

# ***THE SMARTEST THING YOU CAN DO IS LISTEN.***

**Smart Maintenance Solutions Brochure**

**BEYOND THE BOND**

**LOCTITE® Pulse**



# BOOST YOUR MAINTENANCE PROCESSES:



## MONITOR

Check in on your equipment 24/7 via your preferred digital device.



## IMPROVE

Allow your equipment to live last longer, and reduce default risks and spare parts inventory.



## PROTECT

Make your plant safer for your team and for the planet by limiting its environmental impact.



## OPTIMISE

Generate data-driven insights that allow better decision-making and reduce stress levels.



## PREDICT

Identify faults, anomalies and energy losses before they become functional failures.



## PLAN

Schedule planned downtime and plan parts replacements well in advance.



## RESOLVE

Tap into our adhesive heritage to find long-lasting fixes.

## AS A RESULT: BOOST EFFICIENCY, CUT COSTS.

The ultimate outcome is a substantial time and cost advantage due to streamlined operations and increased productivity.

## UNPARALLELED SIMPLICITY.

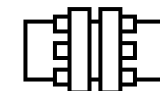
- **ONE PLATFORM:** bring high-end IIoT solutions and advanced AI algorithm capabilities together on a single platform – LOCTITE Pulse.
- **UNIVERSAL FIT:** monitor a wide range of critical static and rotating equipment.
- **ALL-IN-ONE APP:** equipment health status and notifications are centralised in an easy-to-use web-based app – that you can access anywhere, anytime.
- **EASY IMPLEMENTATION:** you decide which critical assets to monitor and to plug and play. No IT implications or hassle. It's as easy as that.
- **DECADES OF INDUSTRIAL MRO EXPERTISE:** leverage 70+ years of LOCTITE industrial expertise and repair solutions for efficient fixes and enhanced reliability.

## LISTEN TO YOUR EQUIPMENT'S HEARTBEAT.

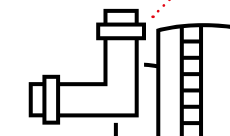
LOCTITE Pulse, powered by 70+ years of industrial expertise, is redefining industrial reliability. From cutting-edge monitoring technology to expert repair solutions for both static and rotating equipment. Our Industrial Internet of Things solutions are designed to help you stay ahead of your plant failures, reduce downtime, and improve safety and sustainability.



