-contact check valve.

A strong connection...

is ensured by the specially developed WEH-JAW locking mechanism. The clamping jaws tolerate harsh environmental conditions, eg. dirt, ice ... Also, the low load per unit area allows the nozzle to be connected to the receptacle without damaging its surface. This especially applies to brass receptacles.

TK22 Fueling Nozzle for buses and trucks



"Technically advanced safety features"

Natural gas refueling can be dangerous if unsuitable products are used. WEH Products have a very high safety standard to reduce risk areas.

Effective safety systems in all WEH NGV products, especially in the fueling nozzle type TK15, achieves the necessary safety standard for the use of filling devices at self-serve fueling stations.

Member of



Product line for cars:

- Type TK15

Fueling Nozzle for cars, with or without integrated swivel joint (page 6)



- Type TK16

Fueling Nozzle for cars (page 8)



- Type TK10/TK10i

Fueling Nozzle for Fast-Fill with integrated ball valve (page 10)



- Type TK1

Fueling Nozzle for Slow-Fill (page 12)



- Type TK4/TK4i

Fueling Nozzle for Fast-Fill (page 12)



- Type TN1

Receptacle NGV1 (page 14)



- Type TN1 Combined

Combined receptacle for NGV1 standard and Italian standard (page 16)



- Type TS50

Complete Fueling System (page 18)



- Type TVR1

Check Valve (page 20)



Product line for buses and trucks:

- Type TK25

Fueling Nozzle for buses (page 22)



- Type TK22

Fueling Nozzle for buses and trucks (page 24)



- Type TN5

Receptacle for buses and trucks (page 26)



- Type TVR5

Check valve for buses and trucks (page 28)



Adaptor Nozzles:

- Fueling Nozzle for buses for refueling at fueling stations for cars (page 30)



- Fueling Nozzle for cars for refueling at fueling stations for buses (page 30)



- Adaptation of Italian standard with NGV1 and vice versa (page 30)



Service Nozzles:

- **Type TK6/TK21**
Service nozzle for discharging of fuel vessels (TK6),
Service nozzle for maintenance and testing (page 31)



Accessories:

- **Type TSA1 and TSA5**
Break-away coupling (page 32)



- **Charging hoses**
for Type TK10, TK10i, TK15, TK16 CNG and TK25 (page 34)



- **Filter TSF2/TSF4**
(page 35)



- **Type TZ21**
Emergency fueling set (Seite 36)



- **Type TV15**
Pneumatically actuated linear valve (page 38)



Type TK15

Patented Fueling Nozzle for NGV refueling to be connected and disconnected at self-serve fueling stations (nominal bore 8 mm)

Features

- Fueling nozzle for fast filling at self-serve fueling stations
- Integrated high-pressure swivel joint
- Extremely high flow rate → short filling times
- Recirculation of vented gas
- WEH-Jaw locking mechanism
- High-grade materials - corrosion resistant

Type TK15 makes NGV refueling as easy as petrol or diesel refueling.

Connecting procedure: Place the TK15 nozzle onto the receptacle similar to a petrol nozzle and with a 180° turn of the handle the filling procedure can start.

The TK15 is equipped with a high-pressure swivel joint so that before filling commences the nozzle can be turned to any position.



Type TK 15 is also available without swivel joint.

Safety

TK15 offers high safety standards to the operator. The nozzle remains connected to the receptacle until the volume between inlet valve and receptacle is depressurized.

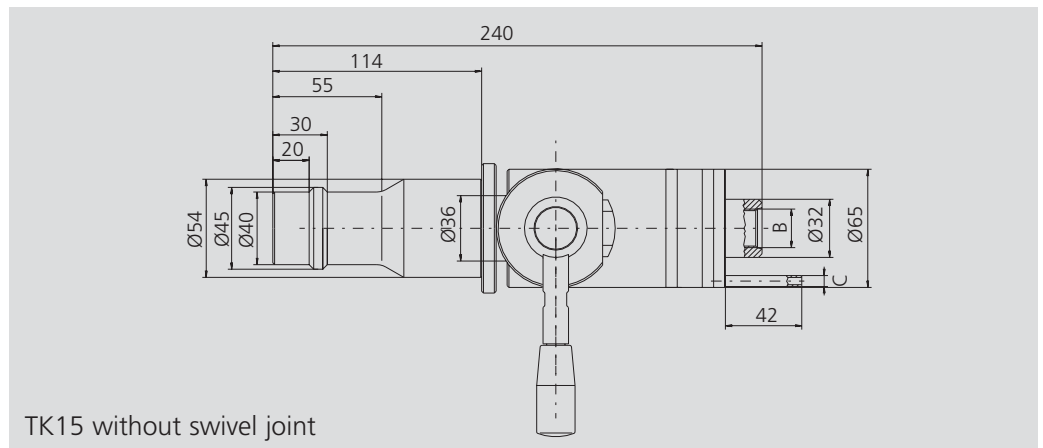
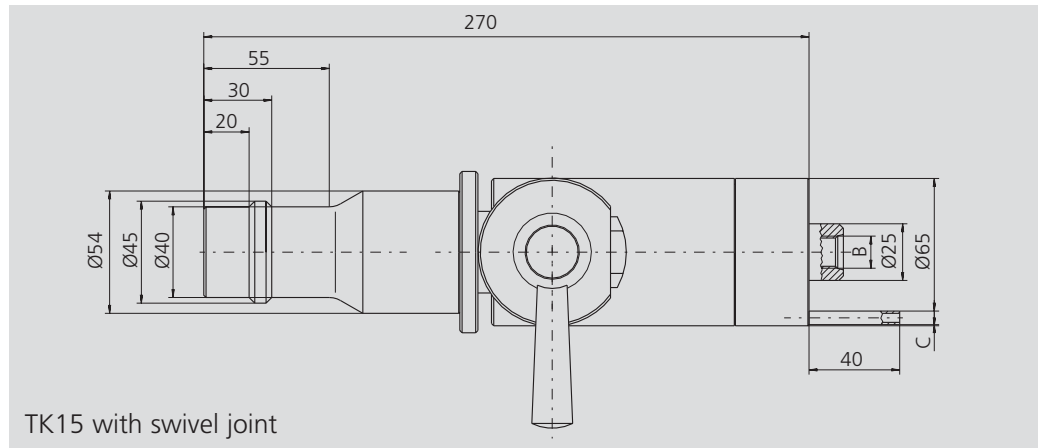
To achieve optimum performance it is recommended that the WEH TN1 Receptacle is used with the TK15 Fueling Nozzle.

For further information on the charging hoses (filling and venting hoses) refer to page 34 of this catalogue.

Technical Data:

- 1. Application:**
NGV fast filling at self-serve fueling stations.
Fueling nozzle TK15 designed to be used with WEH TN1 receptacle.
- 2. Pressure ranges (NGV1):**
B200 acc. to ISO 14469, others on request
- 3. Operating pressure:**
max. 350 bar (5000 psi), others in preparation
- 4. Temperature range:**
-40°C up to +80°C
- 5. Flow Rate:**
Cv 1.1
- 6. Design:**
All parts corrosion-resistant, with plastic thermal protection, vent pipe and dispenser mounting
- 7. Seals:**
Natural gas compatible
- 8. Registration:**
Approval available
PED 97/23/EU: CE 0036

Dimensions (mm):



Ordering:

Description	Inlet B	Vent pipe C	Part No.
TK15 with swivel joint	UNF 9/16" - 18 / SAE-Boss	Ø 6 mm tube	C1-30170
TK15 without swivel joint	UNF 9/16" - 18 / SAE-Boss	Ø 6 mm tube	C1-31673

Type TK16 CNG

Patented Fueling Nozzle for NGV refueling to be connected and disconnected at self-serve fueling stations (nominal bore 8 mm)

Features:

- Super light → only 1750 grammes
- WEH-EASY-TURN® swivel joint 360° for operating handle
- Easy operation
- Extremely high flow rate → short filling times
- Recirculation of vented gas
- High-grade materials
- Coding for pressure range and gas type
- Option: Interface for data transfer vehicle / fueling station

Type TK16 CNG is very light in weight and therefore easy to operate. It has a guide bush to protect the vehicle receptacle and an integrated swivel design located at the operating

handle which can easily be turned into the optimal actuating position. The lightweight design of the TK16 CNG means that less effort is needed to actuate the nozzle giving a smaller

operating handle and a more compact design.



TK16 CNG is also available with dispenser mounting. Please contact us directly!

Safety

TK16 CNG offers high safety standards for the operator. The nozzle remains connected to the receptacle until the gas between inlet valve and receptacle is depressurized.

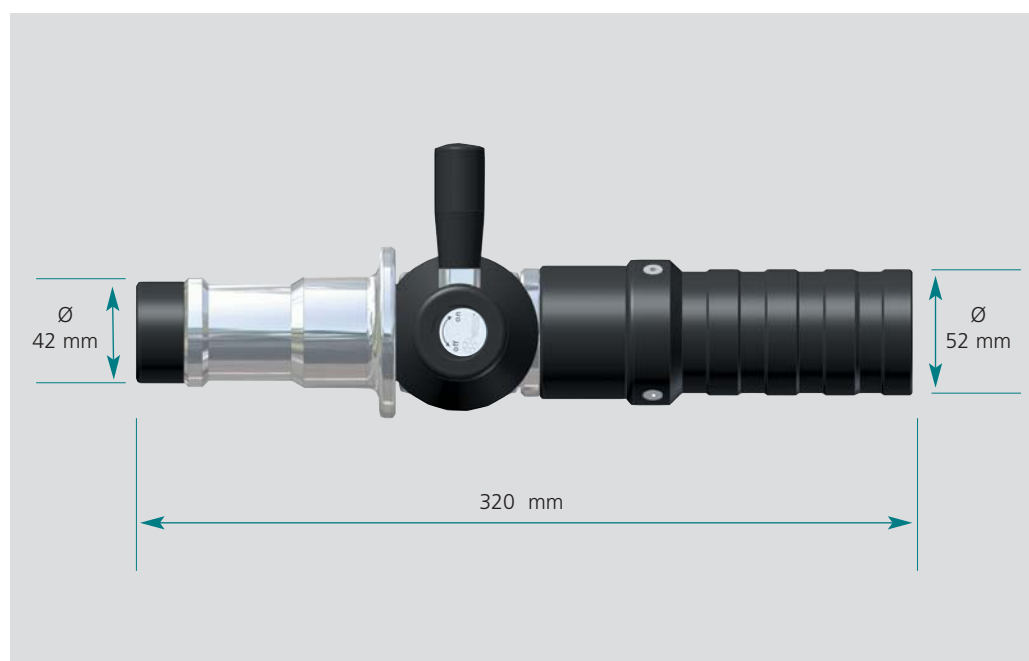
To achieve optimum performance it is recommended that the WEH-TN1 receptacle be used with the TK16 CNG Fueling Nozzle.

For further information on the filling hoses (filling and venting hoses) refer to page 34 of this catalogue.

