



# ULTRA

**MAXIMUM SAFETY AGAINST  
GAS BACKFLOW – WITH  
MINIMUM PRESSURE LOSS**

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# ULTRA PERFORMANCE



**NEXT GENERATION ULTRA NON-RETURN VALVES:  
THE NEW STANDARD 100% WITT QUALITY –  
EVEN BETTER PERFORMANCE & EVEN BETTER VALUE**



## › **ULTRA-LOW: OPENING PRESSURE AND PRESSURE DROP**

- + ULTRA non-return valves from WITT have a new, flow-optimised and particularly leak-tight valve system and thus enable the lowest opening pressures, from 4 mbarg.
- + They achieve high flow rates and are ideal low operating pressures.
- + Low opening pressures mean minimum pressure drops. This enables high efficiency in plant and pipeline construction. The installation of these high-performance valves increases safety and operability. This is particularly crucial in low pressure applications, where every mbarg counts.

## › **ULTRA: EFFICIENCY FOR PROCESS OPTIMISATION AND MAXIMUM VALUE**

## › **ULTRA-COMPACT: SMALLER WITH THE SAME PERFORMANCE**

- + The trend in plant construction is towards more and more compactness, e.g. in burner design.
- + The ULTRA models with their innovative design are perfect for this. No other gas non-return valve offers such small dimensions with the same performance – and at the highest level of quality.
- + It is now possible to switch to smaller tube diameters – a significant cost factor!
- + The innovative ULTRA gas non-return valves from WITT help to design your system with the future in mind and thus achieve competitive advantage.

## › **ULTRA: THE BUILDING BLOCK FOR A SPACE-SAVING AND COST-OPTIMISED DESIGN**

## A MUST-HAVE FOR SAFETY

Non-return valves are indispensable for protecting plant, pipework and outlet points against dangerous reverse flow and unwanted gas mixtures. WITT offers high-quality, standard-compliant solutions for a wide range of applications, flow rates and nominal diameters, for almost all technical gases. WITT non-return valves thus provide reliable protection against dangerous gas backflow and unwanted gas mixtures.

## ULTRA – THE TECHNICAL REVOLUTION



With the new ULTRA model series, WITT is now setting new standards: flow-optimised, quiet and extremely compact, offering unrivalled low pressure drops due to their minimal opening pressures. Ideal for applications where low pressures are used, e.g. thermos-processing plants, biogas, fuel cells, natural gas pipelines etc. And the new modular system guarantees a solution for almost every application.



**FOR THE USER THIS MEANS COST SAVINGS ON MANY LEVELS – IMMEDIATE AND SUSTAINABLE**



### › **ULTRA QUIET: NO “CHATTERING”**

- + The elaborate new valve system reduces the usual “chattering” – and its annoying resonance.
- + This is a double advantage for the customer: The physical forces on the valve are also lower and thus cause less wear. This increases the longevity of the gas non-return valves and thus their value – and ensures the smooth functioning of the system.

### › **ULTRA: RELIABLE AND DURABLE, TO MINIMISE MAINTENANCE COSTS**

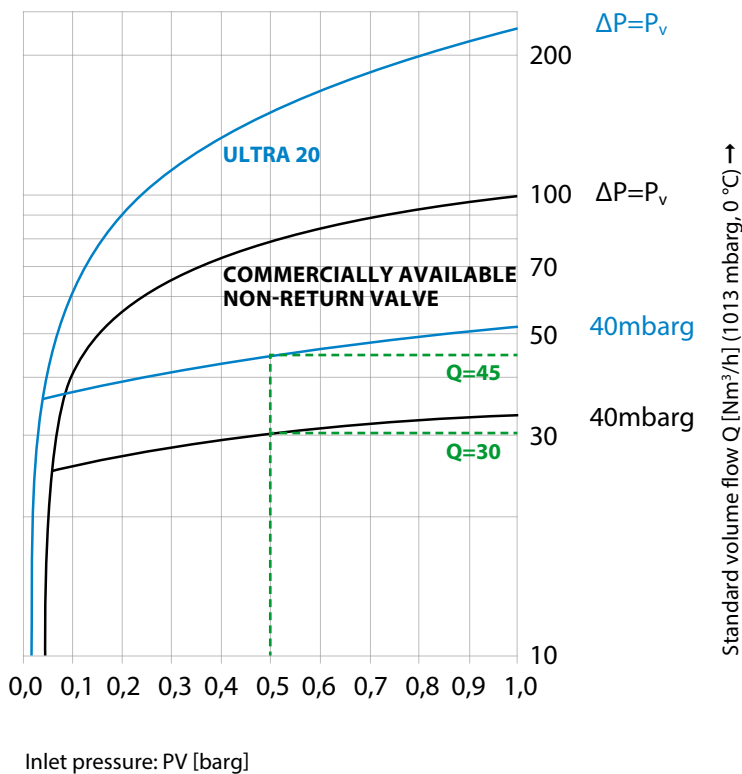
### › **ULTRA-SAFE: ALSO AGAINST FLASHBACK**

