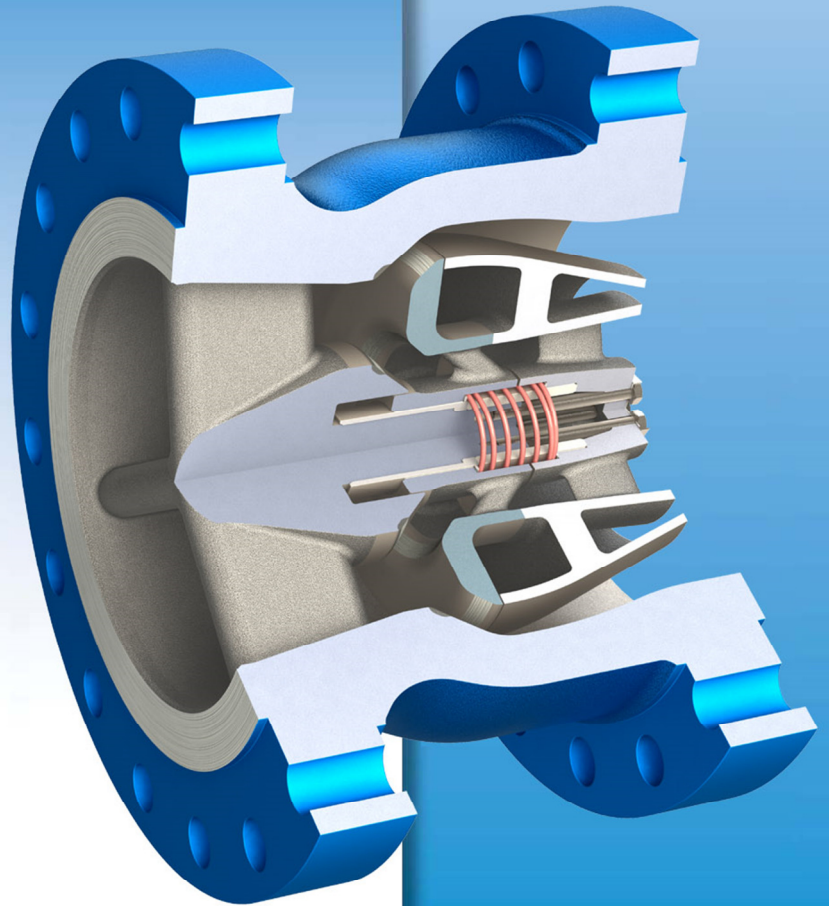
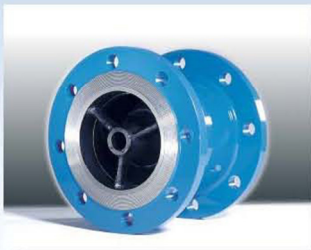
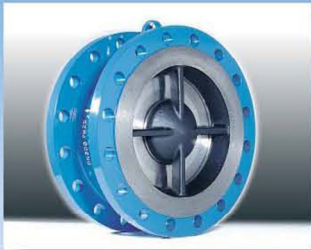


# NoREVA

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Non-Return-Valves



## Installation and Operating Manual

# Installation and operating manual for all Noreva Non-Return-Valves

## Table of Contents

### 1. Description of product and function

- 1.1 The NOREVA non-return valve range
- 1.2 Correct use
- 1.3 Transport and storage
- 1.4 Installation in the pipeline - Assembly

### 2. Servicing and maintenance

- 2.1 Servicing and maintenance
- 2.2 Spare parts
- 2.3 Replacement of spare parts
- 2.4 Incident during operation / Corrective action

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## **1. Description of product and function**

Non-return valves are used wherever reverse flow of the conveyed fluid is to be prevented. They are suitable for all liquid and gaseous media and are heat-resistant thanks to the exclusive use of metal materials and non-corroding internal components.

NOREVA non-return valves are produced in conformity to Pressure Equipment Directive (PED) and are tested at the manufacturer's works in accordance with DIN EN 12266 for mechanical strength and tightness.

ATEX Directive does not apply to NOREVA non-return valves.

Typical applications include, for example, oil pipelines, iron and steel plants, chemicals plants, water recovery, pumping stations, water distribution systems, power generation plants, gas compressor stations, seawater desalination plants, etc.

These valves provide smooth and shock-free closure within fractions of a second thanks to their short closure paths and low moving masses.