Technical Data:

- 1. Application:**
NGV fast filling at self-serve fueling stations.
Fueling nozzle TK16 CNG designed to be used with WEH TN1 receptacle.
- 2. Pressure ranges (NGV1):**
B200 acc. to ISO 14469, others on request
- 3. Operating pressure:**
max. 350 bar (5000 psi), others in preparation
- 4. Temperature range:**
-40°C up to +85°C
- 5. Design:**
All parts corrosion-resistant, with plastic thermal protection vent pipe and dispenser mounting.
- 6. Seals:**
Natural gas compatible
- 7. Registration:**
PED97/23EU: CE 0036

Dimensions (mm):



Ordering:

Description	Inlet B	Vent pipe C	Part No.
TK16 CNG	UNF 9/16"-18*	UNF 7/16"-20*	C1-35299

* acc. to SAE J 514, 37°

Type TK10 and TK10i

Patented NGV Fueling Nozzle for use on fueling stations (nominal bore 4 mm)

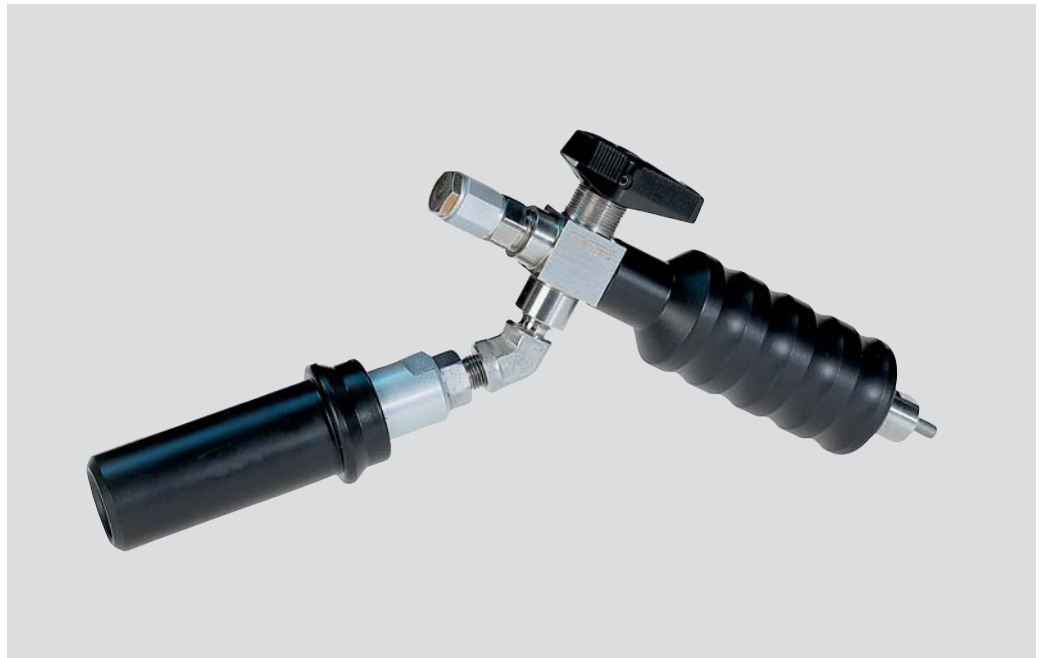
Features

- Compatible with the NGV1 receptacle profile (TK10)
- Compatible with the Italian receptacle profile (TK10i)
- Push to connect
- Ergonomic design
- Integrated captive vent
- Integrated shut-off valve
- Plastic thermal protection
- WEH-JAW locking mechanism
- Grip handle available at 45° or 90°

The TK10 Fueling Nozzle features 'push to connect' JAW locking system. The locking sleeve does not have to be pulled back in order to make a connection which means that the connector is very easy to use. The hand grip is available in 45° or 90° configurations, this feature can help to prevent stresses on the hose due to excessively tight bend radii induced

by awkward-to-access receptacles and the chafing of the hose on the ground. The nozzle also features an integrated ball valve and captive venting. Refueling is carried out by simply pushing the TK10 onto the receptacle, opening the ball valve until fueling is complete, closing the valve, venting the residual gas and pulling back the sleeve to disconnect.

New! The fueling nozzle type **TK10i** has been designed especially for the Italian market, thus enabling to connect with a simple push-pull-nozzle also to Italian receptacles.



On request the fueling nozzles type TK10 and TK10i are also available without gas recirculation. The grip handle can either be 45° or 90°.

All WEH products are made of high-quality materials. The TK10 and TK10i are made of corrosion-resistant material and with plastic thermal protection of the hand grip.

Difficult-to-access receptacles can be easily refueled due to the extended construction of the integrated TK4 nozzle. WEH-jaws grip symmetrically avoiding damage of the receptacle profile which could cause leakage. To achieve optimum performance it is recommended that the TK10 and TK10i fueling nozzles are used with the TN1 receptacle.

For further information on the filling hoses (filling and venting hoses) refer to page 34 of this catalogue.

Technical Data:

1. Application:

NGV fast filling at fueling stations. Fueling nozzle type TK10 designed to be used with WEH-TN1 receptacle. Fueling nozzle type TK10i to be used with Italian receptacle. Operation only by specially trained service personnel. No self-service operation!

2. Pressure range (NGV1):

B200 acc. to ISO 14469, others on request

3. Operating pressure:

max. 250 bar (3600 psi)

4. Temperature range:

-40°C up to +80°C

5. Design:

All parts corrosion-resistant with plastic thermal protection

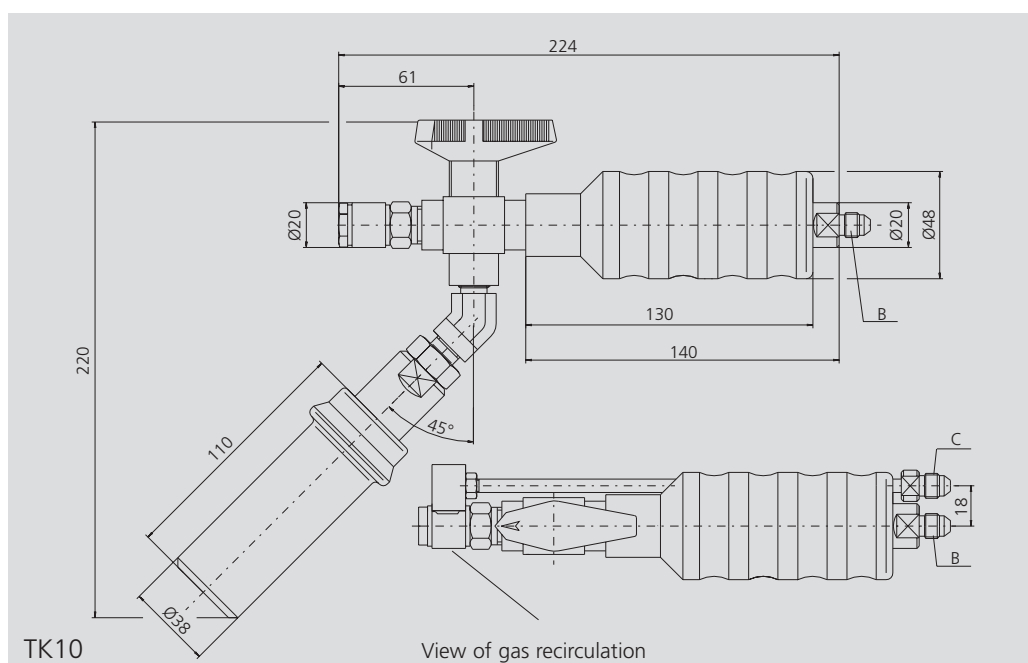
6. Seals:

Natural gas compatible

7. Registration:

Approval for TK4 available.
PED 97/23/EU: CE 0036

Dimensions (mm):



Ordering:

Inlet port 'B' available with other thread sizes on request.

Description	Inlet B	Grip Position	Vent Pipe C	Part No.
TK10	UNF 7/16" - 20 *	45°	—	C1-15971
TK10	UNF 7/16" - 20 *	90°	—	C1-15972
TK10	UNF 7/16" - 20 *	45°	UNF 7/16" - 20 *	C1-15973
TK10	UNF 7/16" - 20 *	90°	UNF 7/16" - 20 *	C1-15974
TK10i	UNF 7/16" - 20 *	45°	UNF 7/16" - 20 *	C1-17904

* acc. to SAE J 514, 37°

Type TK1, TK4 and TK4i

Patented Fueling Nozzles TK1 Slow Fill TK4 Fast Fill TK4i for Italian standard

The **TK1** Fueling nozzle is designed specifically for time filling of vehicles with 'Fuelmaker' compressors. The nozzle is best suited for this application.

TK4 differs from type TK1 only by a higher flow rate, thus being designed for fast filling.

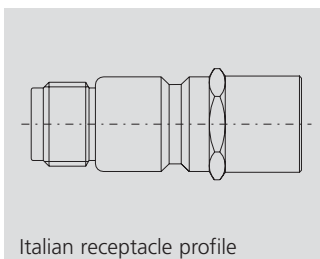
The new TK1 and TK4 fueling nozzles are far more easy to operate. The clamping jaws are opened when the nozzle is disconnected and the sliding sleeve need not being pulled back to connect the nozzle.

This "push to connect" feature makes even difficult-

to-access receptacles easy to refuel due to the extended construction of the nozzle.

Features:

- Compatible with the NGV1 receptacle profile (TK1/TK4)
- Compatible with the Italian receptacle profile (TK4i)
- Push-Pull actuation
- Plastic thermal protection
- WEH-JAW locking mechanism
- High-grade materials - corrosion resistant
- Integrated shut-off valve
- Compact design



Italian receptacle profile

Innovation! The fueling nozzle type **TK4i** has been designed especially for the Italian NGV market enabling to connect to the Italian receptacle with a push-pull nozzle. Functioning is the same as for type TK1/4. The jaws of the TK4i are constructed to avoid marks on the receptacle, as often realized when using ball valves.

WEH also offers appropriated adaptor nozzles (see page 30) for Italians with the new Italian standard, who have to refuel in Germany.

Function

The jaws of TK1/TK4 and TK4i fueling nozzles clamp onto the receptacle. While the fueling nozzle is connected, the shut-off valve in the nozzle will open. The pressure-tight connection is established.



Type TK1, TK4 and TK4i

Technical Data:

1. Application:

Slow fill (TK1) and fast fill (TK4) of CNG vehicles. Fueling nozzle TK1/TK4 designed to be used with WEH-TN1 receptacle. Fueling nozzle TK4i to be used with Italian profile. Operation only by specially trained personnel. No self-service operation!

2. Pressure range (NGV1):

B200 acc. to ISO 14469, others on request

3. Operating pressure:

max. 350 bar (5000 psi)

4. Temperature range :

-40°C up to +80°C

5. Flow Rate:

TK1: Cv 0.5, 250 SCFM

TK4: Cv 1.1, 1500 SCFM

TK4i: Cv 1.1, 1500 SCFM

6. Design:

All parts corrosion-resistant steel; with plastic thermal protection.

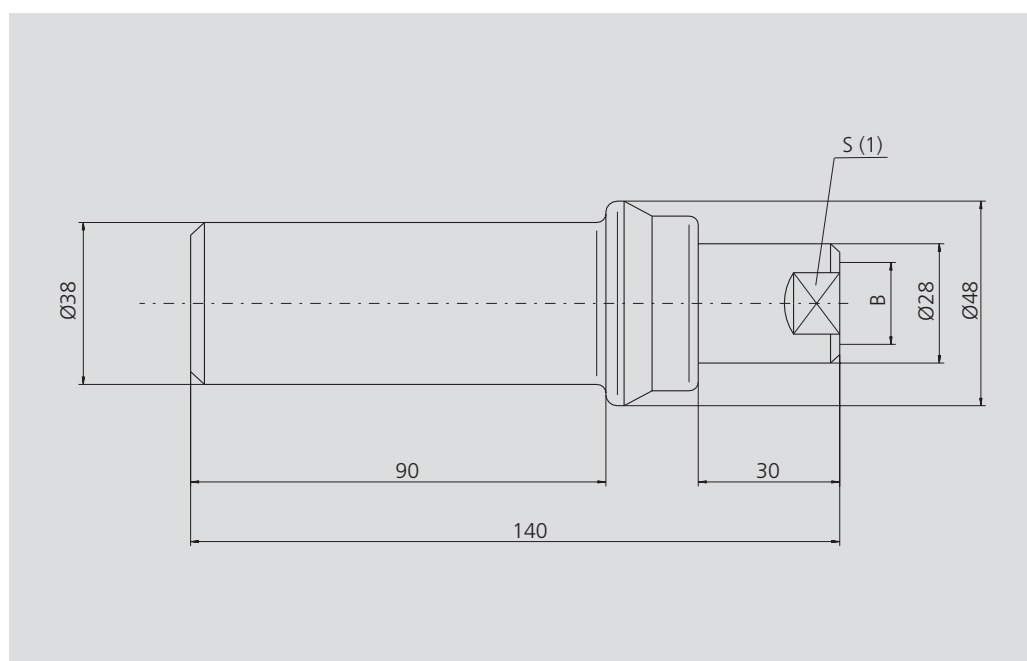
7. Seal:

Natural gas compatible

8. Registration:

PED 97/23/EU: CE 0036

Dimensions (mm):



Ordering:

Inlet port 'B' for TK1/TK4 and TK4i available with other thread sizes on request.

Description	Inlet B	S (1)	Part No.
TK1	UNF 9/16" - 18 / SAE-Boss	24 mm	C1-15458
TK1	UNF 9/16" - 18 left / SAE-Boss	24 mm	C1-15501
TK4	UNF 9/16" - 18 / SAE-Boss	24 mm	C1-15459
TK4	UNF 9/16" - 18 left / SAE-Boss	24 mm	C1-53701
TK4i	NPT 1/4" internal thread	27 mm	C1-30943
TK4i	UNF 9/16" - 18 / SAE-Boss	27 mm	C1-17901

Type TN1

NGV1 - Receptacle

Due to the sleek, internal aero-dynamic design of the TN1 receptacle, chatter caused during the filling process is greatly reduced and maximum flow rate achieved. The WEH TN1 has an integrated check valve system designed to minimize the effect that dirt

particles have on sealing components within the receptacle. Therefore, the TN1 receptacle is a very durable unit, minimizing maintenance and down-time.

