

# Original operating instructions SEITZ TopValve CNG

Types 3030, 3031, 3032, 3040, 3041

## Translation of Original Operating instructions

### Table of Contents

- 1 Safety Instructions
- 2 Intended Use
- 3 Warranty
- 4 Technical Data
- 5 Solenoids
- 6 Sectional view
- 7 Functional Description
- 8 Installation and Commissioning/Operation
- 9 Maintenance
  - 9.1 General
  - 9.2 Removal
  - 9.3 Servicing Tasks
  - 9.4 Installation
  - 9.5 Function Check/Test
- 10 Procedure for Malfunctions
- 11 Decommissioning
- 12 Disposal
- 13 Tables
- 14 Conformity Declaration
- 15 Addresses

### Explanation of symbols



Attention



Read instruction



Danger to life



Danger of explosion



Hot or cold surfaces



Safety goggles and ear protection



Disposal

We thank you very much for purchasing this product and, thus, the vested confidence.



In order to ensure safe and trouble-free function, these operating instructions must be strictly adhered to. The user must ensure that the specified conditions for use and performance data of the device are adhered to, as well as the country-specific statutory regulations. The manufacturer accepts no liability for this. These operating instructions are a constituent part of the product and are to be accordingly integrated into the system operating instructions or machine description. We reserve the right to make modifications for the means of further technical development.

## 1 Safety Instructions

### Authorized Persons

The tasks described here must only be carried out by authorized and trained persons. Authorized persons are those who possess sufficient knowledge about gases in conjunction with high pressure and who can also verify skills for installation. The facility operator is responsible for naming, instructing and regularly checking the person deemed to be authorised.

### General Hazard Instructions



**ATTENTION DANGER TO LIFE!**

Gases compressed to high pressure possess a large energy potential and, thus, great dangers.

**INCORRECTLY ASSEMBLED COMPONENTS CAN EXPLOSIVELY DISTRIBUTE THEMSELVES AND FATALLY INJURE HUMANS.**

Leakage of combustible gases can result in explosions or asphyxiation.



Icing is an indication of escaping gas. Do not touch frosted system components, danger of frostbite. Dissipate pressure and rectify leakage.



Before starting tasks on high-pressure valves, make sure that the gas system is depressurized and secured against unauthorized charging. The subsequent recommissioning / pressurizing must be carried out by authorized persons with specialist knowledge. Depletion of the gas system must not be carried out by releasing bolts or connections, but only through the draining facilities provided.



Strictly adhere to the specified tightening torques, refer to Table 1. Non-adherence to the tightening torques can result in leakage, damage and failure of pressurized components.



If damaged components are detected, the valve must be depressurized and the damaged components replaced. The valve must only be pressurized when fully installed.



After the system has been ventilated or depressurized, flushing using inert gas must be carried out.

Pressurization must be carried out slowly. Pressurizing quickly can result in ignition of the remaining gas-air mixture and destruction of the system components.

## 2 Intended Use

These operating instructions are applicable to Eugen Seitz high-pressure solenoid valves of the product family TopValve, for use at filling stations for Compressed Natural Gas (CNG).



Attention: Observe the approved pressure and temperature range on the name plate. Media: Natural gas in accordance with DIN 51624 and inert gases that is not aggressive to housing and sealing materials. If in doubt, contact the manufacturer.

Using media that is not approved can result in failure, destruction or bursting of the valve.

Contamination in the pipelines can impair the function of the valve. In order to ensure the longest possible service life, we recommend installing suitable filters.

### 3 Warranty

The contractually agreed warranty conditions apply. In the absence of contractual warranty conditions, the legal notice with the following consideration is applicable. Trouble-free operation of the high-pressure solenoid valves is only ensured when the following points are adhered to:



The valve is only designed for operation using CNG and inert gas. It must not be pressurized using liquids.

It should be installed within an enclosed housing or in buildings, direct exposure to the weather must be avoided.

Observe the direction of flow.

The valve has seals that are subject to wear during operation. In order to ensure trouble-free operation, a regular function and leak check of the valves must be carried out and, as required, serviced using the Eugen Seitz AG original repair kit or replaced.

