INNOVATIVE TEST & MEASUREMENT SYSTEMS

DOCUMENTATION / FAQ

IPX9 or IPX9K - Different designations for a test?

Rev. 00

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1. Question

IPX9 or IPX9K - Different designations for same test?

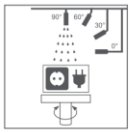
2. A nswer

The different designations for the high-pressure cleaner test originate from two different test standards. The designation IPX9 belongs to the test standard DIN EN 60529 and the designation IPX9K to the test standard ISO 20653.

ISO 20653 describes the IPX tests for applications in the automotive sector.
The IPX9K test has been included in ISO 20653 for a very long time, as cleaning High-pressure cleaners have been used on vehicles for a very long time.

It was not included in DIN EN 60529 until the September 2014 version.
The subsequent K has been omitted to avoid confusion with existing additional letters in the standard DIN EN 60529.

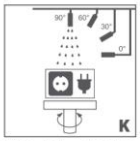
The two summaries below show that the test regulations differ only in a few details in the specification of the test parameters.



Water jets with high pressure and high water temperature

IP X9

- DIN EN 60529: 15l/min
- Small housings (< 250mm) centred on turn-table / Align spray nozzles with outer con-tour / Distance nozzle - DUT: 125mm +/- 25
- Turntable: 5rpm
- Water temperature: 80°C +/- 5
- Test duration: 30s per position (0/30/60/90°)



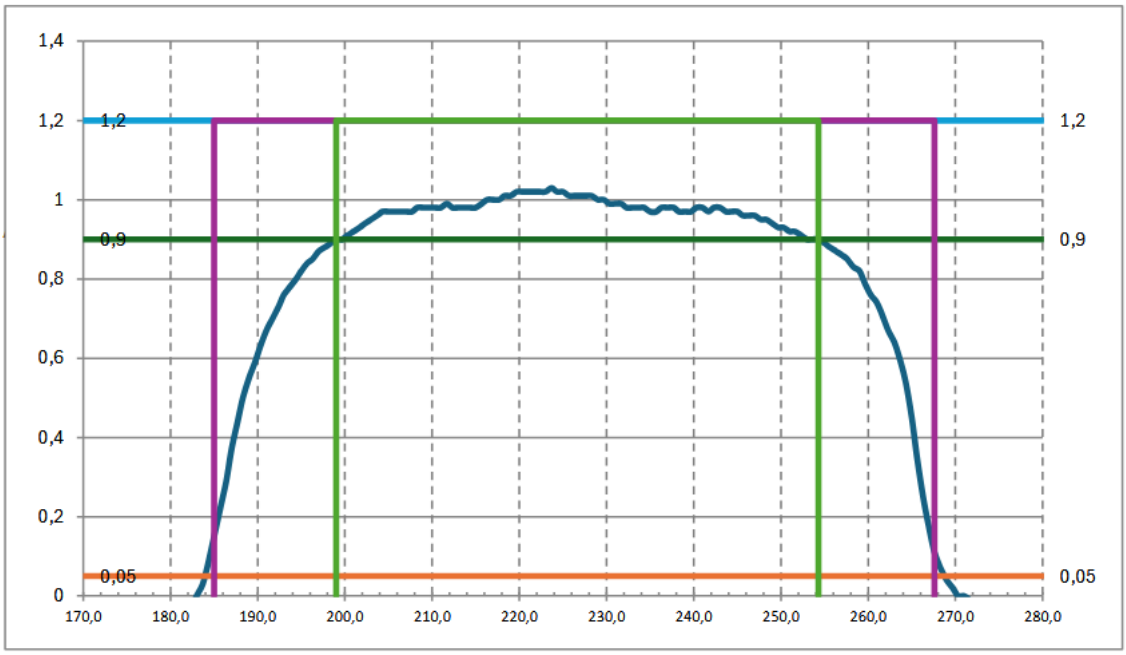
Water jets with high pressure and high water temperature

IP X9K

- ISO 20653: 14-16l/min at approx. 80-100bar water pressure
- Distance nozzle - DUT: 100-150mm / Align spray nozzles to outer contour
- Turntable: 5rpm
- Water temperature: 80°C +/- 5
- Test duration: 30s per position (0/30/60/90°)

In the current editions of both test standards, the selection of nozzles is described by means of a special measurement. The high-pressure water jet generated by the nozzle is moved via a force transducer. This produces a diagram that shows the force progression of the high-pressure water jet.

This force curve must lie in the middle over a certain length in a defined force range to meet the requirements of the standard. The following diagram shows a sample measurement.



3. Note on ITS products

The iTS water test chambers of the SPK series and the wet room solutions always meet both test standards in their standard configuration. This means that both DIN EN 60529 and ISO 20653 can be fulfilled.

All nozzles in iTS chambers are measured and selected in accordance with the specifications of DIN EN 60520 and ISO 20653. The certificates are only supplied with the nozzles when a measurement is ordered.