There is no high frequency noise during refueling with the TN1 receptacle when used with WEH nozzles!

Features:

- Designed to meet NGV1 standard
- Compatible with all nozzles designed for NGV1 receptacle
- Optional integrated particle filter 50 micron
- Integrated non-contact high-flow check valve
- Sealing-friendly design
- Reduces chatter during refueling



Option:



Integrated particle filter

The WEH TN1 Receptacle works best with WEH Fueling Nozzles. We recommend the nozzles type TK15, TK16 CNG, TK10, TK1 and TK4.

With WEH one step ahead

Using an integrated particle filter avoids dirt ingress and therefore leakage at the receptacle which gives enhanced safety and reliability - unrenounceable features for NGV products.

Technical Data:

1. Application:

Receptacle for NGV refueling. Designed to be used with WEH Fueling Nozzles Type TK1, TK4, TK10, TK15 and TK16 CNG.

2. Pressure range (NGV1):

B200 acc. to ISO 14469, others on request

3. Operating pressure:

max. 350 bar (5000 psi)
Parts with ECE approval:
max. 260 bar (3700 psi)

4. Temperature range:

-40°C up to +80°C
Parts with ECE approval:
-40°C up to +120°C

5. Design:

All parts corrosion-resistant steel. Dust protection cap.

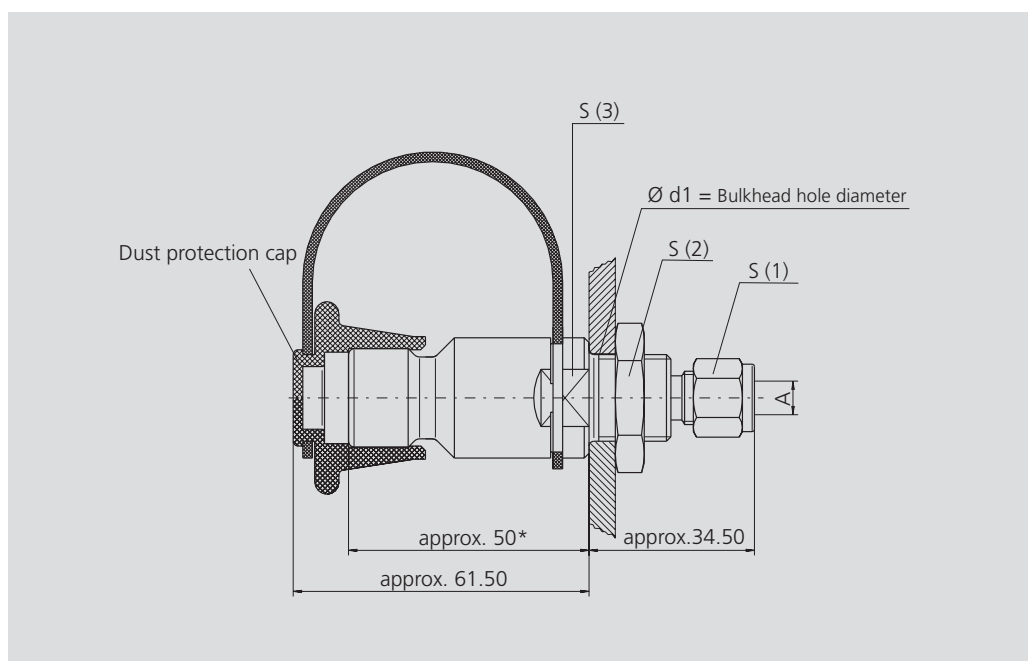
6. Seals:

Natural gas compatible

7. Registration:

For max. 350 bar:
approval available
For max 260 bar:
ECE R110 available
For all pressure ranges:
PED 97/23/EU: CE 0036

Dimensions (mm):



* Special versions up to a minimum length of 41 mm possible! Please contact us!

Ordering:

Other inlet threads and versions on request

Description	Inlet A*	S (1)	S (2)	S (3)	Ø d1	Part No.
TN1	Ø 6 mm tube	14 mm	24 mm	22 mm	18.5 mm	C1-15703/4
TN1	Ø 8 mm tube	16 mm	24 mm	22 mm	18.5 mm	C1-15704/4
TN1	Ø 10 mm tube	19 mm	24 mm	22 mm	18.5 mm	C1-15705/4
TN1	Ø 1/4" tube	9/16"	24 mm	22 mm	18.5 mm	C1-15708/4
TN1	Ø 3/8" tube	11/16"	24 mm	22 mm	18.5 mm	C1-15709/4
TN1	Ø 1/2" tube	7/8"	27 mm	27 mm	22.5 mm	C1-15710/4
TN1 incl. particle filter	Ø 6 mm tube	14 mm	24 mm	22 mm	18.5 mm	C1-19050/4
TN1 incl. particle filter	Ø 8 mm tube	16 mm	24 mm	22 mm	18.5 mm	C1-19057/4

* Twin ferrule fitting unless other wise specified!

Type TN1

Combined Receptacle for the NGV1 standard and ball locking nozzles to the Italian standard

In cooperation with the Adam Opel AG Germany, WEH GmbH have now developed a receptacle which provides a simple solution to the problem of different receptacle standards in Europe. The patented combined TN1 receptacle is suitable for nozzles to NGV1 standard as well as for ball locking nozzles to the Italian standard. An

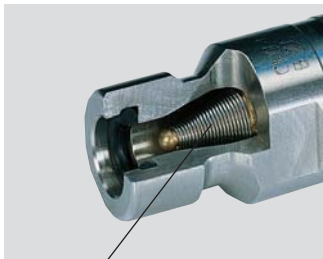
adaptor nozzle is no longer needed. The WEH-Receptacle satisfies all operational requirements, such as the reduction of chatter during refueling. A 50 micron particle filter may be integrated thus protecting the vehicle high pressure system from dirt ingress. Down-time is reduced to a minimum by the extremely low maintenance requirement.

The TN1 is equipped with an integrated check valve.

There is no high frequency noise during refueling with the TN1 receptacle when used with WEH nozzles!

Features:

- Reduces chatter during refueling
- Compatible with all nozzles designed for NGV1 and Italian standard
- Integrated particle filter (50 micron)
- Integrated non-contact high-flow check valve
- Sealing-friendly design



Integrated particle filter

The WEH-TN1 Receptacle works best with WEH Fueling Nozzles. We recommend nozzle types TK1, TK4, TK4i, TK10, TK10i, TK15 and TK16 CNG.

With WEH one step ahead

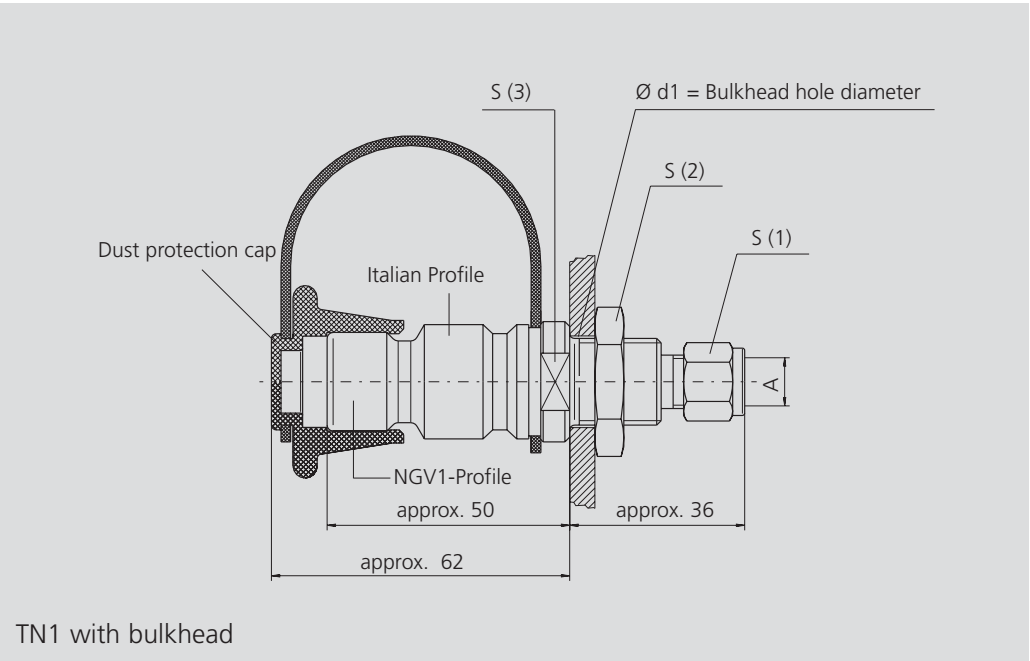
Using an integrated particle filter prevents dirt ingress from the outside and therefore leakage at the receptacle. Safety and reliability are ensured - unrenounceable

features regarding the high requirements CNG components have to face.

Technical Data:

- 1. Application:**
Receptacle for NGV refueling. Designed to be used with WEH Fueling Nozzles Type TK1, TK4, TK4i, TK10, TK10i, TK15, TK16 CNG and ball locking nozzles to the Italian standard.
- 2. Pressure range (NGV1):**
PN 200 bar (2900 psi)
others on request
- 3. Operating pressure:**
max. 260 bar (3700 psi)
- 4. Temperature range:**
-40°C up to +120°C
- 5. Design:**
All parts corrosion-resistant steel, with dust protection cap.
- 6. Seals:**
Natural gas compatible
- 7. Registration:**
ECE R110 available
PED 97/23/EU: CE 0036

Dimensions (mm):



Ordering:

Other inlet threads and versions on request.

Description	Inlet A*	S (1)	S (2)	S (3)	Ø d1	Part No.
TN1 incl. particle filter	Ø 6 mm tube	14 mm	24 mm	22 mm	18.5 mm	C1-34384
TN1 incl. particle filter	Ø 8 mm tube	16 mm	24 mm	22 mm	18.5 mm	C1-34391

* Twin ferrule fitting unless other wise specified!

Type TS50

Lockable Fueling System with NGV1 receptacle and starter-motor cut-out switch

The **new** TS50 Fueling System is a surface mounted, built-in housing with integrated TN1 receptacle and an integrated starter-motor cut-out switch. The interior of the fueling system is protected from dirt and splash water by a lockable cap thus reducing the danger of freezing. To prevent unauthorized use, the cap of the fueling system can

only be unlocked with a key. The integrated starter-motor cut-out switch means the vehicle can't be driven away during refueling. The TS50 is additionally equipped with a protection tube for gas venting diverting the gas away from the connection in case of gas leakage. The TS50 consists of two housings which clip into position and are secured by

three self-tapping screws installed from the outside of the vehicle.

Features:

- Small, handy key
- Protection against unauthorized use
- Dirt and splash waterproof construction
- No danger of freezing
- Starter-motor cut-out switch
- Gas venting via protection tube
- Cap with identification surface
- Equipped with WEH-TN1 receptacle



Fueling System with lockable cap



Cap with identification surface

The standard TS50 fueling system is equipped with a marked cap. Personalized designs are available. Please contact us for further details!

Technical Data:

1. Application:

Fueling system for installation in cars.

