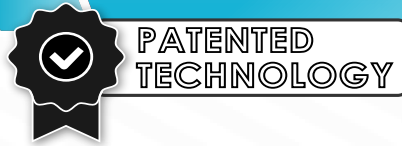


# SMART PROGRAM

## Fasteners monitoring

INNOVATION TO **MONITOR** BOLT TENSION, GET YOUR ACTIVITY **SAFE** AND **PLAN** YOUR MAINTENANCE FOR **EFFICIENCY**



### OUR TECHNOLOGY: A SOLUTION TO MONITOR BOLTED ASSEMBLIES

#### THE INDUSTRY CHALLENGE: THE LOOSENING

Some assemblies face **significant constraints**: vibrations, repeated stress, variations of temperature, shocks. It often generates **nut loosening**.

Industries use **solutions to lock bolts** or put in place **periodic maintenance** to avoid production stop, accident and lethal injuries.

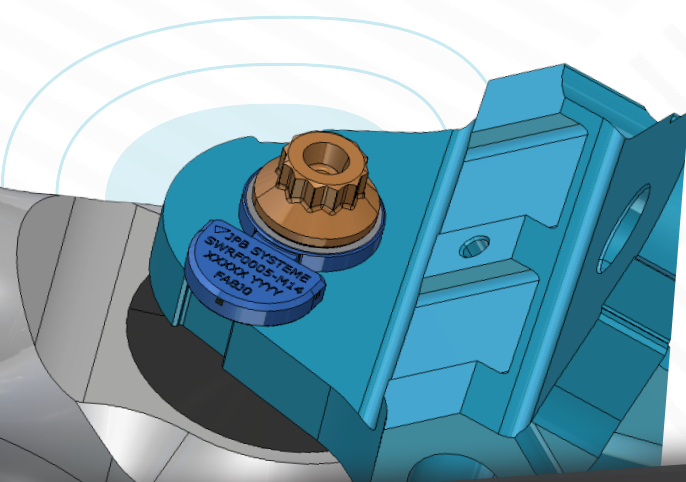
These solutions **take time, are expensive** and **not always accurate**.

#### OUR SOLUTION TO MONITOR YOUR FASTENERS

JPB Système designed and manufactured a **specific sensor** that checks the level of tightening in your assembly.

Our Smart Program solution will help you to **save time and money, automatically record** the checks in your critical bolt : periodic torque checks, fasteners with difficult access (height, distance, confined spaces).

Let's move on to the efficient and predictive maintenance !



SYSTEMATIC CHECKS...

RETIGHTEN WHEN NECESSARY !



## HOW IT WORKS

JPB Système developed **specific strain gauges** that allow size reduction of the sensor. The installation of the sensor is easy in your assembly. Sensor is equipped with **smart electronics**. It processes and converts measurements **into a robust signal** that is not affected by distance of communication or variations of temperature. It ensures a **high level of accuracy** over the entire operating range.

JPB Système developed a **data acquisition system** and **displays solutions** according to your needs:



### RFID Smart Washer - Autonomous

The smart reader uses the RFID technology to supply power to the washer and transmit data.

The smart washer is inert (no battery), self-contained and can be installed on mobile equipment.

### Wired Smart Washer - Connected

Thanks to the continuous power supply and the web data transmission, checks can be done remotely at any time using a PC or tablet.

## USERS BENEFITS



**Secure the tightening** monitoring: check tension in the assembly when and where needed. **Secure the control** by limiting the action of the technician.



**Quick** and **accurate** check in few seconds. **No disassembly/reassembly**; no torque wrench test.



Reduce **maintenance time** and **cost**.



Easy access in **confined space** with the RFID reader extension.



Ensure **automatic traceability** of fasteners monitoring.



**Easy installation** in your assembly (thin thickness = 5mm). **Simple** and **intuitive** to use.



## EASY TO USE

- Put the Smart Washer under the **non-rotating part** of the fastener (screw head or nut).
- **Tighten the bolt as usual** with your torque wrench. Do not change your torque process.
- When bolt is properly tightened, **define the "100%" level** with the reader (RFiD Smart Washer) or with the app (Wired Smart Washer).
- **At any time**, you can check the variation of **the tension in the fastener**: do a manual check with the reader (RFiD Smart Washer); manual or automatic check with the app (Wired Smart Washer).

## 2 SOLUTIONS TAILORED TO YOUR NEEDS

### RFiD - AUTONOMOUS



- Inert sensor: **no electromagnetic interference**.
- RFiD: **no battery**, no wire: suitable for sensitive environments.
- Local data storage (in the reader): maximum **cybersecurity**.



RFiD communication



Sensor with no battery



Manual check



Data stored in the internal memory of the Smart Washer



On-site check

### WIRED - CONNECTED



- Wired sensor: **remote consultation at any time**.
- Continuous power supply: **automatic checks**.
- Automatic data storage in the cloud: **available at any time**.



Mobile network or wired communication



24V or 230V power supply



Manual or automatic check



Data stored in the cloud or in PC



On-site or remote check

# TECHNICAL FEATURES

	RFiD Smart Washer	Wired Smart Washer
Range	M8 - M22	M8 - M24
Solution operating temperature	-20°C to +50°C (reader)	-20°C to +65°C
Sensor temperature resistance	-50°C to +150°C	-30°C to +90°C
Water resistance	IP66	
Material of body	Stainless Steel	
Data transmission	Passive RFiD	Ethernet and mobile network
Internet connection	No: local data storage	Yes: computer/cloud storage
Power supply	No power (passive RFiD)	24V DC or 230V AC
Number of measuring points	Redundancy: 2 measurement points	Simple point of measurement

## RESISTANCE

The Smart Washer is **tested in harsh conditions**: vibrations, drops, shocks, chemical solvents resistance, UV resistance... We check the product at every manufacturing steps to guarantee a **high level of quality** & reliability.



PASSIVE DEVICE



ASSEMBLY SAFETY



HUMAN FACTOR MITIGATION



REDUNDANT MEASURE



EASY TO USE



TIME SAVING FOR MAINTENANCE

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