- + ULTRA non-return valves from WITT prevent reverse gas flow with absolute reliability. But they are also effective against flashback.
  - + When burning natural gas with air, they can also be used as a safety device against flashback (tested according to DIN EN ISO 5175-1 point 6.7), even when blending H<sub>2</sub> into natural gas/methane.
  - + A separate safety device is no longer necessary. This also means: less pressure loss, less space required, lower costs.
- ### › **ULTRA: ONE UNIT, DOUBLE BENEFIT, MAXIMUM SAFETY**

## > ULTRA ADVANTAGEOUS: THE NEW VALVE DESIGN PAYS OFF



### FLOW DIAGRAM FOR AIR LOWER PRESSURE LOSS = HIGHER FLOW RATE



### EXAMPLE

#### ULTRA 20

$P_v$ : 0,5 barg  
 $Q$ : 45  $\text{Nm}^3/\text{h}$

#### COMMERCIALLY AVAILABLE NON-RETURN VALVE

$P_v$ : 0,5 barg  
 $Q$ : 30  $\text{Nm}^3/\text{h}$

At an inlet pressure of 0.5 barg, the ULTRA 20 has a flow rate of approx. 45  $\text{Nm}^3/\text{h}$ , whereas a commercially available non-return valve only has a flow rate of approx. 30  $\text{Nm}^3/\text{h}$ .

Pressure losses in a gas-carrying pipe can easily lead to problems, because it has a very significant influence on the downstream processes. For this reason, engineers strive to select components with the minimum possible pressure drop. However, since the safety of people and materials has the highest priority when dealing with technical and flammable gases, components such as gas non-return valves are an absolute requirement. Nevertheless, there is a wide range in this area in terms of size, quality and performance, and the customer has a hard time finding the perfect product for his requirements. Conventional non-return valves usually fulfil their basic function - preventing gas backflow - but there are decisive differences in terms of opening pressure, pressure stability and reliability. As a specialist in gas technology, WITT has been a world leader in the technology of non-return valves for many decades. Thanks to continuous further development and its 100% testing regime, WITT non-return valves are the best available technology and quality. This allows them to offer extremely low opening pressures and thus very low pressure drops in the gas line. With the new ULTRA series, WITT has now achieved a further technological leap: a newly developed, flow-optimised valve design enables this high performance with significantly smaller dimensions, lower weight and less noise. In addition, it will arrest a flashback in accordance with DIN EN ISO 5175-1 and -2 when burning methane up to 2 barg with air. An additional flame arrester is no longer necessary, thereby saving space and money, and pressure. ULTRA fittings are thus perfectly suited to the machinery and plant engineering of the future: even more compact, higher performance and safer. And thus an essential feature of your Value Engineering.

## › TYPICAL AREAS OF APPLICATION AND ADVANTAGES: HOW ULTRA NON-RETURN VALVES ENSURE GREATER COST-EFFECTIVENESS



### › LOW-PRESSURE PIPELINES, E.G. NATURAL GAS

The gas lines in many industrial plants carry methane and typically operate at 25 mbarg. Here, every mbarg counts. This is why larger diameter pipes are used for higher flow rates for burner/heating systems. With an ULTRA gas non-return valve with ULTRA-low pressure drop and ULTRA-high flow but smaller connections, smaller pipe diameters can be used – a direct cost saving.

### › PERFECT WHEN EVERY MBARG COUNTS AND TO REDUCE COSTS IN THE LONG TERM

### › THERMOPROCESSING PLANTS

The ULTRA gas non-return valves are ideal for Thermos-processing plants (according to DIN EN 746-2). When burning methane on air up to a maximum of 2 barg, they will arrest a flashback, so an additional separate flashback arrestor safety device is no longer necessary. This also means: lower pressure drop, less space required, lower costs.