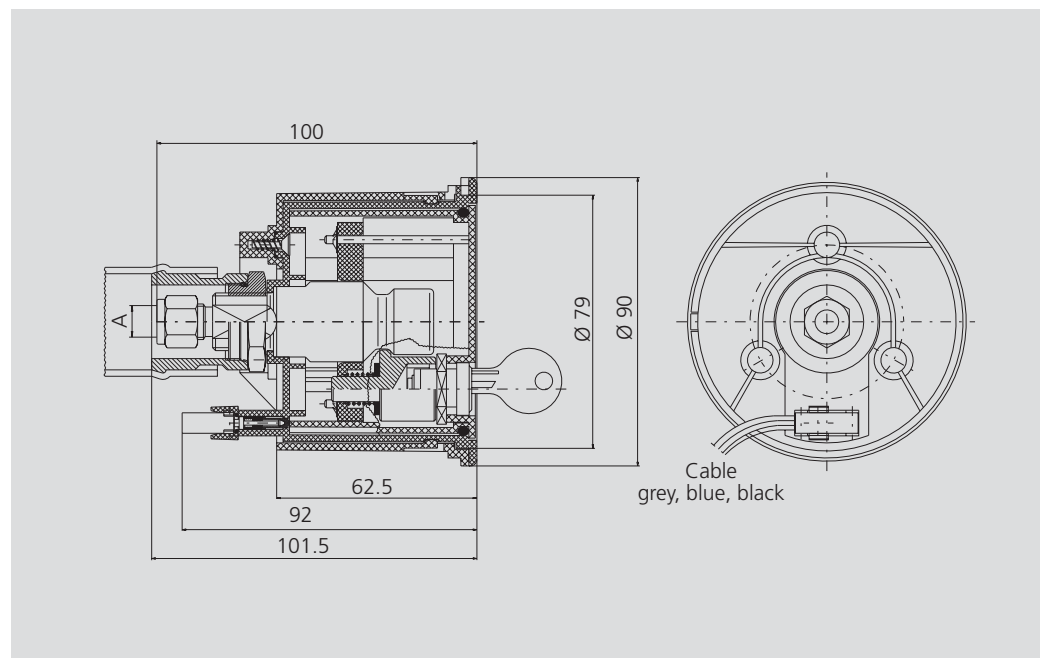
2. Design:

Plastic housing with TN1 receptacle and protection tube (protection type IP67) for gas venting, starter-motor cut-out switch, including 2 keys.

3. Registration:

TN1: Approval or namely
ECE R110 available
PED 97/23/EU: CE 0036

Dimensions (mm):



Ordering:

Other inlet threads and versions on request.

Description	Inlet A*	Part No.
TS50	Ø 6mm tube	C1-18520/4
TS50	Ø 8mm tube	C1-18522/4
TS50	Ø 10 mm tube	C1-18523/4

* Twin ferrule fitting unless other wise specified!

Type TVR1

With this product WEH offers an advanced, high performance check valve for use with natural gas. The check valve system is designed to minimize the effect that dirt particles have on the sealing components within the unit.

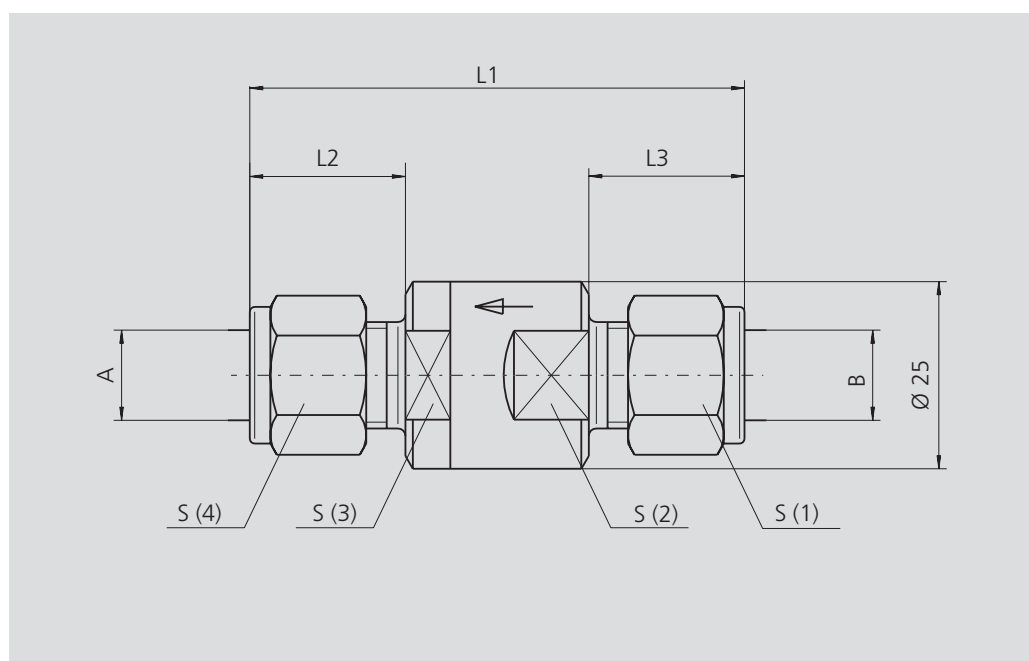
The WEH-TVR1 Check Valve is constructed of high-grade corrosion-resistant steel achieving a very durable unit (See TN1 receptacle).



Technical Data:

- 1. Operating pressure:**
max. 350 bar (5000 psi)
Parts with ECE approval:
max. 260 bar (3700 psi)
- 2. Temperature range:**
-40°C up to +80°C
Parts with ECE approval:
-40°C up to +120°C
- 3. Design:**
All parts corrosion-resistant steel.
When enquiring for the WEH-TV1 Check Valve please specify your tube fitting.
- 4. Seals:**
Natural gas compatible
- 5. Registration:**
For max. 350 bar:
approval available
For max 260 bar:
ECE R110 available.
PED 97/23/EU: CE 0036

Dimensions (mm):



Ordering:

Description	Inlet B	Outlet A	S (1) mm	S (2) mm	S (3) mm	S (4) mm	L1 mm	L2 mm	L3 mm	Part No.
TVR1	Ø 6 mm tube	Ø 6 mm tube	14	22	22	14	approx.63	17.5	17.5	C1-34387
TVR1	Ø 8 mm tube	Ø 8 mm tube	16	22	22	16	approx.63	17.5	17.5	C1-15475/4
TVR1	Ø 10 mm tube	Ø 10 mm tube	19	22	22	19	approx.66	20.6	20.6	C1-15476/4
TVR1	Ø 6 mm tube	M12x1	14	22	22	—	approx.50.5	11	12	C1-34389
TVR1	Ø 6 mm tube	G1/4"	14	22	22	—	approx.50.5	11	12	C1-35819

Type TK25

Patented Fueling Nozzle for NGV refueling to be connected and disconnected under pressure (nominal bore 12 mm)

Features:

- Fueling nozzle for fast filling at self-serve fueling stations
- Integrated swivel joint
- Extremely high flow rate → short filling times
- Recirculation of vented gas
- Safety features when not connected
- WEH-JAW locking mechanism
- High-grade materials – corrosion resistant

Type TK25 meets all requirements placed on a fueling nozzle for bus refueling. Thus making NGV refueling as easy as diesel refueling.

Connecting procedure:

Place the nozzle onto the receptacle similar to a diesel nozzle, with a 180 degree turn of the handle, the filling procedure can start. The TK25 is also equipped with a high-pressure swivel joint

enabling the nozzle to turn to any position you choose (similar to a diesel nozzle). Technically the TK25 is similar to TK15.



Safety

TK25 offers state of the art safety features for the operator even in the case of a malfunction of the receptacle (e.g. leakage). The TK25 remains connected to the receptacle until the void between inlet valve and receptacle is depressurized. That means in extreme circumstances when the receptacle is leaking, the TK25 can safely vent the

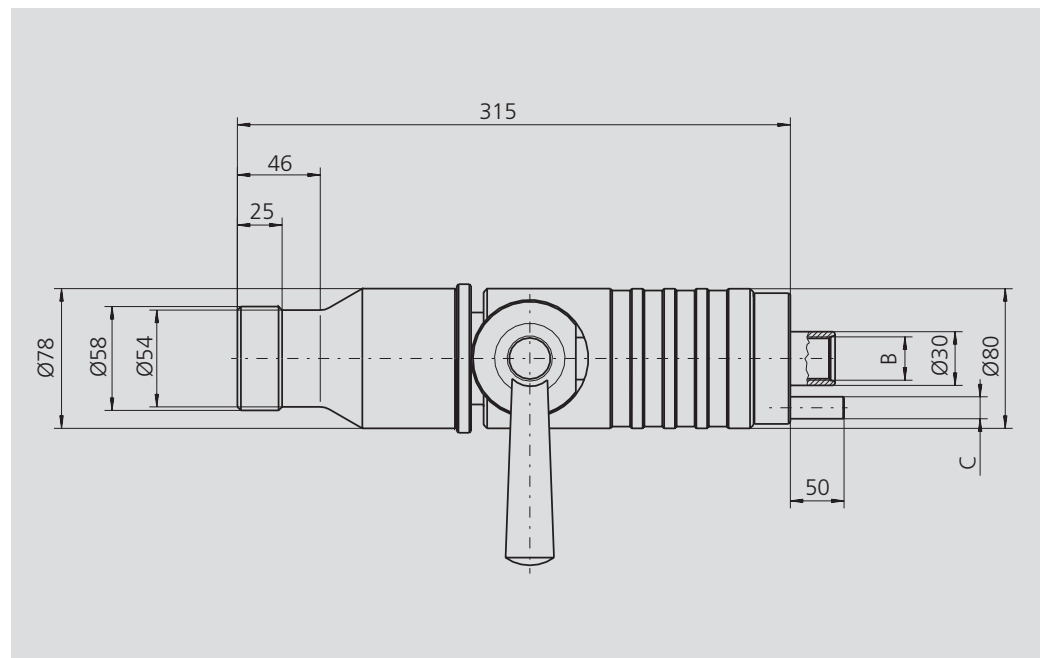
whole tank unless other measures, as e.g. closing off a manually operated ball valve, thus avoiding a dangerous situation for the user, where the fueling nozzle could be disengaged under high pressure. To achieve optimum performance it is recommended that the WEH-TN5 receptacle is used with the TK25 fueling nozzle.

For further information on the filling hoses (filling and venting hoses) refer to page 34 of this catalogue.

Technical Data:

- 1. Application:**
NGV fast filling at self-serve fueling stations.
The fueling nozzle type TK25 is designed to be used with WEH-TN5 receptacle (large receptacle).
- 2. Operating pressure:**
max. 350 bar (5000 psi),
others in preparation
- 3. Temperature range:**
-40°C up to +80°C
- 4. Flow rate:**
Cv 2.2
- 5. Design:**
All parts corrosion-resistant steel with plastic thermal protection, vent pipe and dispenser mounting
- 6. Seals:**
Natural gas compatible
- 7. Registration:**
Approval available
PED 97/23/EU: CE 0036

Dimensions (mm):



Ordering:

Description	Inlet B	Vent pipe C	Part No.
TK25	UNF 7/8" -14 / SAE Boss	3/8" tube	C1-30223

Inlet port 'B' available with other thread sizes on request.

Type TK22

Patented Fueling Nozzle for fast filling buses and trucks

Type TK22 is WEH's fueling nozzle for NGV refueling of buses. The compact design and the unique WEH-JAW locking mechanism provide a pressure-tight connection within seconds.

Application:

The Type TK22 can be used wherever the system is pressurized and vented by the filling station. You don't need expensive fueling nozzles with complicated check valves.

Easy push-pull connection. The nozzle only has to be placed onto the receptacle and the clamping jaws close. Disconnection is effected by pulling back the outer sleeve thus making operation child's play.

Features:

- Push-Pull actuation
- Extremely high flow rate
- Plastic thermal protection
- WEH-JAW locking mechanism
- High-grade materials – corrosion resistant
- Integrated shut-off valve
- Compact design



Connecting procedure:

Place the nozzle onto the receptacle and bring the sliding sleeve into the forward position.

→ The jaws of the fueling nozzles clamp onto the receptacle. When connected, the integrated shut-off valve opens; the pressure-tight connection is established.

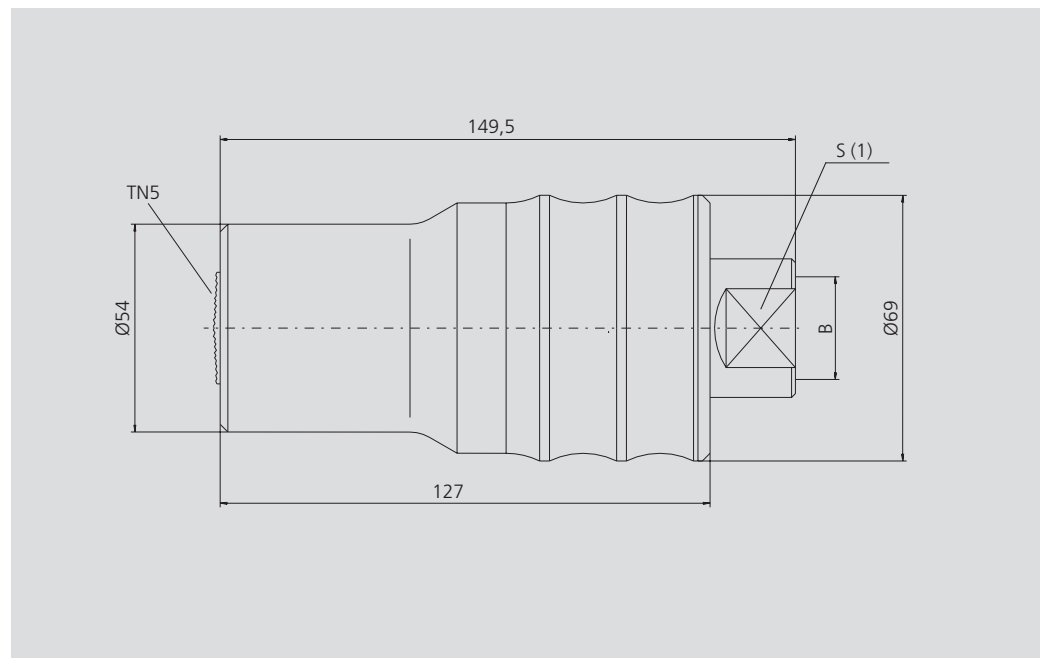
Extensive trials have been carried out during the development of the WEH fueling nozzle type TK22 to meet all requirements of NGV refueling.