### 4 Technical Data

Pressure range: 1 – 35 MPa (10 – 350 bar)

Test pressure: 52.5 MPa (525 bar)

Temperature range: -20...+60°C

Nominal diameter: DN6, DN12, DN18

Application: Natural gas in accordance with DIN 51624

Quality of gas: In accordance with ISO 8573-1

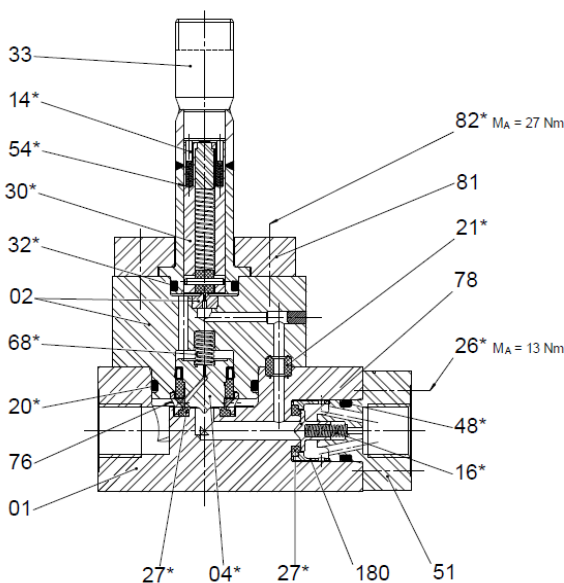
Leakage: < 0.12 NI/h

### 5 Solenoids

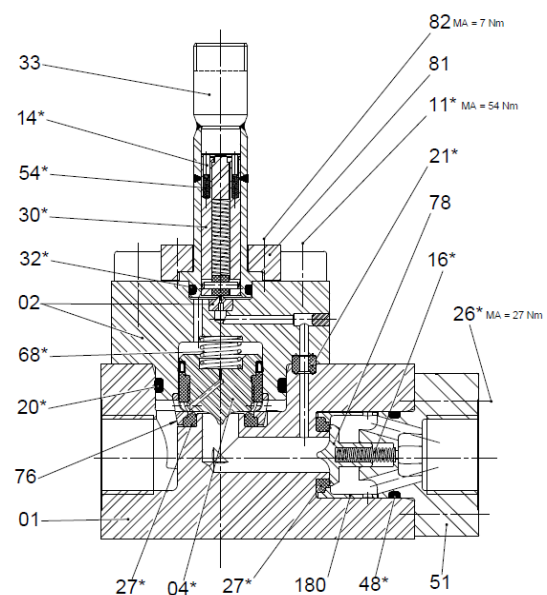
The reliable function of the valve can only be ensured by a recommended solenoid from the company Eugen Seitz AG and under consideration of the enclosed "Operating instructions for solenoids".