### STATIC



Smart Flange

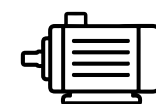


Smart Pipe & Tank



Smart Steam Trap

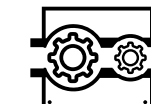
### ROTATING



Smart Motor



Smart Pump



Smart Gear Box



Smart Fan



Smart Generator



Smart Compressor

... and more

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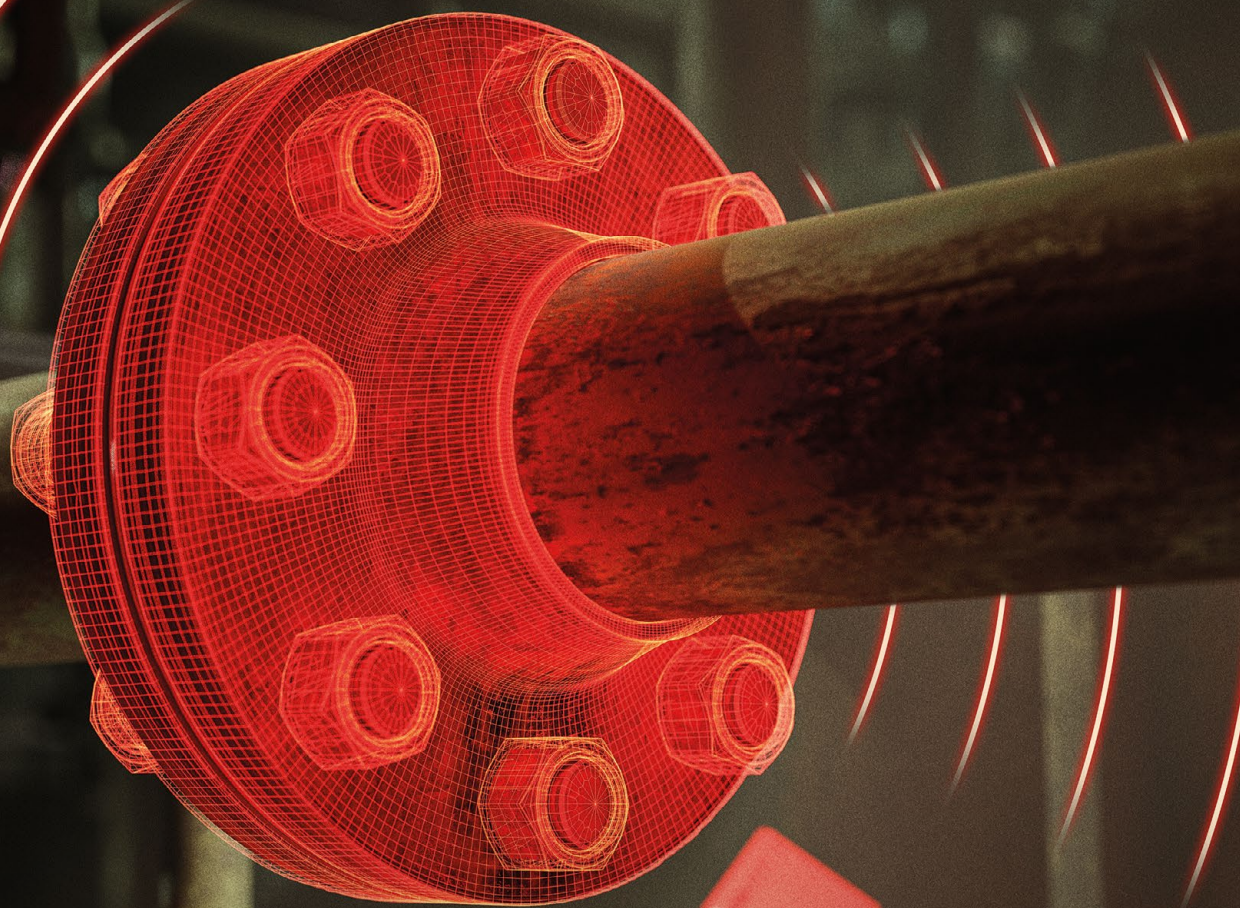
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LOCTITE® Pulse

# SMART FLANGE



LOCTITE Pulse Smart Flange Leak Detection is an easy-to-use smart maintenance solution that can detect leakages early and may predict critical incidents. You can monitor critical assets in a web-based app and receive notifications when irregularities have been measured. This enables operators to react in a timely manner and decrease the risk of leaks growing.

## FLANGE LEAKS ARE A BIG PROBLEM.

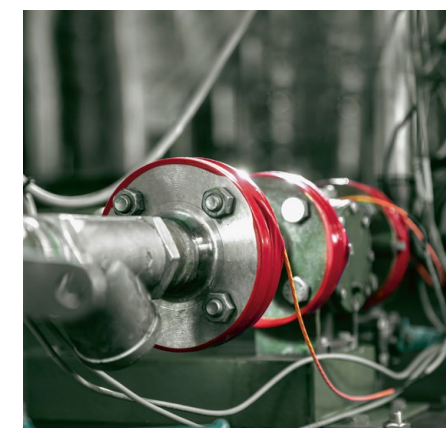


- Nearly every plant in the processing industry has thousands of flanges, many of which are highly critical.
- Especially critical flanges require regular inspection. This can be very time consuming due to insulation, cladding, or difficult accessibility.
- Leakages can lead to serious consequences that affect the safety of the environment and the plant itself.
- Some flammable liquids can form explosive mixtures with air.
- Every hour that a leak goes unnoticed, environmental issues like water contamination and its consequences become more likely.
- Efforts required for repairing a leak increase over time, up to a point where a shutdown of the whole process may become necessary.

With the LOCTITE Pulse Smart Flange solution, you benefit from smart monitoring of your flanges that may reduce the risk of leakage escaping into the environment or other harmful consequences.