To achieve optimum performance it is recommended that the WEH-TN5 receptacle is used with the TK22 fueling nozzle. For self-serve refueling we recommend the WEH type TK25. For further information contact WEH!

Technical Data:

- 1. Application:**
NGV Fast filling, designed to be used with WEH-TN5 receptacle.
- 2. Operating pressure:**
max. 350 bar (5000 psi)
- 3. Temperature range:**
-40°C up to +80°C
- 4. Design:**
All parts corrosion-resistant steel, with plastic thermal protection
- 5. Seals:**
Natural gas compatible
- 6. Registration:**
Approval available.
PED 97/23/EU: CE 0036

Dimensions (mm):



Ordering:

Description	Inlet B	S (1)	Part No.
TK22	UNF 7/8" -14 SAE-Boss	30 mm	C1-18890

Inlet port 'B' for TK22 nozzle available with other thread sizes on request.

Type TN5

NGV-Receptacle for buses and trucks

The type TN5 receptacle is designed specifically for bus refueling. Due to the sleek, internal aerodynamic design the TN5 receptacle gives low noise (no high frequency whistle) combined with maximum flow rate and quick filling.

The TN5 receptacle is a very durable unit, minimizing maintenance and down-time. The WEH-TN5 receptacle has an integrated check valve system designed to minimize the effect that dirt particles have on the sealing components within the receptacle.

There is no high frequency noise during refueling with TN5 receptacle.

Features:

- Integrated non-contact high-flow check valve
- Sealing-friendly design
- Reduces chatter during filling



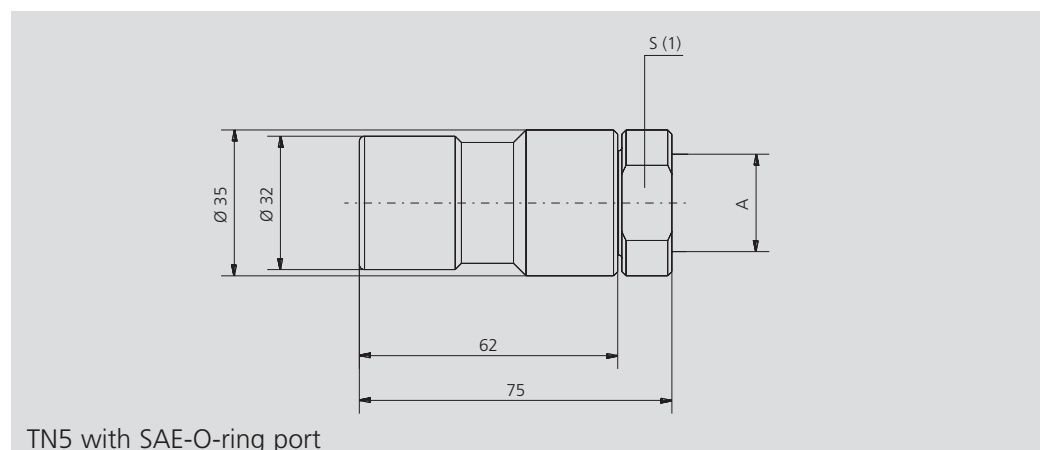
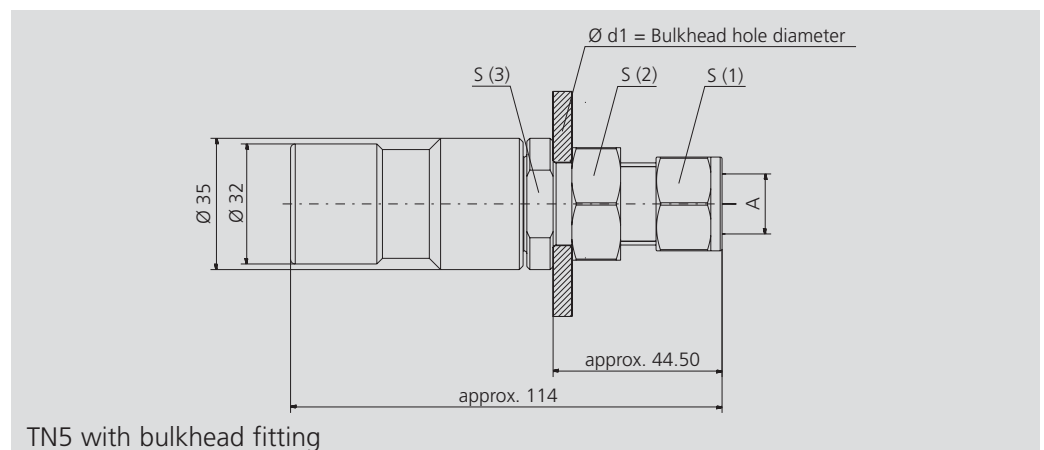
Dust protection cap



Technical Data:

- | | | |
|--|--|--|
| 1. Application:
Receptacle for NGV refueling of buses and trucks at self-serve fueling stations. | 3. Temperature range:
-40°C up to +120°C | 6. Seals:
Natural gas compatible |
| 2. Operating pressure:
max. 260 bar (3700 psi) | 4. Nominal bore:
12 mm | 7. Registration:
Approval available.
ECE R110 available.
PED 97/23/EU: CE 0036 |
| 5. Design:
All parts corrosion-resistant steel, with dust protection cap. | | |

Dimensions (mm):



Ordering:

Description	Inlet A*	S (1)	S (2)	S (3)	Ø d1	Part No.
TN5	Ø 16 mm tube	25 mm	30 mm	30 mm	22.2 mm	C1-35401
TN5	UNF 7/8" - 14 / SAE-Boss	30 mm	—	—	—	C1-35432

* Twin ferrule fitting unless other wise specified!

Type TVR5

WEH-TV5 is the largest of our check valves. It is most efficient and developed specifically for NGV buses. The check valve system is designed to minimize the

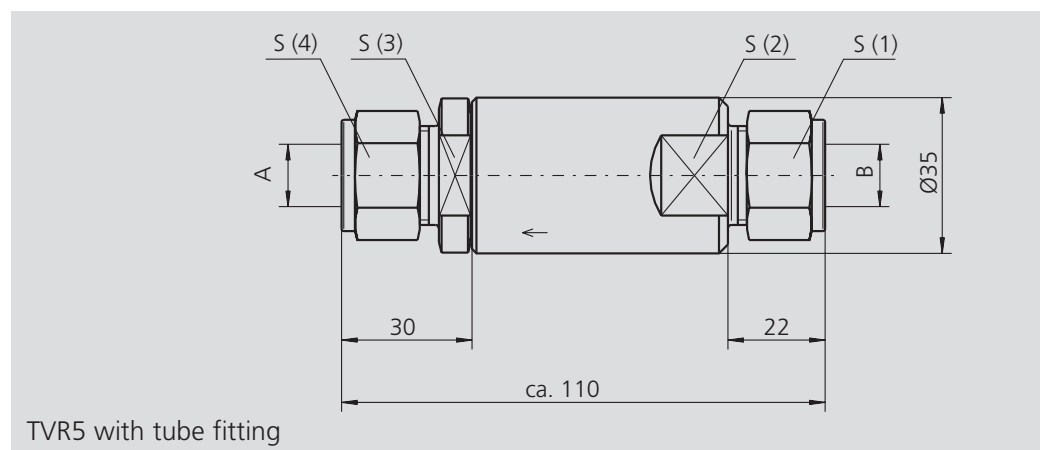
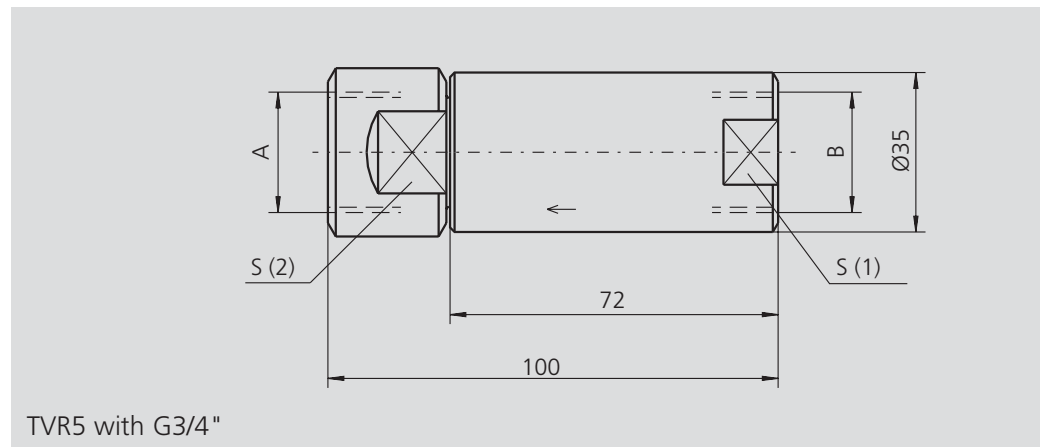
effect that dirt particles have on the sealing components within the unit. The WEH-TV5 check valve is constructed of high-grade corrosion-resistant steel.



Technical Data:

- 1. Operating pressure:**
max. 350 bar (5000 psi)
Parts with ECE approval:
max. 260 bar (3700 psi)
- 2. Temperature range:**
-40°C up to +80°C
Parts with ECE approval:
-40°C up to +120°C
- 3. Design:**
All parts corrosion-resistant steel;
When enquiring for the WEH-TV5 Check valve please specify your tube fitting.
- 4. Seals:**
Natural gas compatible
- 5. Registration:**
For max. 350 bar:
Approval available.
For max. 260 bar:
ECE R110 available.
PED 97/23/EU: CE 0036

Dimensions (mm):



Ordering:

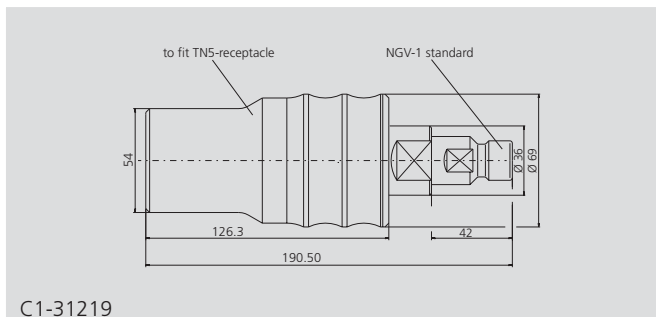
Description	Inlet B*	Outlet A*	S (1)	S (2)	S (3)	S (4)	Part No.
TVR5	G3/4" internal thread	G3/4" internal thread	32 mm	30 mm	—	—	C1-15507
TVR5	Ø 16 mm tube	Ø 16 mm tube	25 mm	30 mm	30 mm	25 mm	C1-15506

* Twin ferrule fitting unless other wise specified!



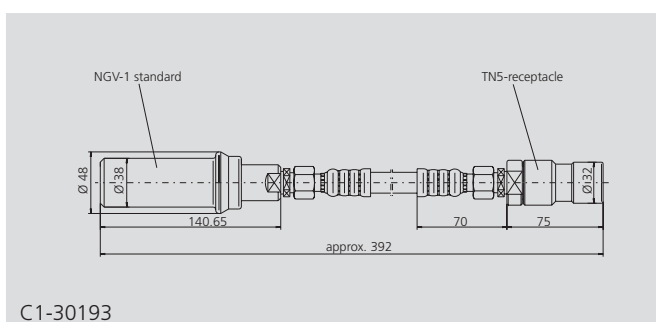
Adaptor Nozzle
for refueling of buses with
TN5 receptacle at car refue-
ling stations with NGV1
standard.

