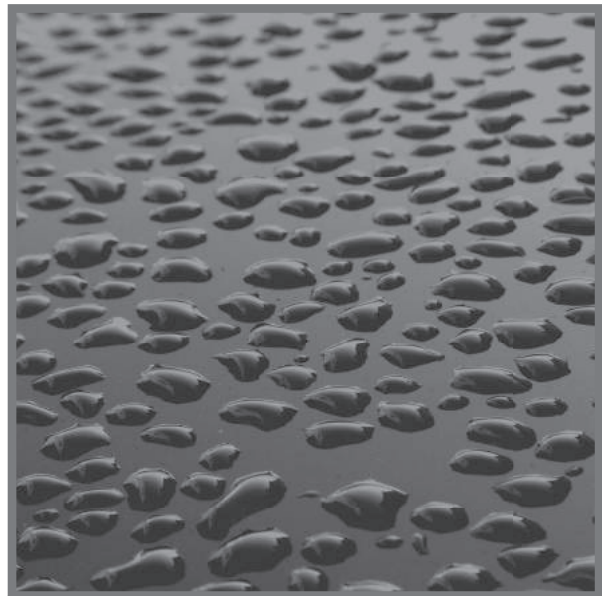


# Quality Through Innovative Test Engineering

**IP Protection Rating Tests**  
**Tests with dust and splashing water**







# Spashing water tests - tests that are as tough as the real world

## SPK Splashing Water Chambers

SPK series splashing water chambers from iTS enable the testing of IP protection ratings IPX1-IPX9K pursuant to all conventional standards. The basis component of this testing system is the water-tight cabin with the rotary plate for mounting the test piece as well as the equipment for the tests pursuant to IPX3 and IPX4.

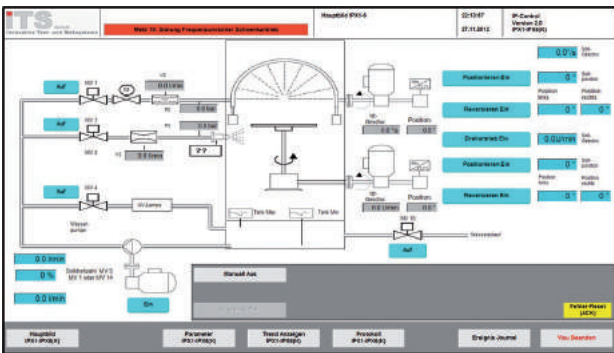
For additional test requirements, the splashing water chamber can be expanded through options, which are composed from your product requirements. Subsequent retrofitting is also possible.

With the SPK splashing water chamber, all tests can be performed fully automatically. In the process, the iTS controller with touch panel allows for ease of use. Parameter sets are stored in the iTS controller for all standard IP protection rating tests. In the case of non-standard tests, the operator can parameterise, store, and subsequently test individual test routines at any time.

The automatic recording of test data and the automatic creation of a test protocol after completion of a test provide for comfortable and secure documentation of the test.



SPK R400 splashing water chamber



SPK series operating window



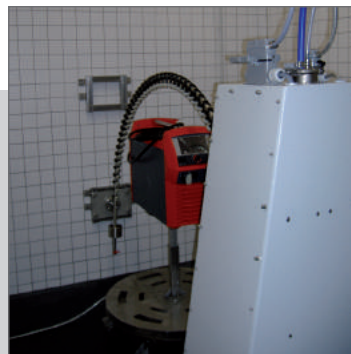
SPK R400 splashing water chamber with tunnel attachment

### Expansion stages of SPK splashing water chambers

- IPX1 / IPX2 Dripping device (option)
- IPX3 / IPX4 Pivoting elbow (basic feature)
- IPX4 (K) Pivoting elbow with 0.8 mm Ø nozzles (option)
- IPX5 / IPX6 (K) Jet nozzle in the tunnel attachment (option)
- IPX9K High-pressure lances (option)

