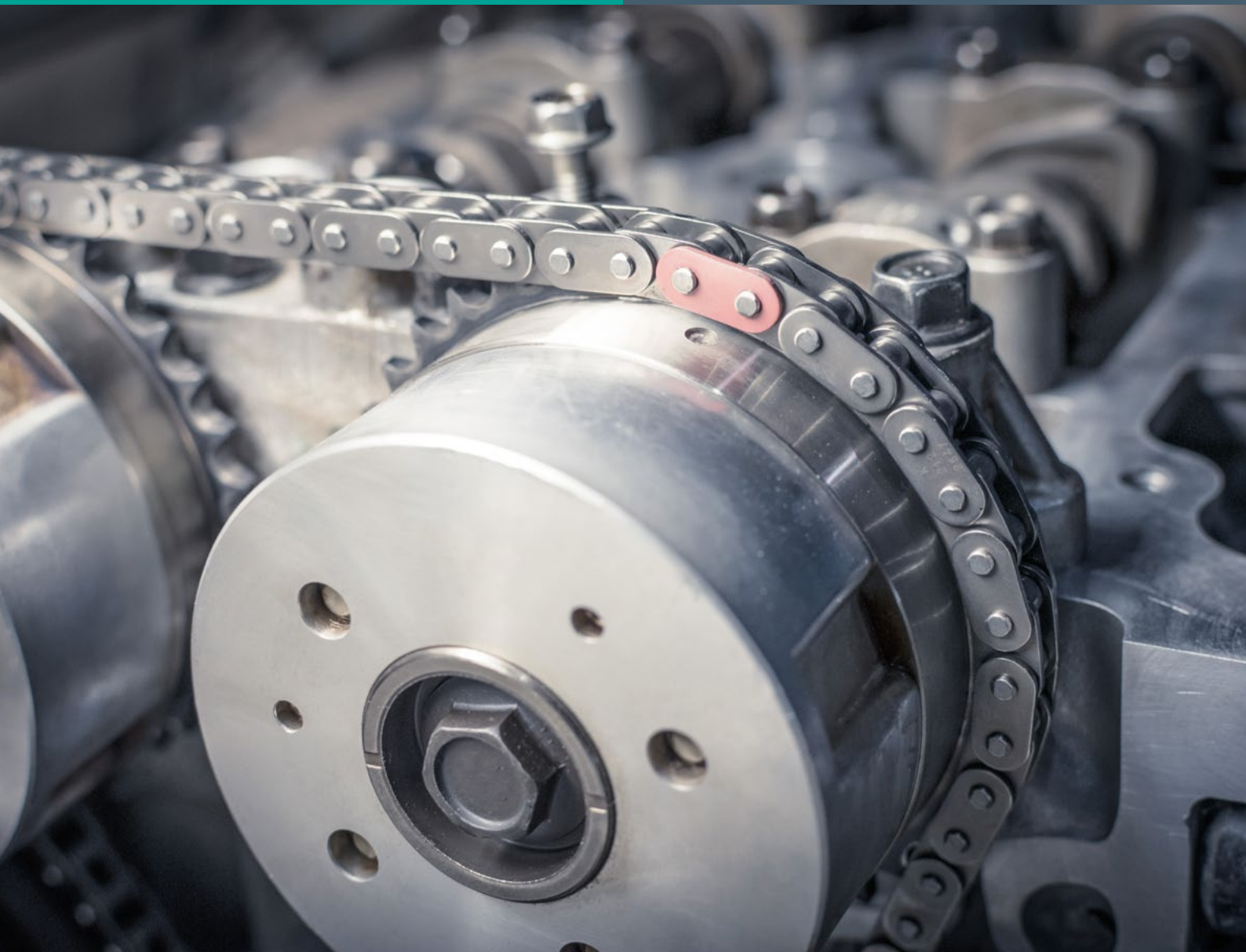


# Reliable Detection in the Production of Motor Chain Tensioners

The PMI120-F90 Positioning System Safeguards the Automated Manufacturing Process

## At a Glance

- The PMI120-F90 positioning system monitors whether motor chain tensioners are mounted correctly
- Reliable detection of a wide range of housing lengths and diameters
- Noncontact, wear-free measuring system with high resolution and repeat accuracy
- Robust IP67 housing for harsh ambient conditions



## The Application

Motor chains that are continuously tightened work flawlessly up to a maximum wear elongation of two percent. If motor chains are not tightened, the slack side starts to sag and the chain takes on an unsteady course that can cause wear. If the chain tension decreases too much, this can damage the motor.

Chain tensioners are used in motors to tighten the control chain of a camshaft drive. This ensures that the motor runs smoothly and increases the service life of both the chain and the motor over the long term.

## The Goal

Various chain tensioners of different lengths and diameters for use in the automotive industry are assembled by robots in production lines. The manufacturing process should run without any human input. This means that the testing tools for mounting must be very flexible and able to reliably detect all different sizes of motor chain tensioners.

## The Solution

The high resolution and repeat accuracy of the PMI120-F90-IE8-V15 inductive positioning system makes it ideal for this application requirement, as the sensor continuously and reliably determines the housing lengths and diameters. The size detected by the sensor is reported to the variable gripper of the robot, which then inserts the appropriate spring and tappet into the sleeve and compresses everything.

The assembly is monitored closely during the manufacturing process. To determine the spring tension, a testing device compresses the tappet of the motor chain tensioner at a defined pressure. This pressure causes the tappet to sink into the housing. An additional PMI120-F90-IE8-V15 determines the offset using the testing device.

## The Benefits

Using the highly flexible PMI120-F90-IE8-V15 positioning system, a wide variety of motor chain tensioners can be installed quickly, with virtually no changeover times when switching to other chain tensioners. The robust housing with IP67 protection means that noncontact, wear-free sensors can be used even in harsh ambient conditions.

### Technical Features

- Measuring length: 120 mm
- Output type: 2 PNP switching outputs, normally open, reverse polarity protected, short-circuit proof
- Adjustable switch points
- IP67 rating
- Ambient temperature: -25 °C ... 70 °C
- Versions with IO-Link are available (PMI\*F90\*IO\*)