## ALWAYS-ON MONITORING OF CRITICAL FLANGES AND TEMPORARY CONTAINMENT OF LEAKS.

- **INNOVATIVE:** novel, patented carbon nanotube technology that supports quick detection of hydrocarbon leaks
- **PEACE OF MIND:** secondary containment can slow down the leakage and create time for planning the repair
- **ALWAYS-ON:** continuous reporting of equipment status – 24/7, 365 days a year
- **RELIABLE:** robust, consistent, and hydrocarbon-specific signal generation
- **NON-INTRUSIVE:** retrofit installation during operations
- **EXTRA FLEXIBLE AND STRONG:** pick silicone or composite secondary containment for easy installation and removal or mechanical robustness



Scan the QR code  
and find more  
information:





# SMART PIPE & SMART TANK



The LOCTITE Pulse Smart Pipes & Smart Tanks offer an advanced retrofit monitoring solution for early-stage hydrocarbon leak detection. Powered by carbon nanotube sensor technology, they predict critical incidents, minimize downtime, and boost sustainability, even in aging tanks and pipes.

## PIPE AND TANK LEAKS POSE A MAJOR RISK, BOTH FOR YOUR BUSINESS AND FOR THE ENVIRONMENT.



- Leaks from damage, corrosion, and other factors can lead to significant harm, particularly in critical assets like pipes and tanks.
- Hydrocarbon liquid leaks, often underestimated, pose environmental risks such as water contamination and fire hazards.
- The challenge persists as possible leaks may remain undetected over extended periods, further compounded by the limitations of manual inspection methods.

**With the LOCTITE Pulse Smart Pipe and Tank Leak Detection solution, you gain intelligent monitoring, minimizing leak risks and environmental hazards.**

## ALWAYS-ON MONITORING OF PIPES AND TANKS FOR 24/7 LEAK DETECTION.

- **NON-INTRUSIVE:** retrofit, no shutdown required
- **QUICK AND EASY ROLL-OUT:** start monitoring of pipes & tanks in a short time
- **ALWAYS-ON:** continuous reporting of failures – 24/7, 365 days a year
- **INNOVATIVE SENSOR:** advanced carbon nanotube technology to address critical liquid hydrocarbon leakage issues in industries like oil and gas petrochemicals
- **UNIVERSAL FIT:** versatile and applicable to most industrial pipe and tank configurations, even aging tanks & pipes



Scan the QR code and find more information:





LOCTITE® Pulse

# SMART STEAM TRAP

“

*We continuously get the information from the system. We can immediately react, and we do not have the losses of several months that cost us money.*

”

Annegret Schindlmeyr,  
Sustainability Manager, Henkel Consumer and  
Industrial Adhesives Plant

LOCTITE Pulse Smart Steam Trap is a smart maintenance solution that can detect asset failures to help reduce energy losses, minimize CO<sub>2</sub> emissions, and increase product quality. In this way, it not only lowers costs but also increases sustainability. You can monitor critical assets in a web-based app, supporting your existing maintenance routines in order to increase plant safety, productivity, and uptime.

## THE IMPACT OF STEAM TRAP FAILURE IS HUGE.



- Almost every industrial plant has a large number of steam traps that can have a significant impact on the performance, resource consumption, and sustainability of the plant.
- With lack of manpower in maintenance and longer intervals between manual inspections, broken steam traps can go undetected for a long period of time and cause significant energy loss, increased fuel consumption, and well as unnecessary CO<sub>2</sub> emissions.
- Increasing the number of manual inspections to regularly monitor hundreds and thousands of steam traps requires additional labour cost and expenses.
- Insufficient removal of condensate inside the steam trap significantly increases the risk of damages to the steam system, even causing long downtimes and affecting people's safety.

With LOCTITE Pulse, you benefit from the smart monitoring of your steam traps and are able to reduce all of the above issues, thus allowing for efficient operations and contributing to potential cost reduction.