### Special features of the SPK series

- Data recording (test protocol)
- Tests pursuant to JIS and NEMA/UL
- Tests pursuant to automobile factory standard
- Individual testing room dimensions
- Space solutions



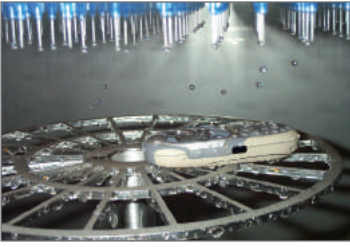
Space solution IPK 3/4



Space solution IPX9K



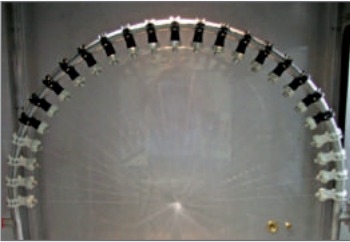
We would be happy to show you our **spashing water chambers**. Just let us know.



#### □ IP X1 / X2

**Simulates, e.g. the use in light rain falling partially at an angle.**

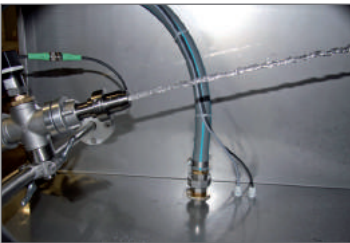
- Drip nozzles with quick-release fastener
  - Adjustable droplet quantity via a flow meter
- Dripping devices are also available as an individual solution DD.



#### □ IP X3 / X4

**Simulates, e.g. the use during a strong rainstorm.**

- Fine adjustment of the direction of the nozzle stream via a ball joint
  - Freely adjustable pivoting angle via the ITS controller
  - The pivoting elbow can be easily cleaned
  - Cleaning with compressed air is possible after the end of the test
- Respectively differing sizes of pivoting elbows can be used in the splashing water chambers of the SPK series.



#### □ IP X5 / X6

**Simulates, e.g. cleaning with a jet of water – soft or powerful jet.**

- Rapid adjustment of the nozzle in the tunnel
  - Automatic test start following entry of the water quantity in the ITS controller
- The test piece is located on the rotary plate in the splashing water chamber. This test is conducted depending on the test requirement with the attachable tunnel and the various jet nozzles.



#### □ IP X9K

**Simulates, e.g. cleaning with a pressure washer.**

- 4 fixed lances or 1 pivoting lance can be optionally integrated in the SPK.
- Smart hot water supply enables fully continuous operation
  - 4 fixed lances: individual switching of the nozzles via the ITS controller enables precise testing
  - 1 pivoting lance: the test piece is impinged with water from any desired direction



#### □ IP X7 / X8

**Simulates brief immersion or continual submersion.**

- Continuous observation of the test piece is possible
  - A cable control simplifies the immersion and emergence of the test piece
  - Specifically designed weights compensate the buoyancy of the test piece
- Immersion tanks are available as an individual solution.

#### □ Service, Maintenance & Calibration

- Servicing by our experienced service technicians in the event of technical problems
- On-site customer training
- Individual modernisation of existing systems for efficient and optimised tests
- Regular maintenance for the highest level of operational safety: Inspection and functionality testing as well as replacement service of parts subject to wear
- Professional calibration of measurement data recorders: Calibration pursuant to DKD / DAkkS, factory calibration pursuant to DIN 17025, factory inspection

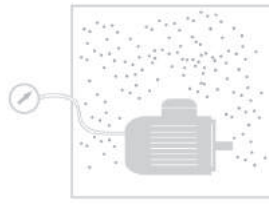


You can find further information about our testing devices at [www.its-gmbh.de](http://www.its-gmbh.de).





