

VENTIL[®]

Tune-In@Ventil

26th Augustus 2026

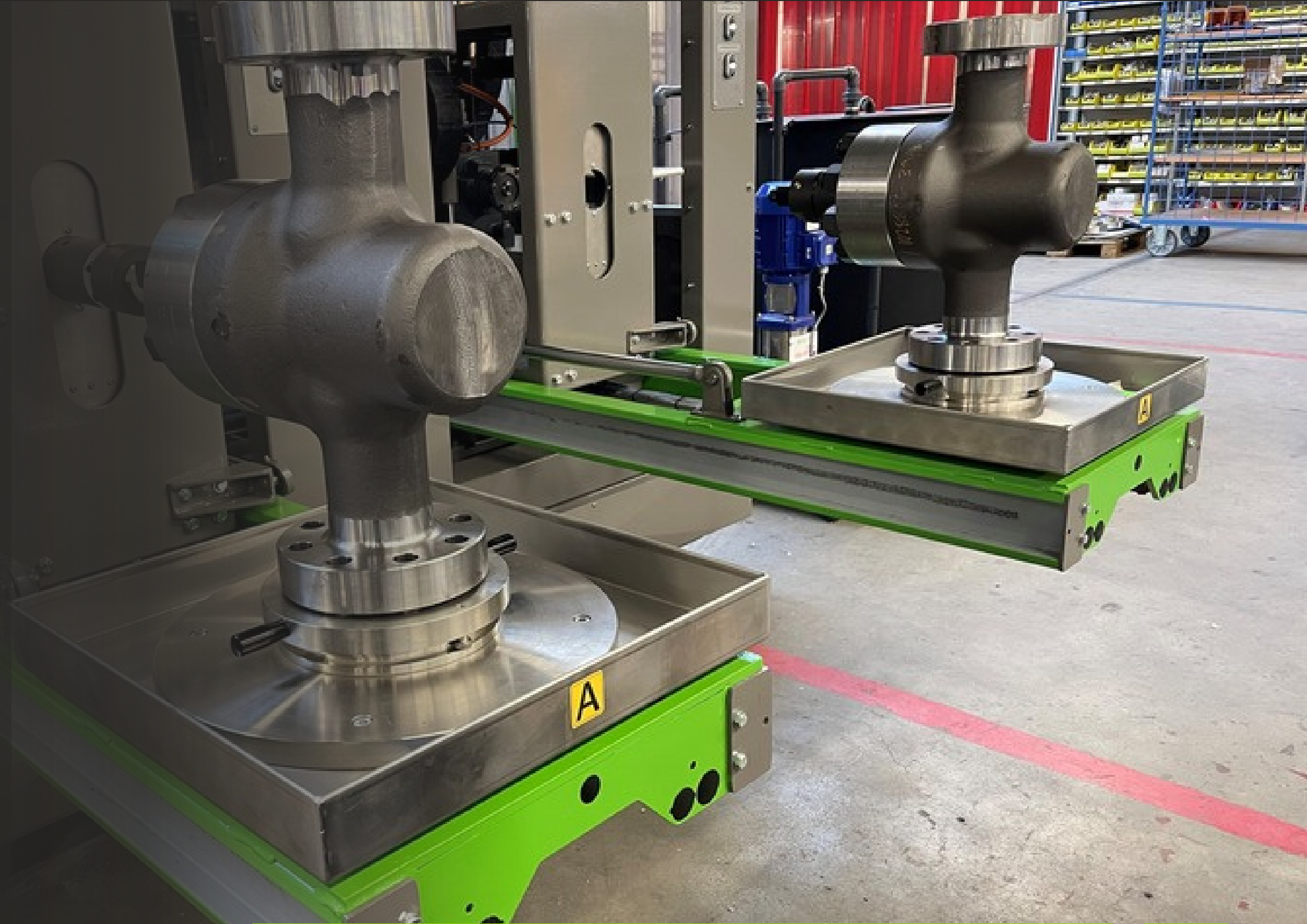
We're thrilled to have you join us for today's webinar

Our purpose today is to provide you with knowledge and insights to grow your business with **Ventil as your trusted business partner**

Subjects in this Webinar:

- Valve Bore Connection vs. Pressure Class
- Safety during pressure testing
- Showcase of the new website
- Mobile solutions campagin

Stay tuned – we are about to begin!