## ALWAYS-ON MONITORING OF STEAM TRAPS. CREATE COST SAVINGS AND IMPROVE SUSTAINABILITY.

- **NON-INTRUSIVE:** retrofit, no shutdown required
- **QUICK AND EASY ROLL-OUT:** start monitoring steam traps in a short time
- **ALWAYS-ON:** continuous reporting of failures – 24/7, 365 days a year
- **RELIABLE:** sophisticated AI algorithm supports high level of failure detection and lowers false alarm rate
- **ALL-IN-ONE:** detection of all relevant steam trap failure types
- **HIGH TEMPERATURE RESISTANCE:** Up to 650°C (1,200°F)



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and find more  
information:





# SMART ROTATING EQUIPMENT









-   
Smart Motor
  -   
Smart Pump
  -   
Smart Gear Box
  -   
Smart Fan
  -   
Smart Generator
  -   
Smart Compressor
- ... and more

With LOCTITE Pulse, you can remotely monitor your critical rotating equipment 24/7 to better predict failures and reduce unplanned downtime. All through an easy and intuitive plug & play IIoT solution that combines AI capabilities, 6-in-1 measuring components, and battery-powered flexibility and is approved for hazardous areas.







## KNOWN CHALLENGES

- Production losses caused by unplanned downtime
- Shortage of skilled trades personnel
- High costs of emergency maintenance & early equipment replacement
- High stress level & safety incidents
- Energy losses & ambitious sustainability targets
- Insufficient reliable asset information

## BENEFITS OF LOCTITE PULSE

-  Identification of faults before they become functional failures
-  Proactive downtime planning thanks to advance notification of potential failures
-  Improved equipment lifetime & reduction of spare parts inventory
-  Enhanced peace of mind & safety
-  Identification of causes of energy losses & improved sustainability metrics
-  Proactive data-driven decision-making

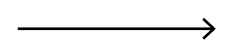
## ALWAYS-ON MONITORING OF 6 PARAMETERS: HIGHEST PRECISION AND DETECTION RATE

-  **3D VIBRATION**  
Get a reliable picture of the health status of your assets thanks to high-resolution triaxial vibration monitoring from 50 to 6,000 RPM.
-  **MAGNETIC FLUX**  
Knowing your equipment's magnetic flux lets you assess its energy consumption.
-  **ACOUSTIC EMISSIONS**  
If you can hear the problem, it's too late. That's why we monitor imperceptible acoustic emissions of the equipment.
-  **TRUE RPM**  
More reliable analysis, even at varying speeds, thanks to true speed measurement.
-  **TEMPERATURE**  
Know precisely your equipment's precise temperature, since an increase can mean something is not right.
-  **HUMIDITY**  
Protect your equipment from rust and corrosion: monitor the humidity around it.