Ordering:
C1-31219



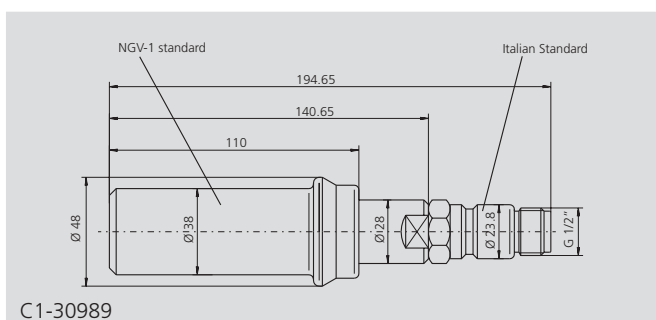
Adaptor Nozzle
for refueling of cars with
NGV1 standard at bus
refueling stations with TN5
receptacle system.

Ordering:
C1- 30193



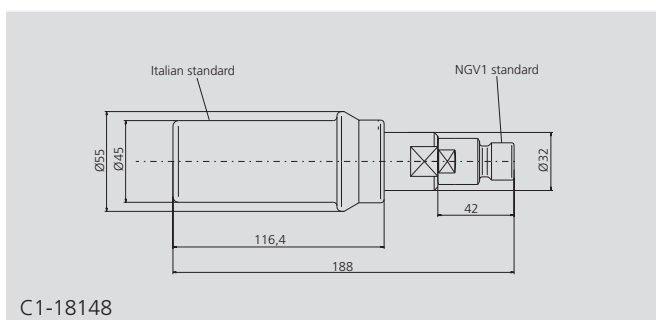
Adaptor Nozzle
for refueling a vehicle with
NGV1 profile with a fueling
nozzle with Italian standard.

Ordering:
C1-30989



Adaptor Nozzle
for refueling a receptacle
profile with **new** Italian
standard with a fueling
nozzle with NGV1 standard.

Ordering:
C1-18148: for Italian standard
without external thread



Adaptor Nozzle
for refueling a receptacle
profile with Italian standard
with a fueling nozzle with
NGV1 standard.

Ordering:
C1-13730: for Italian
standard **with** external
thread

Technical Data:

- 1. Operating pressure:**
max. 250 bar (3600 psi)
- 2. Seals:**
Natural gas compatible

- 3. Temperature range:**
-40°C up to +80°C

Design:

All parts corrosion-resistant steel.

Type TK6 and TK21

Services nozzle for cars and buses

Buses and cars running on natural gas have to be serviced and checked regularly, i.e. all pressure vessels have to be discharged. WEH's service nozzles type TK6 and TK21 have been

designed for this specific purpose. The service nozzle has only to be placed onto the receptacle and all vessels can be discharged via the receptacle. No additional locking device or ball valve

is required when the TK21 service nozzle is used.

Merkmale:

Features:

- Discharge via filling receptacle
- No additional locking device required
- Plastic thermal protection
- To fit WEH-TN1 receptacle (TK6) or WEH-TN5 receptacle (TK21) (without filter)



Example: TK21 to fit TN5 receptacle

Technical Data:

1. Operating pressure:
max. 80 bar (1200 psi)

2. Design:
All parts corrosion-resistant steel

3. Seals:
Natural gas compatible

Ordering:

Description	Part No.
TK6 (car)	C1-17757
TK21 (bus)	C1-15162

Break-away Coupling

Type TSA1 and TSA5

Break-away coupling for car and bus fueling stations

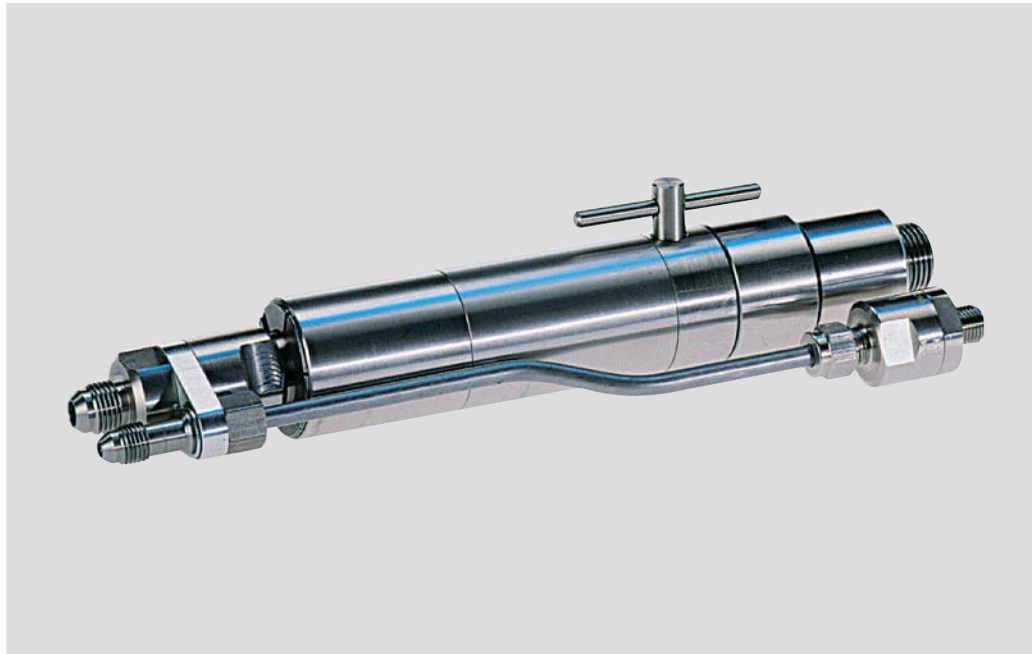
The break-away couplings type **TSA1** (car) and **TSA5** (truck/bus) offer additional safety for your fueling station. The coupling consists of a receptacle and a nozzle which are installed between the dispenser and the fueling hose. In the event of accidental deployment, e.g.

driving a vehicle from the dispenser with the nozzle remaining in the vehicle fuel port, the coupling will separate and protect your dispensing equipment against damage. The detached coupling can be easily reattached and placed back in service after having been

function tested. The integrated filter system provides clean natural gas and is easy to maintain.

Features:

- Integrated renewable filter
- Re-usable without factory reservicing
- Installation at the dispenser
- Compact design



The break-away device consists of a break-away coupling, a receptacle and gas recirculation with check valve.

Break-away Coupling

Type TSA1 and TSA5

Technical Data:

- 1. Application:**
Break-away coupling for car and bus refueling stations

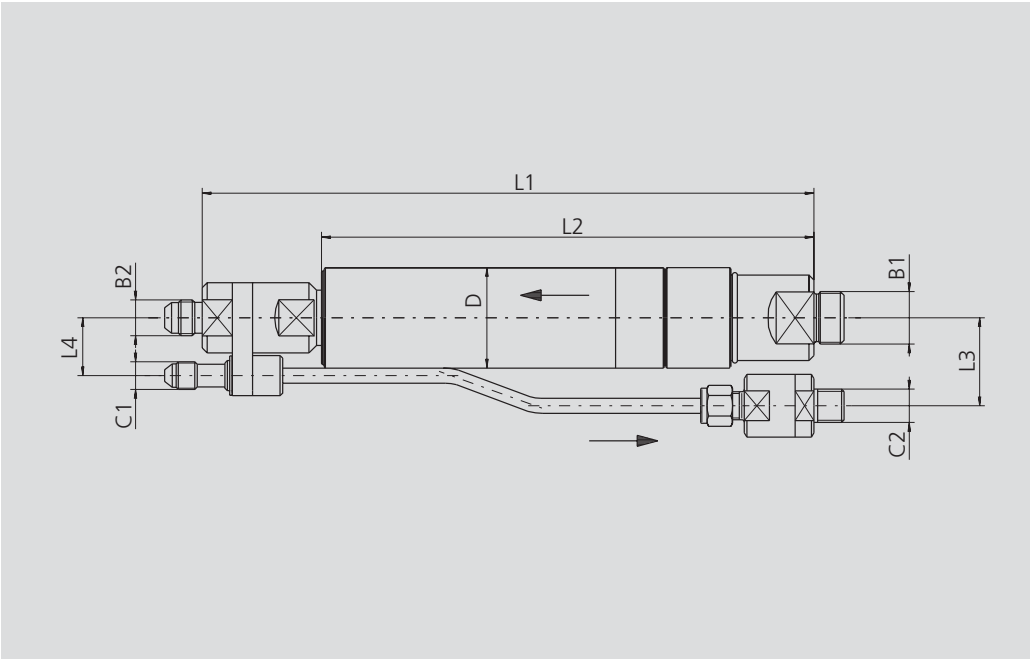
2. Operating pressure:
max. 350 bar (5000 psi)
- 3. Temperature range:**
-40°C up to +80°C

4. Nominal bore:
TSA1: 10 mm
TSA5: 12 mm
- 5. Design:**
All parts corrosion-resistant steel and aluminium.

6. Seals:
Natural gas compatible

7. Registration:
PED 97/23/EU: CE 0036

Dimensions (mm):



Type	L1	L2	L3	L4	B1	B2	C1	C2	D Ø
TSA1	243,5	196	35	23	G1/2"	UNF 9/16"-18	UNF 7/16"-20 *	G1/4"	40
TSA5	262	220	40	29	G3/4"	UNF 7/8"-14	UNF 9/16"-18 *	G1/4"	50

* acc. to SAE J 514, 37°

Ordering:

Description	Filter Size	Part No.
TSA1 with particle filter	40 Micron	C1-17195
TSA1 without particle filter	_____	C1-17196
TSA5 without particle filter	40 Micron	C1-17198

Filling Hoses for WEH fueling nozzles for Fast-Fill of buses and trucks

WEH have high-pressure hoses with recirculation lines to suit WEH-Filling nozzles type TK10, TK10i, TK15, TK16 CNG and TK25. The high-pressure hoses are available with the appropriated fittings. The filling and venting hoses can be delivered in different standard sizes. Special sizes and terminations are available on request.



Technical Data:

- 1. Pressure range:**
Up to 350 bar (5000 psi)

2. Temperature range:
-40°C up to +65°C
- 3. Design:**
Synflex 35NG

4. Standard sizes:
3m, 4 m, other lengths on request.
- 6. Registration:**
AGA approval

Ordering:

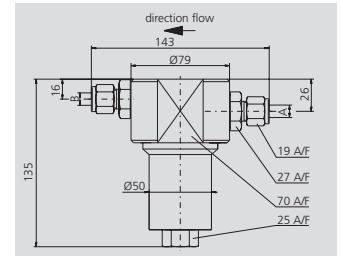
Hoses for	Filling hose	Venting hose
TK10/TK10i	UNF 7/16"-20 internal thread (NB 6mm)	UNF 7/16"-20 internal thread (NB 6mm)
TK15 / TK16 CNG	UNF 9/16"-18 internal thread (NB 10mm)	UNF 7/16"-18 internal thread (NB 6mm)
TK25	UNF 7/8"-14 internal thread (NB 12mm)	UNF 9/17"-18 internal thread (NB 6 mm)

Type TSF2 and TSF4

Filter for the fueling station and for vehicles

Dirt particles in the natural gas fuel may cause damage to the sealing components whilst refueling. The WEH-Filters are designed to capture dirt and gas-borne debris thereby reducing the danger of erosion.

Type **TSF4-SPECIAL** has been designed for use in NGV buses. The filter can be removed for cleaning purposes without tedious unscrewing of the media lines.



Type TSF4-SPECIAL



TSF2



TSF4

Technical Data:

- Operating pressure:**
max. 250 bar (3600 psi)
- Design:**
All parts corrosion-resistant steel
- Seals:**
Natural gas compatible
- Connecting Dimensions:**
TSF2: UNF 9/16"-18
TSF4: 16 mm twin ferrule fitting on both sides
TSF4-SPECIAL: 10 mm twin ferrule fitting on both sides, others on request
- Registration**
TSF4-SPECIAL:
ECE R110 available.
PED 97/23/EU: CE 0036

Ordering:

Description	Nominal bore NW	Part No.
TSF2	8 mm	C1-15334
TSF4	12 mm	C1-16843
TSF4-SONDER (with ECE R110)	12 mm	C1-47899

Type TZ21

A bi-fueled (CNG and petrol) vehicle is equipped with a bypass and a ball valve at the second check valve (see drawing next page) thus circumventing manually the internal check valve. This subsequent conversion can be effected without problems by any

vehicle converter. The tank of the service car will be refueled with CNG at the service station. The service car running for this purpose on petrol then drives to the broken down mono-fueled vehicle and refueling with CNG starts with the WEH emergency fueling set.

