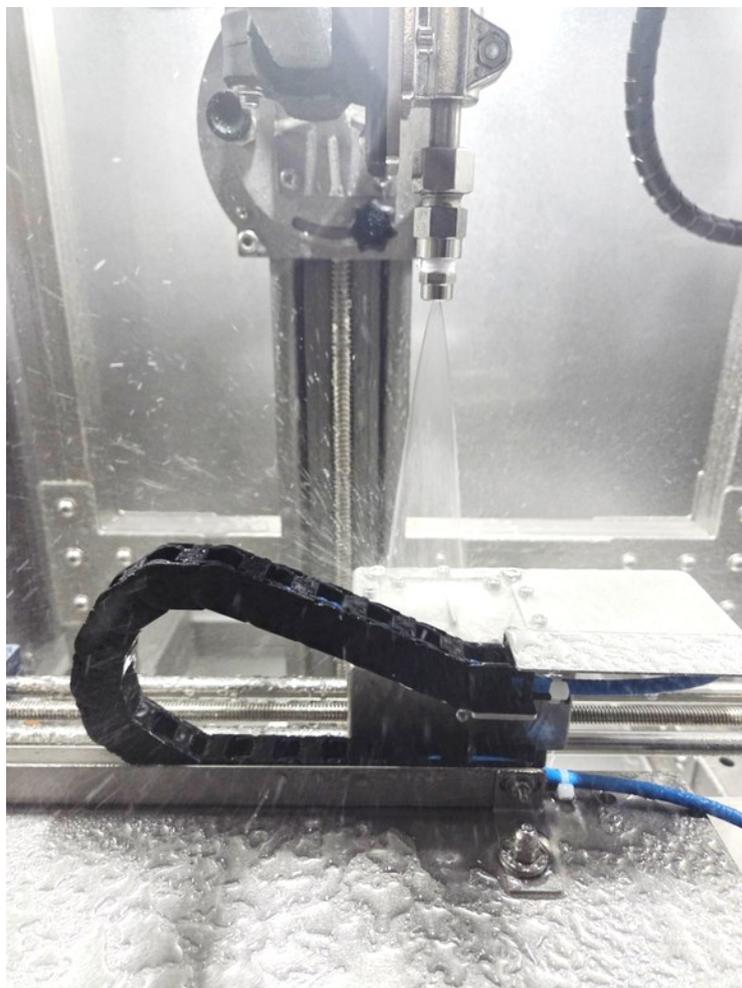


# FORCE MEASUREMENT OF A FLAT SPRAY NOZZLE ACCORDING TO DIN EN 60529 / ISO 20653



## STANDARDS AND REGULATIONS

The most important standards which refer to the IP X9 / IP X9K tests with a flat spray nozzle, in addition to the nozzle geometry, specify a verification of the jet force distribution of the water jet.

With a measured and approved nozzle, a standard-compliant test can then be reliably carried out in an ITS test system.

Standards	Status	Jet force distribution of the water jet	iTS procedure
<b>DIN EN 60529</b>	09 / 2014	Mandatory	Force measurement incl. protocol
<b>ISO 20653</b>	08 / 2023	Mandatory	Force measurement incl. protocol
<b>LV 124</b>	2013/2015	Refers to DIN EN 60529 / ISO 20653	Force measurement incl. protocol

## NOZZLE MEASUREMENT PROCEDURE

The flat spray nozzles are registered and measured individually on the calibrated test system. The numbering of the nozzle and the associated protocol ensure that the standard-compliant design of the nozzle can be reliably traced.