WELCOME

Ventil teams & Trusted partners

CONNECT ➤ SHARE ➤ DISCUSS

A platform to **connect**, share **technical knowledge**, and open the floor for **discussion**.

Vision

We take the burden off our customers by thinking along with them and offering a broad range of expertise, innovation, flexibility and services, ensuring solutions that meet their unique needs and help them achieve their goals efficiently and effectively — this is what we stand for!

Mission

As the leading manufacturer of test equipment, we're committed to enhancing the safety and integrity of industrial installations



Today's Topics

'Tune in, Learn more & Adapt'

VENTIL®

1



Valve Bore Connection vs. Pressure Class

Sizing the right test bench. In ASME/API applications the nominal valve size isn't the effective bore — right-sizing is a commercial decision, not just engineering.

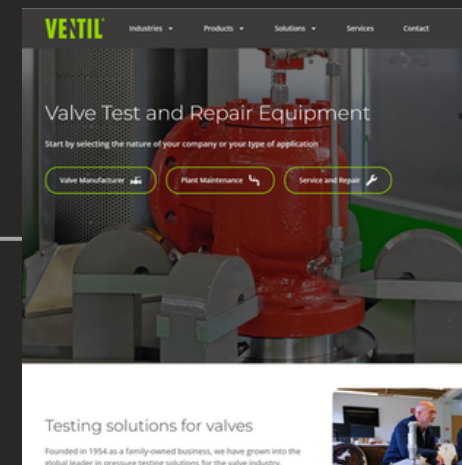
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Safety during pressure testing

A real incident: a valve that held 370 bar split apart at only 25 bar. Why a passed test is no guarantee — and how the SPL Safety Protection Levels work.

3



Showcase new Ventil website

A first look at the new Ventil website — improved navigation, product selector and digital experience for customers and partners.

4



Room for discussion

We invite you to ask questions, share your experiences and opinions. Your insight might be our next innovation or Tune-In session!

Sizing the Right Test Bench

Valve Bore Connection vs. Pressure Class
DIN/EN and ASME/API compared

The goal is not to select the biggest machine that safely covers the requirement — it is to select the **smallest machine that fully and reliably meets** the customer's actual testing needs.



The Connection

On the drawing, a 24-inch flange is simply a 24-inch flange. But the nominal size we quote from is rarely the full story