### **CAUTION!!!**

**Hot fluids present a danger of burns,  
customers must thermally insulate valves!**



### **1.1 The NOREVA Non-return valve range**

Our range of products can be found in our catalogue and on our Internet site [www.noreva.de](http://www.noreva.de).

### **1.2 Correct use**

Thanks to their design and construction, NOREVA non-return valves are used in the most diverse range of industries.

NOREVA-non-return valves are designed for following application:

Ambient temperature: -50 °C to +50 °C

Admissible working temperature: -196 °C to +500 °C

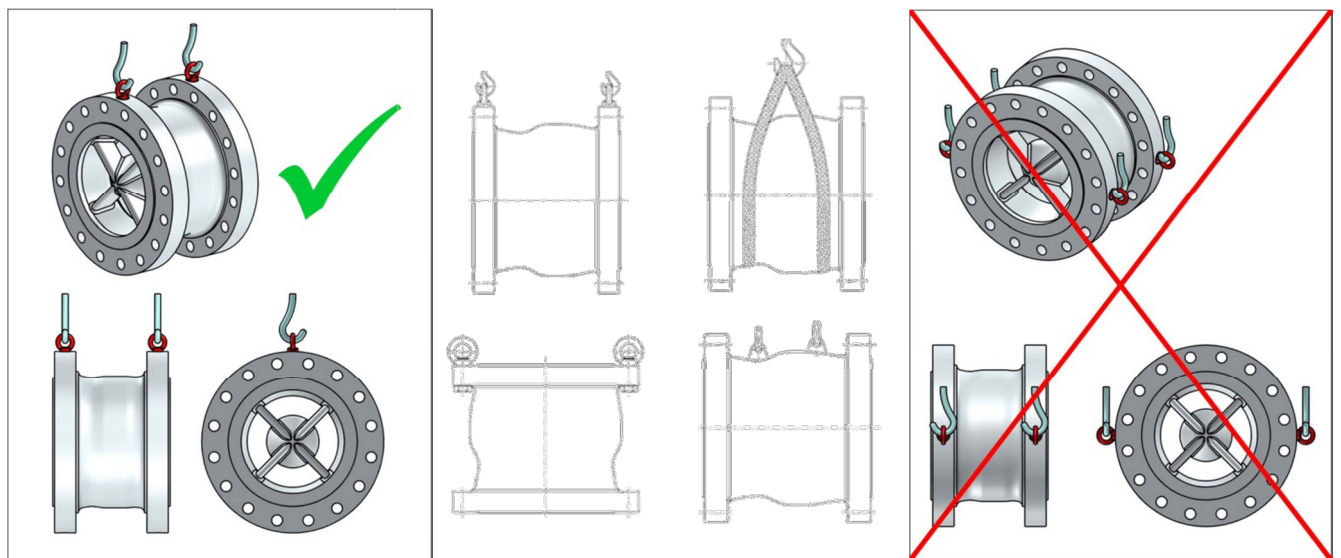
The operating data can be taken from the name plate for specific application.

- Our non-return valves are produced specifically in accordance with the customer's specifications and for his application, and may be used only for this purpose.
- Use for other operating data and/or for installation locations or services is not permissible without the manufacturer's agreement.
- The operator/user must implement provisions to eliminate valve flutter during operation.
- The conveyed fluid or gaseous media must be at a temperature not less than 20% remote from its auto ignition temperature.

### 1.3 Transport and storage

Valves must not be suspended using lifting tackle (S-hooks) inserted into the flange borings, nor may they be rolled on the flanges, since both methods will damage the corrosion protection.

A non-return valve with no suspension lugs must be handled and transported using belts slung around both flange necks and attached to the lifting equipment. The valves can also be equipped with threaded holes (for ring-bolts) and/or suspension lugs for the purpose of handling and transportation.



**Figure 1**

The non-return valve must be secured for transportation on a wooden pallet using wood packing and fixing straps.

The stability of the non-return valves during transportation and storage must be ensured by positioning the valves on their flanges.

The direction-of-flow arrow must always point upward.