The service nozzle TK6 is placed into the receptacle of the service car. Another nozzle is connected to the broken down vehicle with a hose so that both vehicles are connected to each other.

WEH - Emergency fueling set TZ21

Content of a WEH-TZ21 emergency fueling set:

- 1 Fueling Nozzle Type TK4 (C1-15459)
- 1 Service Nozzle Type TK6 (C1-17757)
- 1 integrated Venting-Valve
- 1 Hose 35NG06 (Length 3m).
(the components for conversion of the service car are not included in this set)



The ball valve at the bypass of the service vehicle is opened. A lever is actuated at the service nozzle TK6 of the service car opening the valve of the receptacle (receptacle with check valve). The gas is lead at the fueling nozzle TK4 into the empty tank. When refueling is completed the fueling nozzle at the broken down vehicle is vented and can be removed. The lever

at the service nozzle of the service car is actuated and the valve (receptacle with check valve) is closed. Then the ball valve at the bypass of the service car is closed. The hose is vented by an integrated venting valve at the TK6 and the service nozzle at the service car can be removed, too. Now the mono-fueled CNG vehicle can drive away with a full CNG tank and the service

car can return to the service station running for this purpose again on petrol.

Technical Data:

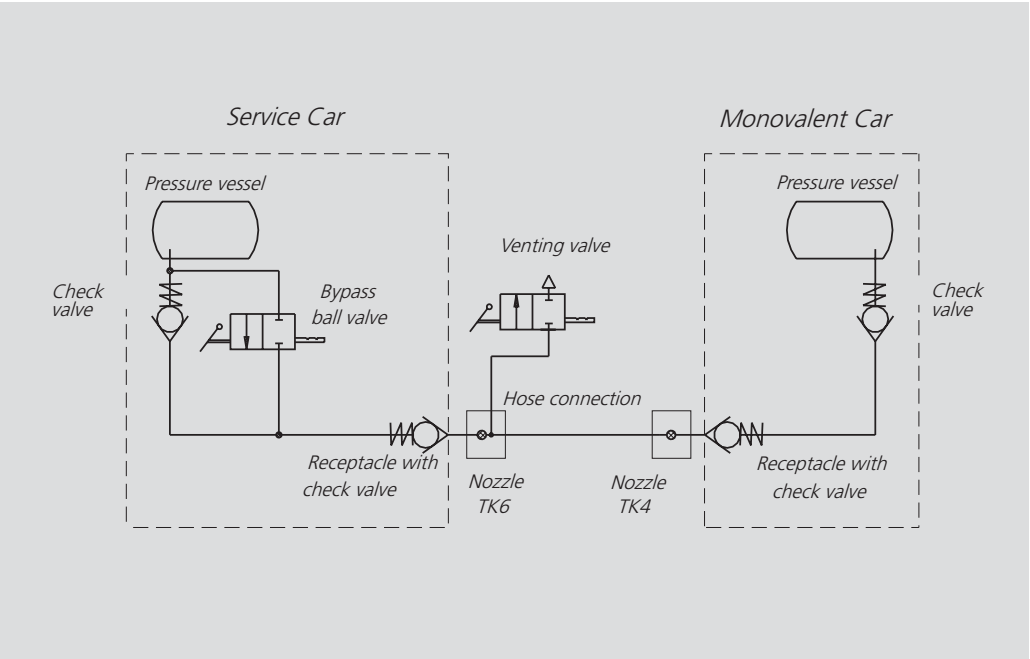
- 1. Seals:**
Natural gas compatible

2. Pressure range (NGV1):
B200 acc. to ISO14469

Operating pressure:
max. 250 bar (3600 psi)

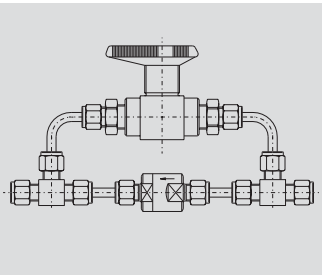
3. Temperature range:
-40°C up to +120°C
- Note:**
A WEH receptacle type TN1 (without filter) has to be installed at the service car for proper function. After installation of the components in the service car venting of the safety hose must work properly.

Function sketch:



Ordering:

Description	Part No.
TZ21	C1-17756



WEH offers a bypass for service cars consisting of check valve and ball valve. Please contact WEH!

Type TV15

Pneumatically actuated Linear Valve for use at CNG fueling stations

The new WEH pneumatic linear valve presents a world first in pneumatically operated valve systems offering unique features. The type TV15 linear valve is of compact design with outstanding performance. It is

suitable for filling and venting. The WEH TV15 may even eliminate the need for additional valves for some applications.

Features:

- Compact construction
- Quiet in operation
- Cushioned actuation
- Multiple functions
- Ease of maintenance



The following designs of WEH-Linear Valve Type TV15 are available:

- normal venting valve
- with integrated check valve
- with automatic venting
- with integrated check valve and automatic venting

Note:

High pressure gases are potentially dangerous. Do not use WEH-Valves without first reading and following the operating instructions included with the product. Additional copies of these instructions may be obtained from the distributor or manufacturer.

Technical Data:

1. Application:

Pneumatically actuated linear valve for use at CNG refueling stations.

2. Port thread P, A:

UNF 1 3/8"-12 external thread. On request type TV15 is also available with other inlet threads 'P' and 'A'.

3. Pressure range:

max. 300 bar (4350 psi)

Nominal pressure:

max. 420 bar (6090 psi)

Pilote pressure:

6 - 8 bar (90 - 120 psi)

Inlet thread Z:

G1/8"

4. Temperature range:

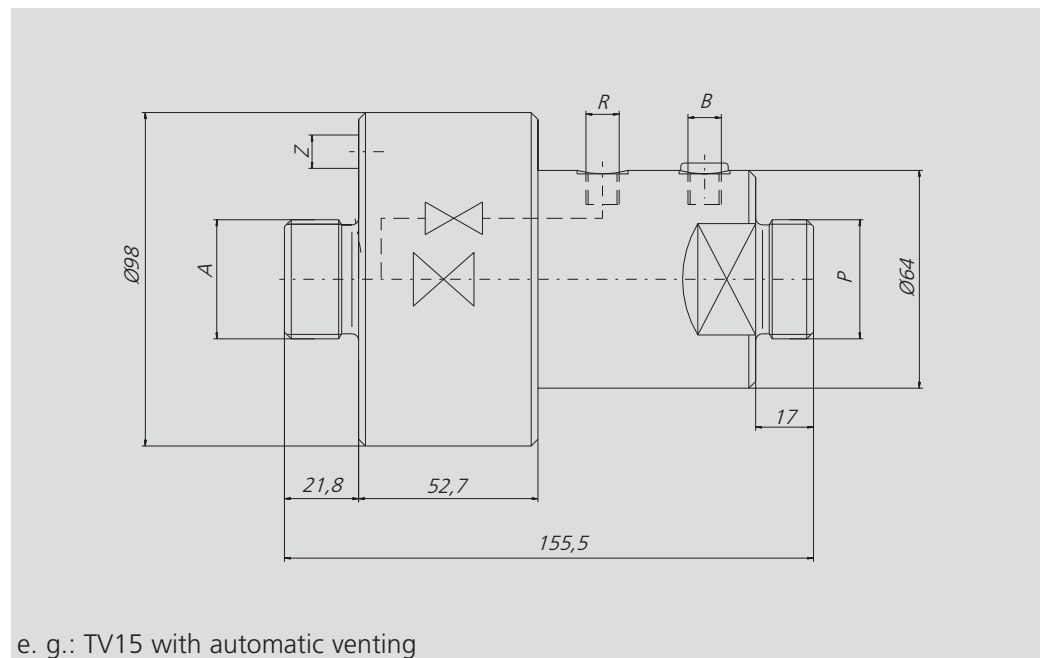
-40 °C up to + 80 °C

5. Design:

Piston corrosion-resistant stainless steel
remainder brass

6. Seals:

Natural gas compatible



Ordering:

When enquiring please indicate the requested execution!

- TV15 Basic version
- TV15 with automatic venting
- TV15 with integrated check valve
- TV15 with integrated check valve and automatic venting

Other products of WEH Gas Technology

Catalogue 50:

Leading in the field of hydrogen refueling catalogue for all necessary components for hydrogen fueling



Products of WEH Precision Connectors

Catalogue 35:

Quick connectors for leak-testing on components with threads, tubes, etc.

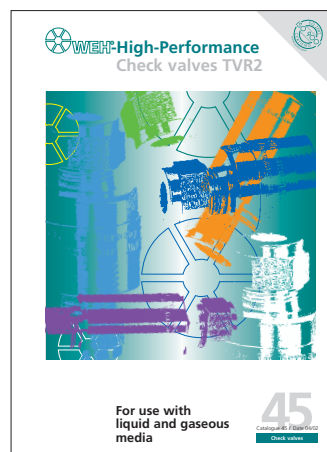
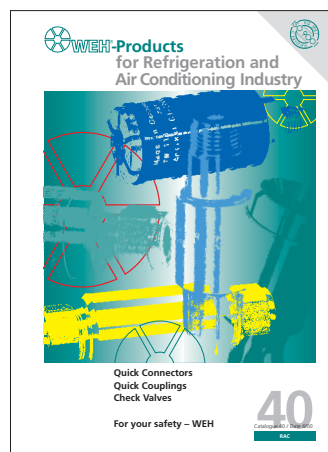


Catalogue 20:

Quick connectors for the gas industry, Check valves, swivel joints, etc.

Catalogue 40

Quick Connectors and Couplings for refrigerating and air conditioning industry



Catalogue 45:

Complete line of check valves from 4 mm to 50 mm nominal bore

Pressure Definition:

Abbreviation	Pressure type	Description / Explanation
PB	Operating pressure	The max. pressure to which the component is subjected.
PP	Test pressure	The pressure to which the component is tested by the manufacturer ('once only' test)
PN	Nominal pressure	This is a standardized term
PX	Bursting pressure	The pressure at which the component fails the test
PS	Pilot pressure	For pneumatically actuated connectors. PS is normally the air pressure in the factory system

Admissible operating pressure:

The admissible operating pressure has been determined as follows:
100.000 x cycles impacting the component with 125 % of the operating pressure

(PB). The pressure wave is sinusoidal.
The test is conducted at normal room temperature of 20 °C.

Pressure / temperature:

For higher temperatures the max. operating pressure needs to be reduced dependant on the application. Recommended values herefore are: 50 °C - 5%
100 °C - 10%
150 °C - 20%

Guarantee:

The information provided in this documentation is based on many years of experience in manufacturing and supplying these products. Because the customer controls the installation and environmental parameters and recommendations can only be given against such information WEH cannot guarantee the correctness of any application or give

guarantees of durability in specific applications. The catalogue values for pressure temperature etc. are based on actual test results and should be used in conjunction with the pressure definition above. Please contact us for special applications that lie outside of these parameters. Great care has been taken in the preparation of this

catalogue. However, WEH is not responsible for typographical errors and damages arising therefrom.

Validity:

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Telefax: 07303 / 41472

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2. Angebot und Preise

Unsere Angebote sind unverbindlich. Die Preise sind freibleibend und können ohne vorherige Bekanntgabe geändert werden. Sie verstehen sich in EURO zuzüglich der jeweils aktuell gültigen gesetzlichen Mehrwertsteuer. Alle Preise gelten ab Werk (EXW, Incoterms 1990). Sie verstehen sich ohne Transport, Versicherung, Inbetriebsetzung und spätere, eventuelle Anwendungsunterstützung. Es gelten ausschließlich die Listenpreise mit den jeweils aufgeführten Mengenrabatten.

Bei einem Warenwert unter EURO 50,- behalten wir uns das Recht vor einen angemessenen Mindermengenzuschlag zu erheben.

3. Lieferung, Lieferzeit, Gefahrenübergang, Rücknahme, Stornierung

Lieferzeiten sind bis zur Auftragsannahme unverbindlich - zwischenzeitlicher Verkauf vorbehalten, soweit wir nicht verbindlich Lieferfristen schriftlich zusagen oder Liefertermine ausdrücklich als fix bezeichnet werden. Liefertermine beziehen sich auf den Abgang ab Werk Illertissen. Die Lieferfrist ist eingehalten, wenn bis zu ihrem Ablauf der Liefergegenstand das Werk verlassen hat oder die Versandbereitschaft mitgeteilt ist.