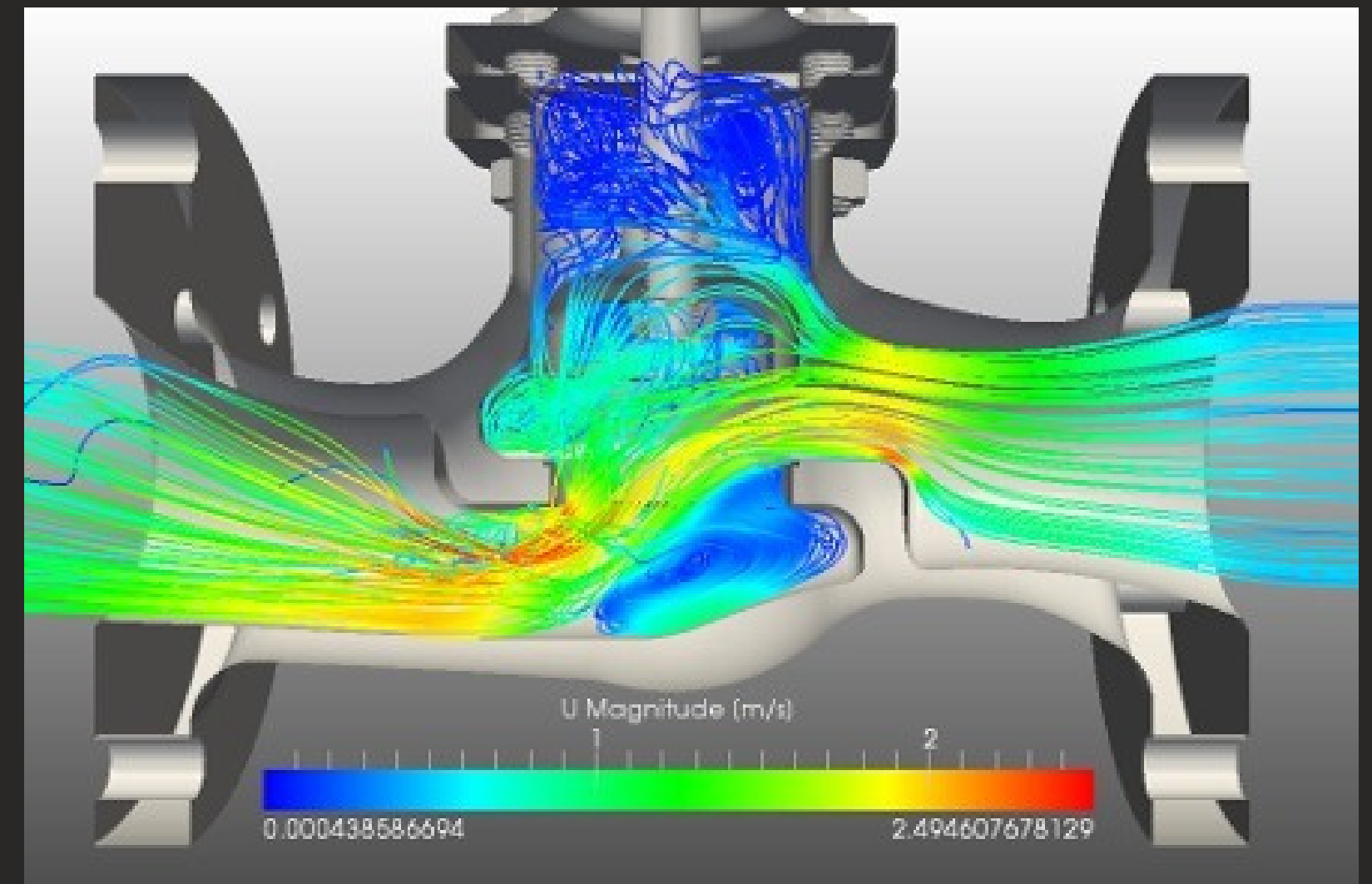


The Pressure Class

Higher classes mean thicker walls. In ASME and API that thickness grows inward, quietly reducing the passage the valve actually has.

The Effective Bore

What matters is the real flow passage. That is the diameter the seal has to cover, and the diameter the clamping force is calculated on.



Example: 24" Class 2500

Body test pressure 638 bar – required clamping force by sealing method

Nominal bore

O-ring 620x 30 - Ø 600mm

The basic calculation of the required clamping force is:

$$A = 63 \times 63 \times 0.7853 = 3,117 \text{ cm}^2$$

$$F = 3,117 \times 638 = 1,988 \text{ metric tons}$$



Example: 24" Class 2500

Body test pressure 638 bar – required clamping force by sealing method

However, at this pressure class, the actual internal diameter of a 24-inch flange is approximately 518 mm., and potentially even smaller.

When applying an O-ring of 540 by 10 mm, the required clamping force becomes:

$$A = 55 \times 55 \times 0.7853 = 2,375 \text{ cm}^2$$

$$F = 2,375 \times 638 = \mathbf{1,515 \text{ metric tons}}$$



Example: 24" Class 2500

Body test pressure 638 bar – required clamping force by sealing method

And this effect becomes even stronger when using inner or radial sealing adapters.., so called bore plugs, sealing inside the valve bore connections.

In this case, we can use the actual diameter of 518 mm, and the calculation becomes:

$$A = 51.8 \times 51.8 \times 0.7853 = 2,107 \text{ cm}^2$$

$$F = 2,107 \times 638 = 1,344 \text{ metric tons}$$



Overview

One example, but it shows a common pattern: we often calculate on diameters larger than the actual effective valve bore. That adds an unintended safety margin, and with larger sizes and higher pressure classes the gap becomes substantial.

The result is a test bench that is unnecessarily large and expensive.