**IP 5X**  
 Test: "Dust protected"  
 Dust chamber  
 Test specification: 2 kg/m<sup>3</sup>  
 Test duration: 8 hrs.



**IP 6X**  
 Test: "Dust tight"  
 Dust chamber with low pressure equipment  
 Test specification: 2 kg/m<sup>3</sup>  
 Test duration: 2 hrs. / max. of 8 hrs.  
 Low pressure on the test piece: 20 mbar



**IP X1**  
 Dripping water test  
 Dripping device  
 Test specification: 1 mm/m<sup>2</sup>/min.  
 Test duration: 10 min.



**IP X2**  
 Dripping water test under 15°  
 Dripping device with a tilting table  
 Test specification: 3 mm/m<sup>2</sup>/min.  
 Test duration: 4x2.5 min.  
 2.5 minutes per tilt position



**IP X3**  
 Spraying water test  
 Pivoting pipe or spray head  
 Test specification: 0.07 litres/min. per nozzle  
 Test duration: 10 min.  
 Pivoting angle: +/- 60°



**IP X4**  
 Spraying water test  
 Pivoting pipe or spray head  
 Test specification: 0.07 litres/min. per nozzle  
 Test duration: 10 min.  
 Pivoting angle: +/- 180°



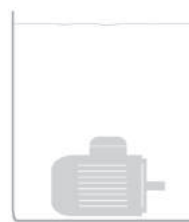
**IP X5**  
 Water jet test  
 Water jet nozzle  
 Inner Ø of nozzle: 6.3 mm  
 Test specification: qv = 12.5 litres/min.  
 p ~ 0.3 bar  
 Test duration: 1 min./m<sup>2</sup>  
 Minimum of 3 min.



**IP X6**  
 Powerful water jet test  
 Powerful water jet nozzle  
 Inner Ø of nozzle: 12.5 mm  
 Test specification: qv = 100 litres/min.  
 p ~ 1 bar  
 Test duration: 1 min./m<sup>2</sup>  
 Minimum of 3 min.



**IP X7**  
 Temporary immersion  
 Immersion tank  
 Depth: < 1 metre  
 Test specification: < 150 mm  
 Water column above the test piece  
 Test duration: 30 min.



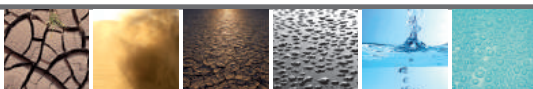
**IP X8**  
 Continuous immersion  
 Immersion tank  
 Depth: < 1 metre  
 Test specification: < 150 mm  
 Water column above the test piece  
 Test duration: specific to application



**IP X9K**  
 Test with a flat-fan spray nozzle  
 Flat-fan spray nozzle and rotary plate  
 Test specification: qv = 14-16 litres/min.  
 p = 80-100 bar  
 Tw = +80° +/- 5°  
 Test duration: 30 seconds per position  
 The test simulates cleaning with a steam jet nozzle.



**Special test**  
 Do you have other requirements for your products? We will develop an individual test plan for your technical problem. Let us take care of your testing needs!





## iTS Your Provider for Innovative Measurement and Test Engineering

Our family-operated company has established itself with systems for IP protection rating testing and individual special testing equipment. With decades of experience in widely differing test applications, our interdisciplinary team of engineers has established future-oriented know-how. In this context, our services range from manual testing devices for laboratory operation to fully automatic testing systems in production.

### Simulation of Dust and Splashing Water

Your products will be exposed to the most adverse environmental conditions. Door locks and explosion-proof components must work faultlessly even in extremely dusty environments and sensors and electrical equipment must likewise defy strong rains. We will tailor the iTS testing equipment from our IP modular system precisely to these specific requirements for your products.

Do you have special requirements for your products?

We will develop an individual test plan for your technical problem.

### Quality Assurance Offers You Competitive Advantages

For this reason, many testing institutes and customers from the automotive supply and electrical industry as well as engineering service providers rely on our solutions.

Get in touch with us!

Your point of contact

