

# MAN Truck

MAN Truck & Bus is a German commercial vehicle manufacturer with over 100 years of history. The company develops and produces trucks, buses, and diesel engines and is one of the leading manufacturers in Europe. MAN employs around 40,000 people worldwide and operates at numerous locations.

## Challenge

The axle assembly department at MAN Truck & Bus was faced with the task of ensuring consistently high quality for over 30,000 screw connections per day and optimally planning maintenance.

The previous air-powered impact wrenches and manual data collection did not provide sufficient transparency and made condition-based maintenance virtually impossible. The company was looking for a scalable solution that would collect bolting data in real time, automatically archive it, and trigger maintenance orders precisely at the optimal time—all integrated into the existing production infrastructure.

## Resolved by IPM

Real-time monitoring

Condition-based maintenance

Long-term traceability

Automated screw fastening test

Automatic maintenance orders

**+30.000**

daily screw  
connections

**80**

networked screwdriving  
systems

**≤1 Mio.**

Screw connections up to  
maintenance

## Do you have any questions?

Feel free to contact us!

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# This is how maintenance works today: Screw systems show in the axis, what no one else can do

Over 30,000 bolts are tightened in the axle production facility of MAN Truck & Bus AG in Munich on a single production day. In order to achieve this number of units in the highest quality on a permanent basis, the machines must be kept in top condition at all times through maintenance and care. Since our goal is to continuously optimize automation and production, even what has proven itself over decades must be put to the test.

For this reason, we no longer rely on air-operated impact wrenches in axle assembly, but predominantly on electronic wrenches with integrated monitoring functions. Only in this way is it possible to guarantee the accuracy of the bolted joints and thus the safety of our vehicles, even under the highest stresses.

## Production structure moves into focus

For a long time now, the sole task of maintenance has not been to repair defective machines and systems, but also to gather innovative knowledge about the optimum production structure. This includes automatically saving important production data and constantly monitoring the production facilities. For this reason, too, the foundation stone was laid in 2012 for the development of a new system - the screw cycle recording system. The basis for connecting all screwdrivers to the network was realized for 80 screwdriving systems.

Now it is possible to store production data such as the correct torque and angle of rotation of the bolted joints on a server and retrieve them online. In cooperation with the planning department of the software company CSP and the electrical maintenance department, the existing IPM archiving program was adapted so that it automatically sends a maintenance order to the maintenance department after 100,000 to 1 million screwdriving operations.

## Maintenance at the optimum time

Maintenance is now able to perform condition based maintenance at the optimum time, which was previously not possible due to varying quantities. If a screwdriver needs to be replaced, it is automatically detected by the system. It is no longer necessary to call up the plant data directly on site. And unauthorized intervention by third parties is detected at all times. From an economic point of view, the advantages are maximum utilization of service life and simultaneous prevention of wear-related downtime. We also set a new milestone in transparent documentation and calculation of key figures, as the data can be retrieved and evaluated at any time in the long term.

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