Number	Name	Quantity	Checkbox
<b>SPK.OP-600 (12264)</b>	Flat jet nozzle according to DIN EN 60529 / ISO 20623		<input type="checkbox"/>
<b>SPK.OP-601 (12263)</b>	Force measurement of a flat jet nozzle according to DIN EN 60529 / ISO 20653		<input type="checkbox"/>



## NOZZLE MEASUREMENT PROCEDURE

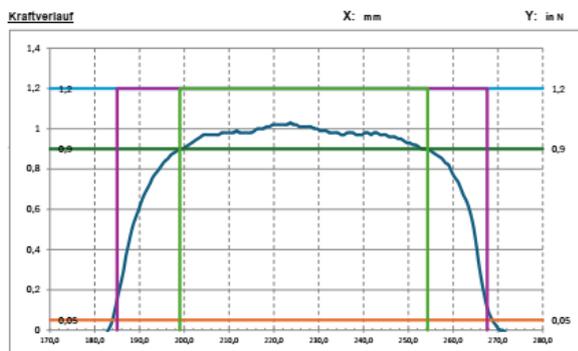
The flat spray nozzle is installed in the test system and operated with specified test parameters. A sensor installed in a movable carriage is moved under the water jet so that the force distribution can be recorded. This force measurement is listed in the test report in the form of a diagram, among other things.

Kalibrierprotokoll Düsenprüfung



Zertifikat Nr. CC23-ITS-Muster

### Testablauf und Werte



### Bewegung

Position für Strahlanfang	185,0 mm
Position für Strahlende	267,6 mm
Berechnete Strahlänge	82,6 mm
Strahlwinkel	(berechnet) 30,79 °
Ermittelte Position für Wirkstrahlanfang	199,0 mm
Ermittelte Position für Wirkstrahlende	254,3 mm
Berechnete Wirkstrahlänge	55,3 mm
Wirkstrahlwinkel	(berechnet) 20,89 °
Kraftverlauf innerhalb dieser Breite	
Max. Kraft	1,03 N

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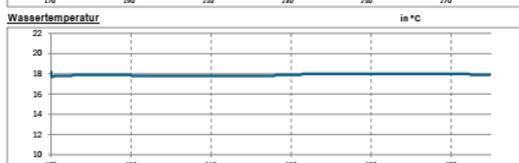
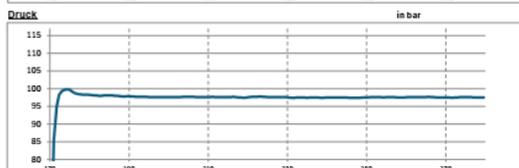
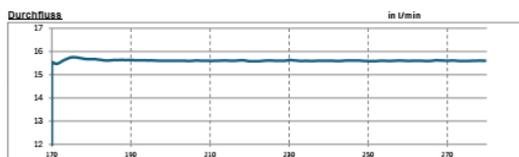
Kalibrierprotokoll Düsenprüfung



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### Testablauf und Werte

Ø Durchfluss	15,6 l / min
Max. Durchfluss	15,63 l / min
Min. Durchfluss	15,58 l / min
Ø Druck	97,56 bar
Max. Druck	97,80 bar
Min. Druck	97,40 bar
Ø Temperatur	17,9 °C
Max. Temperatur	18,0 °C
Min. Temperatur	17,8 °C



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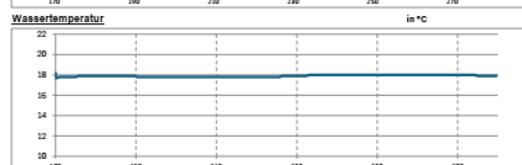
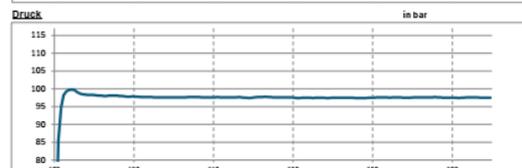
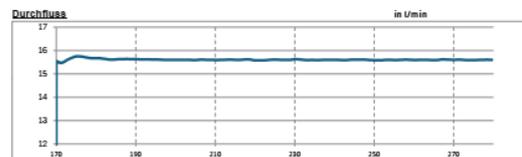
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## NOTE

Subject to design and technical changes in the interests of technical development. This applies to the entire technical description.

### **ITS GmbH**

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**VERSION**

Version	Reason for change	Approved on	Approved by
Rev 00	New	02.03.2026	CM