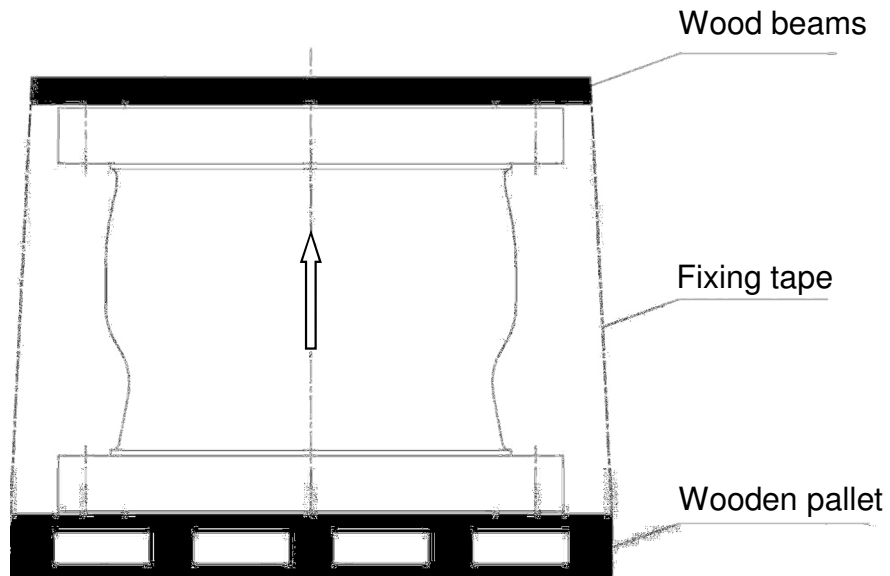


Figure 2

### **1.4 Installation in the pipeline - Assembly**

Remove the packaging materials. The pipeline must be examined for fouling and foreign bodies prior to installation and cleaned if necessary.

**Danger of injury!!**



**The applicable safety regulations in accordance with national regulations must be adhered to.  
The necessary personal safety equipment/ clothing must be used.**

**Attention!**  
**Note the direction of flow as indicated by the cast-on arrow on the housing and the arrow on the name plate!**

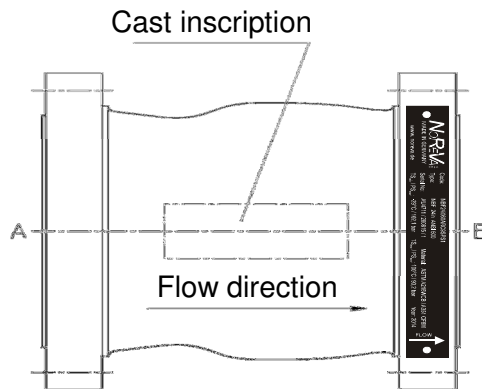


Figure 3



Figure 4

The counter flanges on the pipeline must be plan-parallel and concentric.

The connecting bolts must be tightened uniformly (avoiding distortion) and in crosswise alternating order. The pipeline must under no circumstances be pulled toward the valve to close the joint.

There should be sufficient space between the pipe flanges during installation of the valve, in order to avoid damage to the flanges and in order that gaskets can be installed.

**Installation immediately downstream bends, T-joints or dampers and/or control valves should be avoided wherever possible.**