Nominal bore

O-ring 620×10 – ø 600 mm

1,988 t

Actual flange ID

O-ring 540×10 – ø 518 mm

1,515 t

Inner / radial sealing (bore plug)

Actual ø 518 mm

1,344 t

Same valve, same pressure – up to ~32% less clamping force by sealing on the real bore.

The Commercial Impact

Technically safer does not mean commercially smarter

Oversized Path

Oversizing leads to higher costs and unnecessary capacity, often resulting in a lost order to competitors focused on efficiency.

Oversized

- Calculated on nominal diameter
- Larger clamping system required
- **Bigger model, higher investment**
- Capacity the customer will never use

Right Sized Path

A correctly sized valve connection allows for optimal performance, ensuring competitive investments that meet actual testing needs and customer satisfaction.

Right sized

- Calculated on effective (net) bore
- Correct clamping force, no excess
- **Competitive investment level**
- Fully meets actual testing needs



"Better too big than too small" feels safe — but that extra capability often adds **cost without value.**

Key Takeaways & QA



Right Sizing

Right sizing is essential for commercial success, impacting your win rate beyond just the engineering decision.



Growing Gaps

As diameters and pressure classes increase, the gap between nominal and effective bore sizes becomes significantly larger.



Comprehensive Approach

A comprehensive approach to quoting ensures accurate calculations and better alignment with actual sealing methods, improving overall project outcomes.



Nominal vs. Effective

Always remember that nominal sizes do not equal effective bore sizes in ASME API applications, leading to potential discrepancies.



Bore Plug Advantage

Utilizing bore plugs amplifies the benefits of inner radial sealing, focusing on the actual effective bore for enhanced performance.

Actionable Steps

Always request the complete valve list to determine the sealing method and calculate on the actual effective bore.
(Ventil teams can use the OMS calculator as a first indication, but the valve list leads.)

Why a passed test is no guarantee

Safety During Pressure Testing
Unpredictable failure and how to contain it

Failure during pressure testing is **unpredictable**. The question is not whether a valve **passes**, but what happens when it does not.



They build valves that stop explosions

This customer manufactures valves for fire and explosion suppression systems. The valves contain a spring mechanism, set to open within a specified pressure range.

Gas pressure test at 370 bar passed

The first test:

The valve involved in the incident was subjected to a gas pressure test at approximately 370 bar, with a permitted tolerance of plus or minus 5 bar. It completed this part of the test without any issue.

At this point, everything indicated a valve performing exactly as designed.

CLASSIFIED

CLASSIFIED

CLASSIFIED

CLASSIFIED

Stored energy

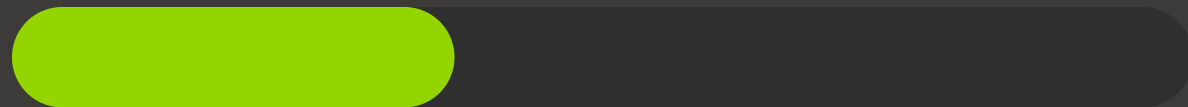
The energy behind every pressure test

When we pressurize a valve, we store energy in the test object and the connected system. If containment is lost, that energy is released. How much depends on the test medium.

Hydrostatic

Liquid — almost incompressible

Lower stored energy



- Stores relatively little energy as pressure increases
- A crack usually causes pressure to drop quickly
- Often used to confirm structural integrity before gas testing

Gas

Gas — compressible

High stored energy



- Large amounts of energy stored in the compressed gas
- On sudden loss, gas expands and keeps pushing the separating component
- Higher velocities, possible pressure wave and multiple fragments

The difference is the amount of stored energy and the way it is released. The danger exist in both cases.