## PLUG. PLAY. PEACE. NO EXTRA IT INFRASTRUCTURE, NO EXTRA EDGE BOX, NO WIRES, NO COMPLEX (IT) PROJECT.

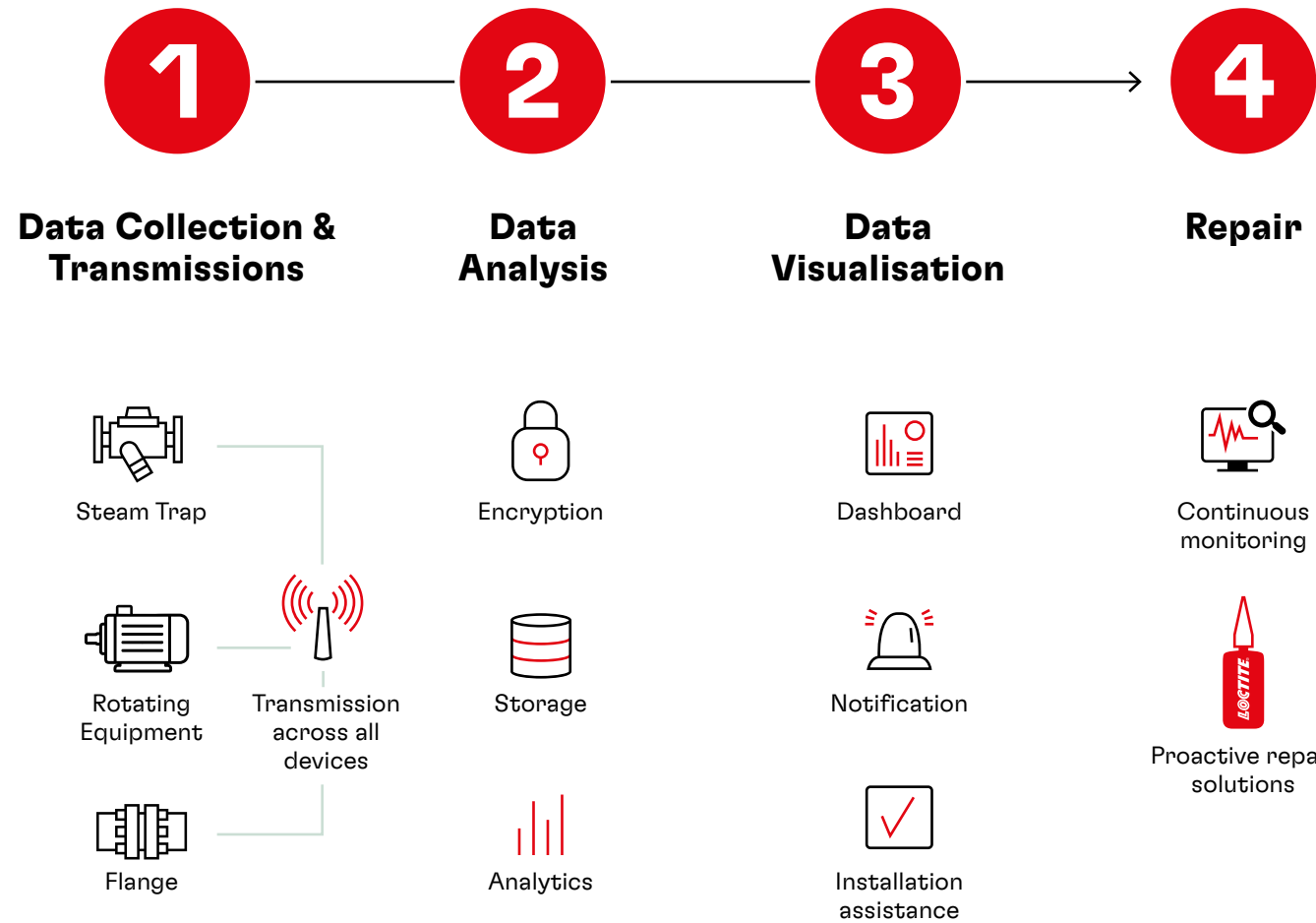
- **QUICK & EASY:** easy installation, even for inexperienced personnel
- **HASSLE-FREE:** maintenance-free sensor with a service life of 3-8 years
- **NON-INTRUSIVE:** retrofit, no shutdown required
- **ALWAYS-ON:** 24/7, 365 days a year
- **EXPLOSION-PROOF:** explosion protection allows use in hazardous areas
- **COMPLIANCE:** outstanding compliance with common industry standards

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# ONE **END-TO-END** SMART SOLUTION OVERVIEW.



## YOUR SMART PACKAGE.

LOCTITE Pulse solutions come with a customised set of sensors, accessories, and a subscription.



**SENSOR PACKAGE**  
Customised to your requirements.

- Accessories and installation



**SUBSCRIPTION**  
Per asset and month or year.

- Smart monitoring

**WE HELP YOU FIND THE PROBLEM.  
THEN WE HELP YOU FIND  
THE SOLUTION.**

LOCTITE Pulse goes beyond predicting and identifying failures – it helps you find smart fixes, supporting smooth, long-lasting repairs. Repairs that can help reduce and eliminate the causes of chronic equipment failures, decrease repetitive maintenance activities, increase equipment uptime, and lower overall operating costs.