Teillieferungen sind in gewissem Umfang zulässig. Höhere Gewalt und andere von uns nicht verschuldete Ereignisse, insbesondere Lieferverzögerungen unserer Vorlieferanten, Streik, Betriebsstörungen, Material- oder Energiemangel berechtigt uns, die Lieferzeit um die Dauer zuzüglich einer angemessenen Anlaufzeit zu verlängern oder, soweit dies wirtschaftlich vertretbar ist, ganz oder teilweise vom Vertrag zurückzutreten. Schadenersatzansprüche des Käufers wegen eines solchen Rücktritts vom Vertrag bestehen nicht. Wird die zulässige Lieferfrist von uns mehr als 4 Wochen überschritten, so hat der Kunde das Recht, uns eine angemessene Nachfrist zu setzen. Kann der Vertrag auch innerhalb dieser Nachfrist nicht erfüllt werden, so ist der Kunde berechtigt ohne weitergehende Rechte, Forderungen oder Ansprüche gleich welcher Art, außer es fällt uns Vorsatz oder grobe Fahrlässigkeit zur Last, durch schriftliche Erklärung uns gegenüber vom Vertrag zurückzutreten. Änderungen in der technischen Ausführung unserer Ware bleiben – ohne besondere Benachrichtigung des Käufers – vorbehalten, sofern der Wert und die Verwendbarkeit der angebotenen Ware hierdurch nicht beeinträchtigt werden.

Bei Muster- und Sonderanfertigungen außerhalb des jeweils gültigen Liefersortiments gelten angemessene Mehr- oder Mindermengen als vereinbart. Die Gefahr geht auf den Kunden über, sobald die Ware unser Haus verlässt.

Rücksendungen bedürfen unserer vorherigen schriftlichen Zustimmung. Sie werden nur unter fol-

genden Bedingungen angenommen. Jeder Rücksendung muss eine schriftliche Beschreibung des Problems beiliegen. Die Ware muss frei Haus angeliefert werden.

Sonderanfertigungen / Sondertypen werden ausdrücklich nicht zurückgenommen, falls nicht andere schriftliche Vereinbarungen getroffen wurden. Angefallene Arbeits- und Materialkosten werden in jedem Fall berechnet.

Eine Stornierung wird nicht anerkannt, wenn die Ware bereits komplett hergestellt oder bereits versandt wurde.

Tritt der Käufer während der Produktion vom Vertrag zurück, behalten wir uns eine Entscheidung zur Berechnung der aufgewendeten Kosten vor. In jedem Fall werden erbrachte Arbeitsleistungen sowie Materialkosten berechnet.

4. Mängel, Gewährleistung, Haftung und Schadenersatz

Der Käufer hat Beanstandungen wegen unvollständiger oder unrichtiger Lieferung oder Rügen wegen offensichtlicher Mängel spätestens 14 Tage nach Erhalt der Ware schriftlich bei uns anzuzeigen. Kaufleute haben Beanstandungen und Rügen wegen erkennbarer Mängel unverzüglich schriftlich anzuzeigen. Unterlässt der Käufer die fristgerechte Mängelanzeige oder wird die Ware von ihm verbraucht oder veräußert, so gilt dies als vorbehaltlose Genehmigung.

Gewährleistungsansprüche gegen uns sind nach unserer Wahl auf Nachbesserung durch uns oder Ersatzlieferung begrenzt. Ist keine Nachbesserung oder Ersatzlieferung möglich, ist der Kunde berechtigt, Herabsetzung des Kaufpreises oder nach seiner Wahl die Rückgängigmachung des Vertrages zu verlangen.

Bei Verletzung vertraglicher Pflichten haben wir nur Vorsatz und grobe Fahrlässigkeit zu vertreten.

Die Gewährleistungsfrist beträgt für unsere Geräte 12 Monate ab Lieferung. Für Montage- und Wartungsprodukte und Dichtungen beträgt die Gewährleistungsfrist 6 Monate ab Lieferung.

Sie verlängert sich im Fall einer Nachbesserung und Ersatzlieferung

nur um die Zeit, in welcher der Liefergegenstand nicht benutzbar war. Ausgenommen von der Gewährleistung sind natürliche Abnutzungen an Verschleißteilen. Die Gewährleistung entfällt, wenn der Liefergegenstand nicht zum bestimmungsgemäßen Einsatz verwendet wird oder keine WEH-Ersatzteile verwendet wurden, bei unsachgemäßer Wartung oder wenn die Ware in sonst einer Weise unsachgemäß behandelt bzw. eingesetzt wurde. Alle von dieser Bestimmung abweichenden Gewährleistungen, sei es mündlich durch einen unserer Angestellten oder Vertreter sind ausdrücklich ausgeschlossen.

Wir können die Erfüllung von Gewährleistungsansprüchen ablehnen, wenn uns Mängel nicht rechtzeitig – unverzüglich – angezeigt werden. Dasselbe gilt, wenn uns nicht die erforderliche Zeit und Gelegenheit zur Vornahme aller uns nach billigem Ermessen notwendig erscheinenden Maßnahmen gegeben wird. Nur in dringenden Fällen der Gefährdung der Betriebssicherheit des Käufers und zur Abwehr unverhältnismäßig großer Schäden, wobei wir sofort zu verständigen sind oder wenn wir mit der Beseitigung des Mangels in Verzug sind und dieser auch nach einer uns gestellten angemessenen Nachfrist fortbesteht, hat der Käufer das Recht den Mangel selbst oder durch Dritte beseitigen zu lassen und von uns Ersatz der im Rahmen der Gewährleistung zu tragende Kosten zu verlangen, vom Vertrag zurückzutreten oder diesen rückgängig zu machen.

Unsere Haftung entfällt, wenn die gelieferte Ware bearbeitet oder verändert wird, es sei denn der Kunde weist nach, dass die Bearbeitung oder Veränderung nicht ursächlich war.

Gegenüber Kaufleuten haften wir nicht für mittelbare Folgeschäden und für jedes Schadensereignis höchstens bis zum Warenwert.

5. Zahlungsbedingungen

Sofern nicht anders vereinbart sind unsere Rechnungsbeträge am 30. Tag nach Rechnungsdatum ohne Abzug fällig, rein netto.

Bei Aufträgen über EURO 25.000,-- gelten folgende Bedingungen. 1/3 des gesamten Rechnungsbetrags ist zahlbar bei Bestellung, 1/3 ist zahlbar bei Lieferbereitschaft und 1/3 ist fällig am 30. Tag nach Lieferung.

Bei Zahlungsverzug, der bei Kaufleuten ohne Mahnung eintritt, sind wir berechtigt, Verzugszinsen in Höhe von banküblichen Sätzen zu verlangen. Die Geltendmachung eines nachweislich darüber hinausgehenden Verzugsschadens wird nicht ausgeschlossen. Alle gewährten Rabatte, Skonti und sonstigen Vergütungen werden hinfällig.

Ferner sind wir bei Zahlungsverzug, Scheck- oder Wechselprotest berechtigt, weitere Lieferungen abzulehnen oder nur gegen Vorauskasse auszuführen.

6. Aufrechnung und Zurückbehaltung

Der Käufer ist nur zur Aufrechnung wegen unbestrittener oder rechtskräftig festgestellter Gegenforderungen berechtigt. Ein Zurückbehaltungsrecht steht dem Käufer nur wegen Ansprüchen aus demselben Vertragsverhältnis zu.

7. Verpackung

Die Verpackung wird zum Selbstkostenpreis berechnet und nicht zurückgenommen.

8. Eigentumsvorbehalt, Verfügnungsrecht

Wir behalten uns das Eigentum an sämtlichen von uns gelieferten Waren bis zur restlosen Bezahlung vor, hierbei gelten alle Lieferungen als ein zusammenhängendes Liefergeschäft. Bei laufender Rechnung gilt das vorbehaltene Eigentum zur Sicherung unserer Saldoforderung.

Der Vorbestandskäufer darf unsere Vorbestandsware nur im ordnungsgemäßen Geschäftsverkehr veräußern oder verarbeiten und nur, solange er nicht in Zahlungsverzug ist. Wird unsere Ware mit anderen Gegenständen vermischt oder verbunden, oder entsteht durch Bearbeitung mit anderen Stoffen eine neue Sache, so wird

bereits jetzt vereinbart, dass das Eigentum an dem vermischten Bestand oder der einheitlichen anteilig im Verhältnis des Rechnungswerts unserer Vorbestandsware zum Rechnungswert der übrigen darin enthaltenen oder verarbeiteten Waren oder Bestandteile auf uns übergeht und dass diese Güter für uns unentgeltlich mit der Sorgfalt eines ordentlichen Kaufmanns verwahrt werden. Die neue Sache gilt als Vorbestandsware im Sinne dieser Bedingungen.

Veräußert der Käufer die von uns gelieferte Ware bestimmungsgemäß weiter, tritt er hiermit schon jetzt, die ihm aus der Veräußerung entstehenden Forderungen gegen seine Abnehmer mit allen Nebenrechten bis zur völligen Tilgung aller unserer Forderungen an uns ab. Auf unser Verlangen ist der Käufer verpflichtet, die Abtretung den Drittkäufern bekanntzugeben und uns die zur Geltendmachung unserer Rechte erforderlichen Auskünfte zu geben und Unterlagen auszuhandigen.

Von einer Pfändung der unter Eigentumsvorbehalt stehenden Ware oder jeder anderen Beeinträchtigung unserer Rechte durch Dritte hat uns der Käufer unverzüglich zu benachrichtigen. Die Kosten einer Abwehr der Eingriffe Dritter gehen zu Lasten des Käufers.

Das vorbehaltene Eigentum und die vereinbarte Vorausabtretung der Kaufpreisforderung gelten bis zur Befriedigung unserer sämtlichen Forderungen aus der Geschäftsverbindung mit dem Käufer.

Wir werden die von uns gehaltenen Sicherungen insoweit freigeben, als ihr Wert die zu sichernden Forderungen um 20% übersteigt.

Kommt der Besteller mit der Bezahlung einer fälligen Forderung mehr als 60 Tage in Verzug oder wird über sein Vermögen ein gerichtliches Vergleichs- oder Konkursverfahren beantragt, sind wir berechtigt, die von uns gelieferte Ware und unter Eigentumsvorbehalt stehende Ware aus den Räumen des Käufers auch freihändig an uns zu nehmen und selbst unter Wahrung der Interessen des Käufers zu verwerten. Die Rücknahme gilt nicht als Rücktritt.

9. Schadenersatz wegen Nicht-

erfüllung

Im Falle der Nichterfüllung des Vertrages sind wir berechtigt, 20% der Auftragssumme als Schadenersatz ohne weiteren Nachweis zu verlangen. Geltendmachung eines nachweislich höheren Schadens bleibt vorbehalten; dem Käufer bleibt vorbehalten nachzuweisen, dass kein oder ein geringerer Schaden entstanden ist.

10. Produkteinsatzbereich

Unsere Angaben über den Einsatzbereich unserer Produkte, Einbauvorschläge und Werkstoffempfehlungen beruhen auf langjährigen Erfahrungen in der Herstellung und Anwendung von unseren Produkten. Trotzdem können unbekannte Parameter und Bedingungen beim praktischen Einsatz allgemeingültige Aussagen erheblich einschränken, so dass es praktische Versuche beim Anwender selbst bedarf. Wegen der Vielzahl der Verwendungsmöglichkeiten unserer Produkte können wir deshalb keine Gewährleistung für die Richtigkeit unserer Empfehlungen im Einzelfall übernehmen. Die für den jeweiligen Einzelfall angefertigten Konstruktionszeichnungen und Einbauvorschläge sind unser geistiges Eigentum und sind Dritten gegenüber geheimzuhalten.

11. Erfüllungsort und Gerichtsstand

Erfüllungsort für die Lieferung ist der Sitz unserer Lieferstelle. Gerichtsstand ist Illertissen. Wir sind jedoch auch berechtigt, am Sitz des Käufers Klage zu erheben.

12. Rechtswirksamkeit

Wenn eine Bestimmung oder ein Teil einer Bestimmung dieser Geschäftsbedingungen unwirksam oder nichtig ist oder wird, so soll das gelten, was im Rahmen des rechtlich Zulässigen der unwirksamen oder ungültigen Bestimmung wirtschaftlich am nächsten kommt. Die Rechtswirksamkeit der übrigen Bestimmungen wird hierdurch nicht berührt.

Fax reply

NGV

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