A new definition of thread testing:

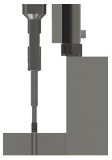
▶ Test nutrunner with changeable thread gauges and advanced DSM measuring technique.

The use of thread gauges ensures that your internal and external threads are checked precisely.
The integration of a DSM test nutrunner in combination with intelligent measurement technology opens up a new dimension in thread testing. This enables not only automated and stable test sequences, but also comprehensive documentation of the entire process.

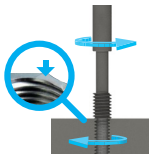
Thanks to the modularity of our test nutrunner and control system, its equipment can be flexibly adapted to the respective requirements. Whether it's the nutrunner itself, the low-backlash output adapted to it, an attachable position sensor or the execution of the thread gauge – our testing system enables efficient inspection of all threads in your production process.

▶ Example sequence of a thread test:

1 The nutrunner is moved via a feed unit until the thread plug gauge rests on the thread. Then it continues to feed the nutrunner until the stop reaches the reference surface and the output is compressed.

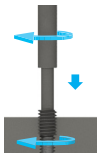


2 In the first test stage, the nutrunner is rotated against the turn-in direction. Thereby, a stroke measurement is used to detect the jump from the thread entry to the first thread turn in order to detect the start of the thread.

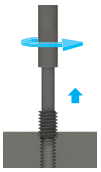


3 In the next step, the nutrunner turns the thread plug gauge into the thread in the turn-in direction. This can include checking the thread through different procedures such as friction coefficient testing or depth measurement.

→ For additional information, please see page 2



4 Finally, the nutrunner turns the thread plug gauge out of the thread, and the nutrunner is moved back to the starting position via the feed unit.



▶ Every step of the testing process is precisely controlled, monitored and evaluated by our control system. The results and graphic data of the thread test are documented and are available for further analyses.

(A) Nutrunner DS 34 series

Servo motor, gear unit with precision gear wheel bearing, digital torque sensor and absolute angle encoder, illuminated field for status display

(B) Low-backlash spring output

30 mm or 50 mm spring deflection, optional with adjustable spring force, with angle compensation

(C) Position sensor module

Magnetic field sensor for detecting the start of the thread and for depth measurement, assembly kit, optional with stop for easy positioning on the reference surface

(D) Thread gauge

Changeable adapters with a thread plug gauge or thread ring gauge for different thread sizes

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Thread testing nutrunner design, equipment variants, system concept

DS 34 Nutrunner

Torque measurement
Accuracy ± 0,5 % of final value

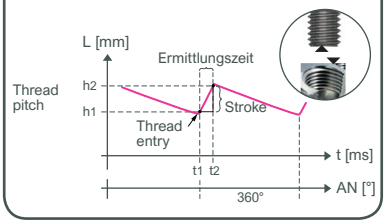
Angle of rotation measurement
Resolution 0,1°

Executions:

2,5 Nm (0,5 - 2,5 Nm)
5 Nm (1 - 5 Nm)
10 Nm (2 - 10 Nm)
15 Nm (3 - 15 Nm)

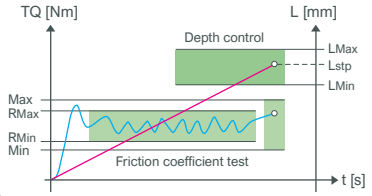
Stroke measurement – detection of the thread entry

It is rotated against the turn-in direction to measure the stroke from the thread entry into the first thread with a sensor.



Depth measurement

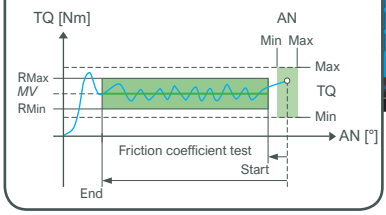
This function allows you to control the thread depth and switch off the nutrunner when a defined depth is reached.



Tightening control system MultiPro 3G

Friction coefficient test

The frictional torque is determined when the thread gauge is turned in; the mean value, the range mean, or the median can be used to evaluate the thread.



... the thread test sequence can be extended with additional functions, such as filter, envelope curve, gradient detection

Position sensor module

Magnetoresistive sensor for the testing processes thread entry detection and depth measurement

Stop on a reference surface according to customer specification

Low-backlash spring output

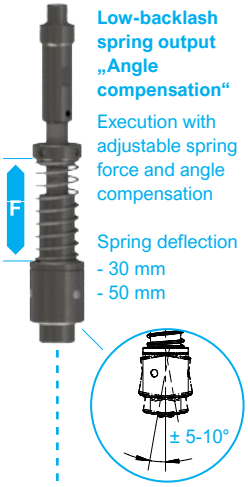
Minimal to no axial play between nutrunner and thread plug gauge / thread ring gauge during thread testing

Spring deflection
- 30 mm
- 50 mm

Low-backlash spring output „Force adjustable“

Execution with adjustable spring force for adjusting the contact pressure

Spring deflection
- 30 mm
- 50 mm



Low-backlash spring output „Angle compensation“

Execution with adjustable spring force and angle compensation

Spring deflection
- 30 mm
- 50 mm

Thread test nutrunner

(mounted on a feed unit)

Changeable ➡ 3K

Easy replacement from one thread size to another via 3K connection technology

Adapter with thread plug gauge

for internal thread, thread size according to customer specification

Adapter with thread ring gauge

for external thread, thread size according to customer specification

▶ The strength of threaded bolts can also be checked at the same time!

▶ Fact

Thread gauges enable a direct check of whether the thread is cut in accordance with the standard.

In contrast to the conventional method, the testing process is carried out constantly, while the thread is tested using various methods and the results are documented.

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