### › MAXIMUM STABILITY & ECONOMY, DOUBLE SAFETY



### › BIOGAS PLANTS

ULTRA gas non-return valves made of stainless steel with DVGW certificate for operation in biogas plants only allow the supplied air in your air conveying lines to pass in one direction and reliably prevent dangerous gasmixing. Perfect for desulphurisation by blowing in air/O<sub>2</sub>. The compact design allows for smaller compressors - which reduces operating costs.

### › CORROSION-RESISTANT, COST-REDUCING

### › HYDROGEN APPLICATIONS, E.G. FOR FUEL CELLS

Small, light and a guarantee for 100% safety: ULTRA gas non-return valves are perfect for sensitive areas with extreme demands on design and safety, such as fuel cells. The new design ensures even more fuel cell efficiency and the aluminium material even less weight - with extremely small installation dimensions.

### › MORE EFFICIENT, SMALLER AND LIGHTER THAN ANY OTHER





## ➤ **ULTRA-FLEXIBLE: A PERFECT FIT FOR EVERY APPLICATION**



The WITT ULTRA models have the following features:

- + Max operating pressures for towns gas, district gas (C), natural gas (M) and liquefied petroleum gas (P), hydrogen (H), oxygen (O), compressed air (D), non-flammable gases according to DIN EN ISO 5175-2:
  - 16 barg (ULTRA 10, 12, 20, 22)
  - 20 barg (ULTRA 30, 32, 40, 42)
- + Low opening pressures - from approx 4 mbarg
- + Suitable for use in industrial thermos-processing plants according to DIN EN 746-2
- + Will arrest a flashback per DIN EN ISO 5175-1 when burning methane in air, up to 2 barg
- + Elastomer seal for leak-tightness

**Standard model series (ULTRA 10, 20, 30, 40):** Perfected for a multitude of applications, optionally in brass or stainless steel.

**Special model series (ULTRA 12, 22, 32, 42)** also available as modular option: the customer can specify the features to suit a special application, in terms of specific materials and combinations such as valve housing, seals and O-rings, with or without filter, depending on the type of gas and operating conditions.

☐ selectable

☒ included

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### ➤ **STANDARD MODEL SERIES**

- ☐ Brass      ☐ Stainless Steel
- ☒ Dirt filter in the inlet made of stainless wire mesh (100 µm)
- ☒ Elastomer for seals O-ring: NBR, valve: CR

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### ➤ **SPECIAL MODEL SERIES THE MODULAR SYSTEM**

- ☐ Brass      ☐ Stainless Steel      ☐ Aluminium
- ☐ with filter      ☐ without filter
- Seals O-Ring/Valve:
  - ☐ NBR/CR      ☐ FPM/FKM      ☐ EPDM/FFKM

## > ULTRA GAS NON-RETURN VALVES FROM WITT: OUR MODELS



**Connection\***  
 G 1/2"  
 1/2" NPT

**Dimensions**  
 34 × 57,5 mm

**Opening pressure**  
 approx. 4 mbarg



**Connection\***  
 G 1/2"  
 G 3/4"  
 G 1"  
 1/2" NPT  
 3/4" NPT  
 1" NPT

**Dimensions**  
 52 × 67,5 mm

**Opening pressure**  
 approx. 4 mbarg



**Connection\***  
 G 1.1/2"  
 1.1/2" NPT

**Dimensions**  
 73,5 × 111 mm

**Opening pressure**  
 approx. 5 mbarg



**Connection\***  
 G 2.1/2"  
 2.1/2" NPT

**Dimensions**  
 114 × 146 mm

**Opening pressure**  
 approx. 5 mbarg

### ULTRA 10



### ULTRA 20



### ULTRA 30



### ULTRA 40



### ULTRA 12



### ULTRA 22



### ULTRA 32



### ULTRA 42



\*other connections upon request

## OUR PRODUCT RANGE

### GAS CONTROL EQUIPMENT

- Gas mixing systems
- Gas metering systems
- Gas analysers
- Leak detection systems
- Gas pressure vessels
- Engineering of customised systems

### GAS SAFETY EQUIPMENT

- Flashback arrestors
- Non-return valves / check valves
- Quick couplers
- Safety relief valves
- Stainless steel devices
- Gas filters
- Pressure regulators
- Outlet points
- Lance holders
- Ball valves
- Automatic hose reels
- Test equipment
- Accessories
- Customised safety equipment

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