Safer is not safe

Why a hydrostatic test does not remove the risk

Hidden energy in a hydrostatic test

- Air pockets remain trapped in cavities, behind internals or at high points
- That trapped air is compressed and stores energy
- Hoses, seals and components deform elastically and release energy on failure

The projectile risk remains

- A plug, adapter, cover or threaded component can still separate and accelerate
- Lower available energy, but enough speed to cause serious injury

Once that plug is travelling through the air, it does not behave differently because the test medium was water rather than gas. **It is simply a projectile.**

*Pressurized volume, test medium, size and mass, valve construction and failure mode all influence the consequences.
This uncertainty is why Ventil developed the Safety Protection Level concept.*

Safety is a simple choice

		TEST PRESSURE					
VALVE SIZE*		150#	300#	600#	900#	1500#	2500#
NPS (INCH)	DN (MM)	31 BAR	78 BAR	104 BAR	154 BAR	384 BAR	640 BAR
	<50	PROTECT/ SAFEGUARD	PROTECT/ SAFEGUARD	PROTECT/ SAFEGUARD	PROTECT/ SAFEGUARD	PROTECT/ SAFEGUARD	HIGH-IMPACT
<4	<100	PROTECT/ SAFEGUARD	PROTECT/ SAFEGUARD	PROTECT/ SAFEGUARD	PROTECT/ SAFEGUARD	HIGH-IMPACT	BUNKER
<6	<150	PROTECT/ SAFEGUARD	PROTECT/ SAFEGUARD	HIGH-IMPACT	HIGH-IMPACT	HIGH-IMPACT	BUNKER
6+	150+	PROTECT/ SAFEGUARD	PROTECT/ SAFEGUARD	HIGH-IMPACT	HIGH-IMPACT	HIGH-IMPACT	BUNKER

← Pressure Class

↑ Valve Size

You do not need to predict the *failure*. You only need to know the *size* and the *pressure*.

Levers of safety

Safety protection levels (SPL)

1



Protect

A single (fixed) safety screen, separating the position of the operator and the test bay.

- 12 mm Polycarbonate
- 3 mm mild steel

2



Safeguard

Fully surrounding safety enclosure, welded cage construction with polycarbonate screens and open roof

- 12 mm Polycarbonate
- 3 mm mild steel

3



High-impact

Fully surrounding safety enclosure, construction from high impact steel, sandwich panels and open roof

- 4 mm high impact steel
- Sandwich Panels

4



Bunker

Fully **customized solution** to match the exact need for strength and impact resistance, including roofing and kevlar reinforced blast curtains

Key Takeaways & QA

Nobody was injured, but that was a fortunate outcome—not evidence that the situation was safe.

The case challenges two assumptions;

- The first is that passing a high-pressure test proves that a component will remain safe during all subsequent tests.
- The second is that hydrostatic testing removes the need for adequate physical protection.



Your window to Ventil

Showcase: The New Ventil Website
one platform for customers, partners and teams

For most prospects, the website is **the first contact with Ventil**. It has to do the work of a **technical expert**, a **sales support tool** and a **business card** at the same time



Valve Test and Repair Equipment

Start by selecting the nature of your company or your type of application

Valve Manufacturer 

Plant Maintenance 

Service and Repair 

Key objectives

- Generate qualified leads
- Demonstrate capability and differentiation
- Explain equipment, applications and technology
- Help customers and partners
- Attract the right technical searches

"Customer application or need → Our solution"

Valve Test and Repair Equipment

Start by selecting the nature of your company or your type of application

Valve Manufacturer 

Plant Maintenance 

Service and Repair 

Our joint target audience

- Valve Manufacturers
- Plant Maintenance Workshops
- Service and Repair Companies

"Customer groups differ in their needs and preferred communication style"

Valve Test and

Start by selecting the nature of your company

Valve Manufacturer 

Plant manufacturer 

Service and Repair 

Test Equipment

Repair Equipment

Test and Repair Containers

Safety Enclosures

Specialty Tools

Second Life Equipment

Equipment

Application

Product groups

- Test Equipment
- Repair Equipment
- Test- and Repair Containers
- Safety Enclosures
- Specialty Tools
- Second Life Equipment

"Showcase equipment and solutions"

Valve Test and Repair

Start by selecting the nature of your company or your type of application

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[Plant Maintenance !\[\]\(51e24a718c479f61046a6569471331fa_img.jpg\)](#)
[Service and Repair !\[\]\(821acc15c470127e6ad8ef362d2c5a7f_img.jpg\)](#)
[Areas of Expertise](#)
[Custom Machine Development](#)
[Clamping and Sealing](#)
[Test Bench Selection Guide](#)

Value Proposition

- Areas of Expertise
- Custom Machine Development
- Clamping and Sealing
- Test Bench Selection Guide