### 6 Sectional view

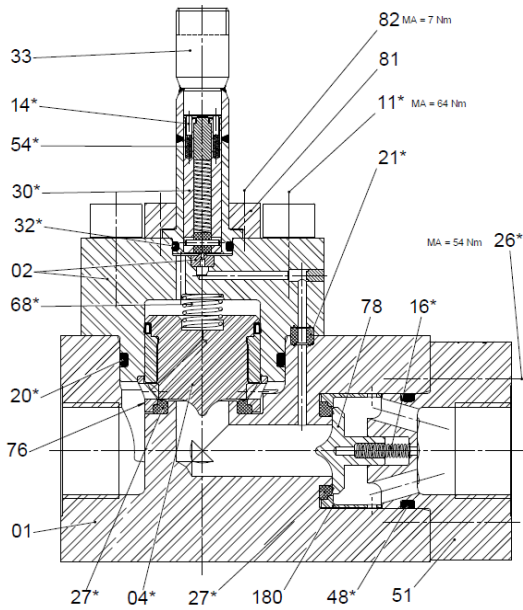
#### Type 3030



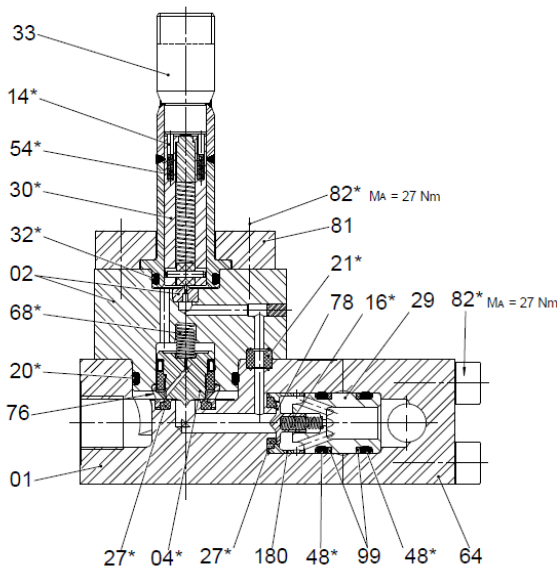
#### Type 3031



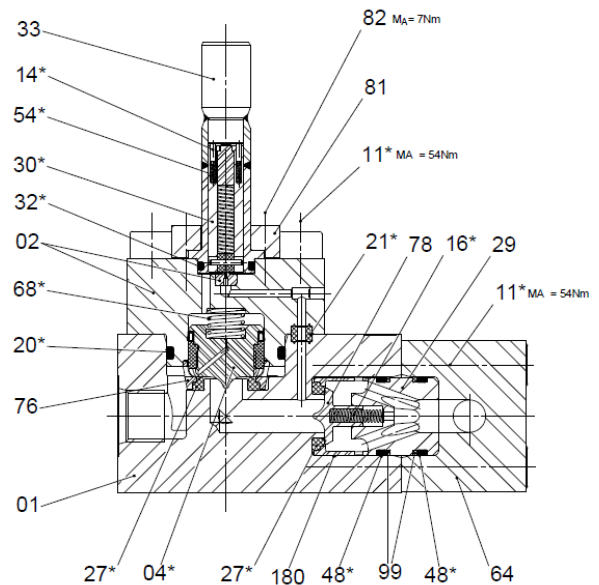
## Type 3032



## Type 3040



## Type 3041



Positions indicated \* are replaceable parts included in the original repair kit.

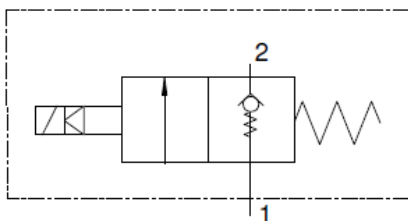
## 7 Functional Description

The valve is an inherent medium - pilot operated 2/2-way solenoid valve. It is closed under spring pressure when deenergized, but opens with pressure reversal, as a non-return valve. If flow should be prevented with pressure reversal, an additional non-return valve must be provided.

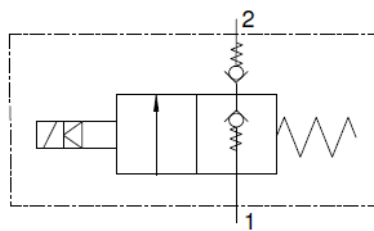
By a rapid increase in pressure at the valve inlet, the deenergized valve momentarily opens until pressure equalization occurs in the valve and the piston again closes. This characteristic is system-dependent and normal.

## Type 3030, 3031, 3032

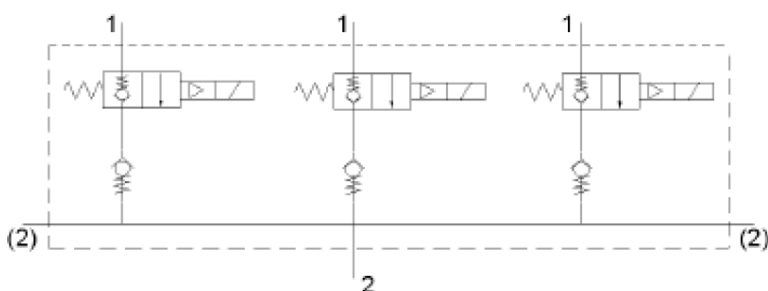
without NRV



with NRV



## Type 3040, 3041



## 8 Installation and Commissioning/Operation

Purge all lines using inert gas before the initial commissioning and carrying out servicing tasks. Absolute cleanliness is required. Particles of dirt can cause malfunctions. Contamination  $\geq 40\mu\text{m}$  must be filtered out. (Particle in accordance with ISO8573.1, Qual. 5/ pressure dewpoint in accordance with ISO8573.1, Qual. 3/ oil content ISO 8573.1, Qual. 3). Installation position is arbitrary. It is recommended to install with the solenoid upwards. Observe the direction of flow. The valve is delivered checked and ready to install. It must be adequately attached in the system, subsequently, the gas and electrical connections must be connected.



