



**Valve tests according to API 641, API 607,  
DIN EN ISO 15848-1, DIN EN ISO 10497,  
VDI 2440 and user defined procedures**

**SERVICE OFFER**

Issue: January 2020

## **Valve Test according to ISO 15848-1 (dated July 2017)**

### **Test according to ISO 15848-1 for isolating valves (CO1)**

- Valve size: max. DN150/PN250 bzw. DN250/PN25
- Assembly of the valve in the test rig
- (1) Preliminary test at RT: Leakage measurement at the valve stem and the body seal
- (2) 50 mechanical cycles at RT, leakage measurement at the valve stem
- (3) Adjust test temperature, leakage measurement at the valve stem
- (4) 50 mechanical cycles at test temperature, leakage measurement at the valve stem
- (5) Cooling down to RT, leakage measurement at the valve stem
- Repeat steps (2) to (4)
- (6) Cooling down to RT, 5 mechanical cycles at RT, leakage measurement at the valve stem and the body seal

### **Test according to ISO 15848-1 for isolating valves (Extension CO2)**

- Continuation of the test after finish CO1
- (2) 795 mechanical cycles at RT, leakage measurement at the valve stem
- (3) Adjust test temperature, leakage measurement at the valve stem
- (4) 500 mechanical cycles at test temperature, leakage measurement at the valve stem
- (6) Cooling down to RT, leakage measurement at the valve stem and the body seal



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#### Test according to ISO 15848-1 for isolating valves (Extension CO3)

- Continuation of the test after finish CO2
- (2) 500 mechanical cycles at RT, leakage measurement at the valve stem
- (3) Adjust test temperature, leakage measurement at the valve stem
- (4) 500 mechanical cycles at test temperature, leakage measurement at the valve stem
- (6) Cooling down to RT, leakage measurement at the valve stem and the body seal

#### Test according to ISO 15848-1 for control valves (CC1)

- Valve size: max. DN150/PN250 bzw. DN250/PN25
- Assembly of the valve in the test rig
- (1) Preliminary test at RT: Leakage measurement at the valve stem and the body seal
- (2) 5,000 mechanical cycles at RT, leakage measurement at the valve stem
- (3) Adjust test temperature, leakage measurement at the valve stem
- (4) 5,000 mechanical cycles at test temperature, leakage measurement at the valve stem
- (5) Cooling down to RT, leakage measurement at the valve stem
- Repeat steps (2) to (4)
- (6) Cooling down to RT, leakage measurement at the valve stem and the body seal



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#### Test according to ISO 15848-1 for control valves (Extension CC2)

- Continuation of the test after finish CC1
- (2) 20,000 mechanical cycles at RT, leakage measurement at the valve stem
- (3) Adjust test temperature, leakage measurement at the valve stem
- (4) 20,000 mechanical cycles at test temperature, leakage measurement at the valve stem
- (6) Cooling down to RT, leakage measurement at the valve stem and the body seal

#### Test according to ISO 15848-1 for control valves (Extension CC3)

- Continuation of the test after finish CC2
- (2) 20,000 mechanical cycles at RT, leakage measurement at the valve stem
- (3) Adjust test temperature, leakage measurement at the valve stem
- (4) 20,000 mechanical cycles at test temperature, leakage measurement at the valve stem
- (6) Cooling down to RT, leakage measurement at the valve stem and the body seal

### Test according to VDI 2440 (dated 2000)

#### Valve test procedure acc. to VDI 2440

- Valve size: max. DN150/PN250 bzw. DN250/PN25
- Assembly of the valve in the test rig
- Preliminary test at RT: short term leakage test
- Heating up to max. 400 °C
- Stem cycles at test temperature (1,000 pcs.)
- Tightness test 24 hours, test medium Helium, test pressure max 160 bar,



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- Disassembly after test
- Evaluation of test results

### **Additional options for valve tests acc. to VDI 2440**

- Additional stem cycles, 1,000 pcs.
- Additional temperature cycle
- Additional leakage measurement 24 h test medium Helium, test pressure max 160 bar,
- Additional charge medium nitrogen
- Additional charge medium methane

## **Valve Test according to ISO 15848-2 (dated November 2015)**

### **Test according to ISO 15848-2 Production acceptance test of valves**

- Test Medium: Helium (He)
- Test pressure: 6 bar (unless otherwise agreed between - manufacturer and customer)
- Test temperature: RT
- Fitting size max. DNXXX / PNXXX
  
- Installation of the valve in the test bench
- (1) Concentration measurement at the stuffing box packing with the sniffing method
- (2) 5 times full opening and closing of the pressurized valve
- (3) Concentration measurement at the stuffing box packing with the sniffing method
- (4) Concentration measurement at the body seal(s) with the sniffing method



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### Valve Test according to API 641 (dated 2016)

#### Test according to API 641

- Valve type: ?
- Medium:  $\geq 97$  % Methane (CH<sub>4</sub>)
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- Assembly of the valve in the test rig
- (1) Preliminary function test
- (2) leakage measurement at RT
- (3) 100 mechanical cycles at test temperature, leakage measurement dynamic and static sealings
- (4) Adjust test temperature, leakage measurement at the body sealing
- (5) 100 mechanical cycles at test temperature, leakage measurement dynamic and static sealings
- (6) Cooling down to RT - Repeat steps (2) to (6) two times
- (7) leakage measurement at the body sealing at RT
- (8) 10 mechanical cycles at test temperature, leakage measurement dynamic and static sealings
- (9) Function test

### Fire Safe Test on valves

#### Fire Test according to API 607 (dated 2016)

- Medium: Water
- 
- Assembly of the valve in the test rig
- (1) Function test
- (2) Fire ignition of the valve (30 min)
- (3) Cooling down to RT
- (4) Function test of the valve and seat gasket



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## **Fire Test according to DIN EN ISO 10497 (dated June 2010)**

- Medium: Water
- 
- Assembly of the valve in the test rig
- (1) Function test
- (2) Fire ignition of the valve (30 min)
- (3) Cooling down to RT
- (4) Function test of the valve and seat gasket

### **Preparation**

- of the valve (vacuum chamber, connection to the actuator, flange sealings, mounting temperature sensors)
- of the test rig (gas connection, heating, isolation)

### **Test Report**

- documentation of the boundary conditions
- compilation of the test results
- english or german

### **Certificate / Confirmation**

- only in conjunction with a test report
- same language as test report

Special tests, Leakage tests and long term tests on request.