## SECURITY TAKES TOP PRIORITY.

- Data captured at your critical asset is transmitted to the gateway, from where it is wirelessly transferred to the LOCTITE® Cloud.
- The data is stored and visualised in the LOCTITE® Cloud, which is based on Microsoft Azure and ensures applicability of the latest security measures.
- The whole solution can run fully independently of the site network, and thus provides your systems with additional protection against possible intruders.
- The Sensor technology, data transmission, and storage meet state-of-the-art safety standards.
- The device authentication mechanism and an access control concept ensure that only trusted devices and users can enter the solution network.





INNOVATION MEETS EXPERTISE:

# TAP INTO OUR **ADHESIVE HERITAGE** FOR ENHANCED RELIABILITY AND PEACE OF MIND.

From cutting-edge monitoring technology to expert repair solutions, we keep your plant running smoothly.



**BEYOND THE BOND**

**LOCTITE**

## OPTIMISE ASSEMBLIES AND **REDUCE UNPLANNED DOWNTIME** WITH LOCTITE.

### REPAIR COMPOSITES

**REDUCE COSTS AND EXTEND ASSET LIFETIME WITH REPAIR COMPOSITES.**

A wide range of technologies suitable for addressing a broad spectrum of challenges.



### GASKETING PRODUCTS

**LIQUID GASKETS HOLD UP BETTER. FOR LONGER-LASTING SEALS.**

Replace traditional gaskets and effectively seal flanges.

### RETAINING COMPOUNDS

**HIGH-LOAD, HIGH-STRENGTH PRODUCTS.**

Increase the reliability of traditional bearing mounting methods with retaining adhesive.



### THREADLOCKERS

**TIGHTEN YOUR OPERATION. ELIMINATE LOOSENING.**

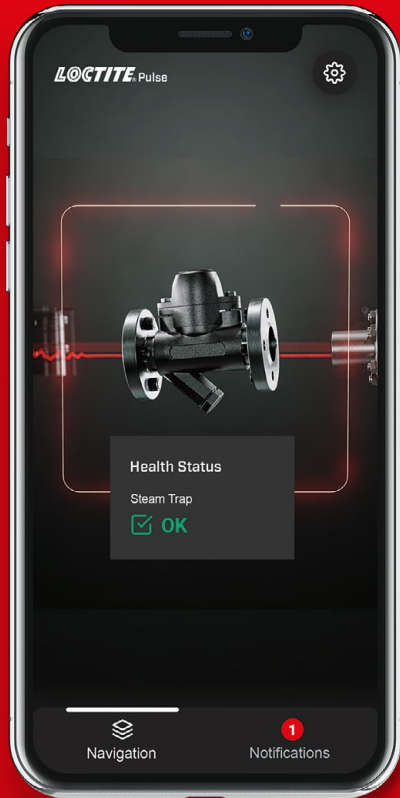
Lock and seal your threaded assemblies, protecting against vibrational loosening, corrosion, and seizure.

... and more

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# ONE SOLUTION TO MONITOR ALL YOUR EQUIPMENT.

## LOCTITE PULSE – THE APP

Keep up with your equipment's heartbeat. The web-based LOCTITE Pulse app lets you monitor all your critical assets with just a few clicks.

## ASSET STATUS MONITORING

Always-on monitoring of your critical assets in a single web-based app.

## NOTIFICATION

Be informed of irregularities in your industrial assets.

“ Having a consolidated view of the CO<sub>2</sub> emissions and energy waste attributed to our assets in one place empowers me to identify and address the most crucial areas.

Camila,  
Sustainability Manager

“ The user-friendly app, which is intuitive to use, promptly alerts me to any issues with my equipment. This allows me to swiftly pinpoint and address problems without being sidetracked by irrelevant information.

John,  
Maintenance Technician

“ The app enables me to swiftly gain an overview of my assets. With alarm types and the predictive quantification of opportunity costs, it becomes effortless for me to prioritize maintenance tasks and schedule shutdowns.

Luke,  
Reliability Manager



**OTC**  
SPOTLIGHT NEW  
TECHNOLOGY 2024



**RITA**  
PRODUCT INNOVATION  
OF THE YEAR 2024



**IOT SOLUTIONS**  
**WORLD CONGRESS**  
BEST SMART INDUSTRY 4.0  
SOLUTION AWARD

**LOCTITE**® Pulse

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