The specified tightening torques must be adhered to when tightening all fittings, refer to Table 1.

Subsequently, check the leak tightness of the connections by carrying out a test for external leakage at the rated pressure and with the valve open.



Wear ear protection and safety goggles!



If a leakage test is carried out at a rated pressure of 1.5, it is imperative to keep the valve in the open position, in order to prevent damage to the piston. For this, the solenoid must be energized.



The leak test must only be carried out using specified agents for this purpose in accordance with Table 2, or an equivalent agent. Other foaming agents can result in corrosion and material embrittlement and cause a hazard through failure, for example because of the chlorine content.

If other pressure devices be connected to the valves described in these operating instructions, the respective applicable operating instructions of the other pressure devices must also be taken into consideration.

## 9 Maintenance

### 9.1 General

Before beginning tasks described here, the following chapters must be read and taken into consideration:

- Safety Instructions
- Warranty

- Function Description
- Procedure for Malfunctions

For each type of valve, an original repair kit is available from Eugen Seitz AG. An overview can be found on our Internet page: [www.seitz.ch/de/afs/cng/maintenance.php](http://www.seitz.ch/de/afs/cng/maintenance.php)

The safety and leak tightness can only be ensured using original parts from Eugen Seitz AG.



Repairs on individual parts must not be carried out. Worn or defective parts must be replaced by new original parts from Eugen Seitz AG.

If in doubt, send the valve to our repair service, or inform our service department.

## 9.2 Removal

1. Switch off the power and dissipate the pressure.
2. Release the SW22 nut, remove the serrated washer and solenoid.
3. Release the bolts Pos. 82, flange Pos. 81 and remove the guide tube Pos. 33.
4. Release the bolts Pos. 11 (only Types 3031, 3032, 3041). Remove the cover Pos. 02.
5. Release bolts Pos. 26 and remove nozzle flange Pos. 51.

For models without a non-return valve, Step 5 not applicable.

## 9.3 Servicing Tasks

Use a neutral cleaning agent and not an abrasive agent to clean all components. Thereby, pay attention to soiling in the gas system (oil, water, particles) and rectify cause. Check the valve seat in the housing for damage.

Install the new components from the original repair kit. Use grease and lightly lubricate the seals and bearing surfaces. Recommended grease: SIL-JET-Spray.

## 9.4 Installation

The following is applicable in general: All tightening torques for bolts and pipe fittings at the inlet and outlet, in accordance with Table 1: Adhere to "Tightening torques".

1. Install all O-Ring seals (use an approved grease to lightly lubricate, refer to Table 3).
2. Install the seal Pos. 21 in the housing Pos. 01.
3. Insert the piston Pos. 04, together with the spring Pos. 68, in the cover, put the support bush Pos. 76, together with the seal Pos. 27 in position.
4. Hand tighten the bolts Pos. 11 diagonally, subsequently, use a torque wrench and tighten diagonally (only Types 3031, 3032, 3041).
5. Put the pin Pos. 14, together with the spring Pos. 54, in position in the anchor cpl. Pos. 30 and insert into the guide tube Pos. 33. Install, together with the flange Pos. 81, in the cover Pos. 02.
6. Hand tighten the bolts Pos. 82 diagonally, subsequently, use a torque wrench and tighten diagonally.
7. Put the valve in position, rotated 90° to the left. Install the seal Pos. 27 in the support bush Pos. 180 and insert together in the housing Pos. 01.
8. Insert the piston Pos. 78, together with the spring Pos. 16 centric in the housing Pos. 01.
9. Install the nozzle flange Pos. 51 in the housing Pos. 01 (thereby, the spring Pos. 16 and piston Pos. 78 are centered in the nozzle flange Pos. 51).
10. Hand tighten the bolts Pos. 26 diagonally, subsequently, use a torque wrench and tighten diagonally.
11. Install the solenoid, serrated washer and hand tighten the nut SW22.
12. Install the screw connections G (flat sealing) or SAE (O-Ring sealed on chamfers at the input) in accordance with Table 1 "Tightening torques"!

For models without a non-return valve, Steps 7 to 10 not applicable.