**Any unusual installation situations should be discussed and agreed with NOREVA.**

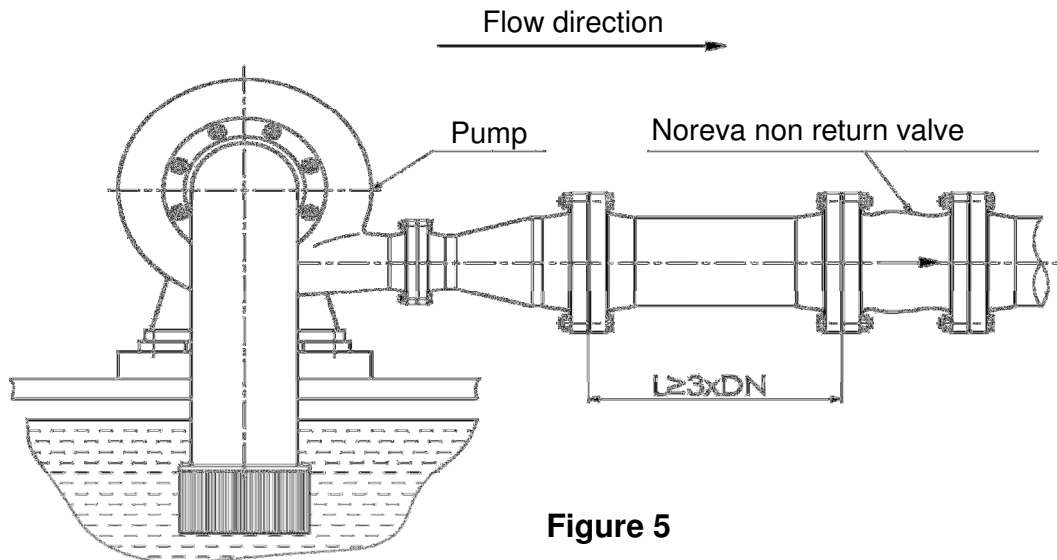


Figure 5

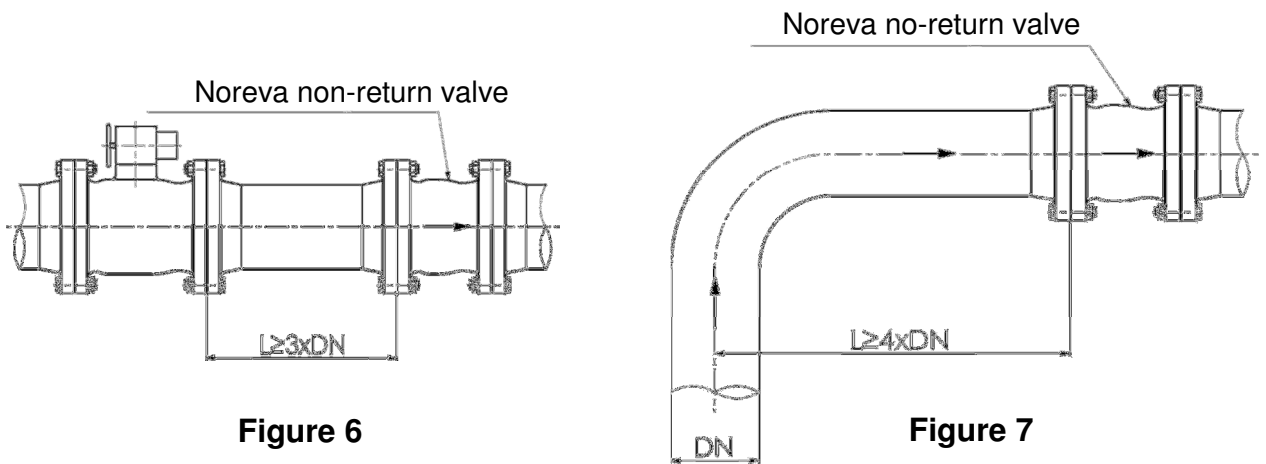


Figure 6

Figure 7

After mounting in the pipe the eye bolts have to be removed.  
For handling of the valve only the supplied eye bolts must be used.

## 2. Servicing and maintenance







Inspection and servicing/maintenance work may be performed only once the section of pipe in which the valve is installed has been isolated, depressurized and secured against reactivation.



Caution

### CAUTION

All pressure-conducting lines must be depressurized and secured against reactivation before starting any servicing / maintenance work. All joints and connections must be checked for tightness and firm seating when the servicing /maintenance work has been completed.

 <b>Danger</b>	<b><u>DANGER</u></b>	
	<p><b>In case of escape of hazardous liquids, substances, gases and fumes/vapors, shut the system down immediately, inform the responsible supervisor and perform the corresponding repair work.</b></p>	
	<p><b>Personal safety equipment and clothing in accordance with the regulations issued by the professional associations must be used.</b></p>	
	<p><b>There is a danger, depending on the medium conducted, of poisoning, corrosive burns, scalding, and also dangers arising from biological and microbiological substances and from fire and potential explosion.</b></p>	
		

## **2.1 Servicing and maintenance**

NOREVA non-return valves require no servicing or maintenance.

The following checks within the scope of the standard servicing and maintenance intervals for the overall system are nonetheless recommended:

- Check of external leakage
- Check for damage
- Check for fouling/freedom of movement
- Check of unusual noises

## **2.2 Spare parts**

The valve serial number should always be stated when ordering spare parts. This serial number can be found on the name plate (Figure 4) and on the valve flange.

## **2.3 Replacement of spare parts**

The valves must be removed from the pipeline after depressurization of the line in order to replace parts.

It is strongly recommended to perform every repair work on NOREVA non-return valves only by NOREVA or by persons trained and approved by NOREVA.

## **2.4 Incident during operation / Corrective action**

<b>Problem</b>	<b>Possible cause</b>	<b>Correction</b>
<b>Leakage at the valve seat</b>	Depositions/fouling on the seat	Clean valve seat and disk. Note Section 2.
<b>NRV incorrectly installed</b>	Pump delivering against closed non-return valve .	Install non-return valve in accordance with Section 1.4