“Demonstrate technical competence and reliability”

Service and Support

Optimizing equipment availability, test accuracy and lifecycle performance

[Contact us](#)

Serving customers worldwide

We strive to offer customers worldwide the same high standard of

"Support the service process"

Service and support

- Service and support solutions
- Ventil Connect Portal
- Calibration of measuring instruments
- Health- and safety checks
- Installation, re-location and commissioning

Contact us

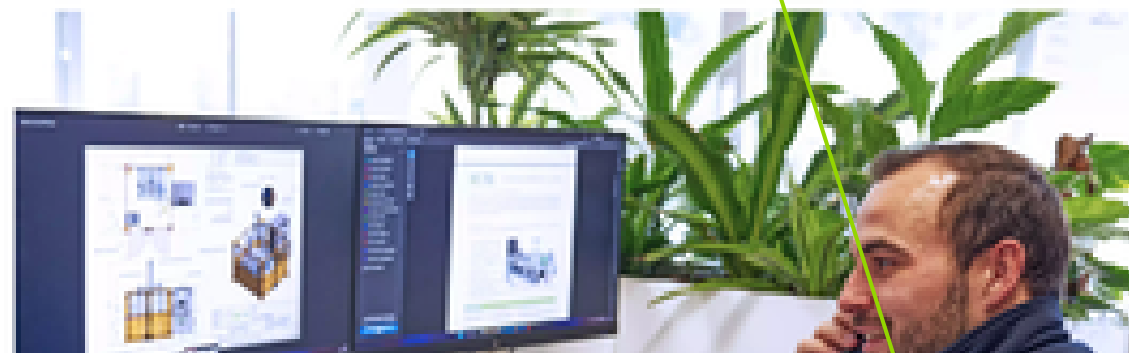
Our global teams and partners are ready to assist you

Get connected

- Ventil's facilities
- Trusted partners

Expertise wherever you need it

With our dedicated teams and trusted partners worldwide, expert support is always within reach. Select your country or region to find your local VENTIL team and contact details.



"Provide easy global access to the right technical and commercial support."

Specialty Tools

Work smarter with purpose-built valve service tools designed to save time, improve safety and deliver results

Tools to get the job done

We offer a wide range of specialty tools and accessories tailored specifically for the valve service and maintenance industry



Product selector

- Live demonstration

“Easily find the right products for customer needs and submit an RFQ”

Key Takeaways & QA

- Additional knowledge, information or functionalities?
- Input on customer use cases — photo, statement, approval for publication?
- Check and re-confirm partner contact details?
- AOWB — Any Other Website Business?

Help us build our **success stories!**

Customer stories are the strongest proof we have. If you have a case worth sharing, we would like to publish it.

- A photo of the machine in operation, ideally with the operator
- A short statement from the customer in their own words
- Written approval to publish, including company name and images

Customer experiences

"By investing in a VENTIL test bench, we have significantly reduced manual work, streamlined reporting and strengthened compliance.

With their reliable equipment, expert support, maintenance and operator training, we ensure efficient operation and long-term performance."

★★★★★

Joost Schreurs, Inspector & Chemical Engineer
All Liquids Piping



New campaign

Mobile solutions

The VC2, the VC7.5 Xtreme and the VC10-CC deserve **more attention** in the market. This campaign gives our **team** and **trusted partners** a sharp offer they can use to open the conversation with their customer and win orders!

A combi package: any mobile test bench paired with the POLIR F6 — at a special package price.

<https://ventil.nl/campaign/#whereveryougo>

MOBILE SOLUTIONS

GET **10% OFF** YOUR COMBO

GET DETAILS

CHOOSE YOUR MACHINE



OR



OR



ADD POLIR



**10%
OFF**

The background image shows an industrial environment. A robotic arm is positioned in the foreground, reaching towards a large, complex machine. The machine has various components, including pipes and structural elements. In the background, there are yellow overhead cranes and a large white container or storage unit. The scene is lit with industrial lighting, creating a professional and technical atmosphere.

Thanks for your
time, involvement,
energy and
insights.

On behalf of the whole
Ventil team

Richard, Arthur, Emiel and Joep