## 9.5 Function Check/Test

After opening the valve for maintenance, proceed as follows:

1. Flush using inert gas.



Attention: Pressurization must be carried out slowly. Pressurizing quickly can result in ignition of the remaining

gas-air mixture and destruction of the system components.

2. Increase the pressure at the valve inlet to 20 bar.
3. Electrically energize 2 to 5 times. The valve must audibly switch.
4. Increase the pressure to a min. 120 bar. (Pressure differential: valve inlet to valve outlet min. 120 bar).
5. Electrically energize 2 to 5 times. The valve must audibly switch.
6. Leave pressure at min. 120 bar and check for leakage externally. Using an approved leak detector spray (refer to Table 2) put foam at all joints, screw connections and closed bores of the complete valve. There must be no visible sign of bubbles.

## 10 Procedure for Malfunctions



Attention: Wear ear protection and safety goggles if components of the system are pressurized!



Only switch the pressurized valve when there is no hazardous conditions!

- Check the connections, electrical voltage and function of the solenoid
- Check to make sure that the valve pressurizes
- If the problems remain, dissipate the pressure and examine the valve in accordance with the instructions. Thereby, pay attention to soiling in the gas system (oil, water, particles) and rectify cause.
- If installed, check the filter for soiling
- If there is icing on the valve, slowly warm until at room temperature. Avoid abrupt temperature shocks.

If you cannot rectify the malfunction, return the valve to Eugen Seitz for inspection.

## 11 Decommissioning

1. Switch off the power and dissipate the pressure.
2. Remove the valve.

## 12 Disposal



Observe the respective country-specific environmental legislations. As far as possible, the individual components must be fed to the recycling process.

## 13 Tables

**Table 1: Tightening torques**

Type	Nominal dia.	Screw connection					
Typ	Nennweite	Pos. 11	Pos. 26	Pos. 82	Anschlussverschraubung		
3030	DN 6	-	M6 $M_A = 13 \pm 1.5 \text{ Nm}$	M8 $M_A = 27 \pm 1.5 \text{ Nm}$	G 3/8 $M_A = 37.5 \pm 2.5 \text{ Nm}$	SAE 6 $M_A = 37.5 \pm 2.5 \text{ Nm}$	
3031	DN 12	M10 $M_A = 54 \pm 5 \text{ Nm}$	M8 $M_A = 27 \pm 1.5 \text{ Nm}$	M5 $M_A = 7 \pm 1.5 \text{ Nm}$	G 3/4 $M_A = 52.5 \pm 2.5 \text{ Nm}$	SAE 8 $M_A = 52.5 \pm 2.5 \text{ Nm}$	
3032	DN 18	M12 $M_A = 64 \pm 5 \text{ Nm}$	M10 $M_A = 54 \pm 5 \text{ Nm}$	M5 $M_A = 7 \pm 1.5 \text{ Nm}$	G 1 $M_A = 82.5 \pm 2.5 \text{ Nm}$	SAE 12 $M_A = 82.5 \pm 2.5 \text{ Nm}$	
3040	DN 6	-	-	M8 $M_A = 27 \pm 1.5 \text{ Nm}$	G 3/8 $M_A = 37.5 \pm 2.5 \text{ Nm}$	SAE 6 $M_A = 37.5 \pm 2.5 \text{ Nm}$	
3041	DN 12	M10 $M_A = 54 \pm 5 \text{ Nm}$	-	M5 $M_A = 7 \pm 1.5 \text{ Nm}$	G 3/4 $M_A = 52.5 \pm 2.5 \text{ Nm}$	SAE 8 $M_A = 52.5 \pm 2.5 \text{ Nm}$	

**Table 2: Approved leak detection agent**

Bezeichnung
Controlit-Spray
Metaflux 70-14

Bezeichnung = Designation

Using other foaming agents can result in corrosion and material embrittlement and cause a hazard through failure, for example because of the chlorine content.

**Table 3: Approved lubricants**

<b>Bezeichnung</b>
SIL-JET-Spray
Rhodorsil

Using other lubricants can result in corrosion and material embrittlement and cause a hazard through failure, for example because of the chlorine content.

## 14 Conformity Declaration

EC Conformity Declaration in accordance with Appendix VII of the Directive 97/23/EU.

## 15 Addresses

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