

# ROHRTEST-4 v. 9.0

Tightness test system

for

Sewers, sewage pipes and pipe connections

acc. to EN 1610, SIA 190 / VSA

Separators, Collectors and Shafts

acc. to EN 1610, EN 858-1, EN 858-2, DIN 1999-100, DIN 4040-100,  
EN 12566-1, SIA 190 / VSA

Drinking water / waste water pressure pipes acc. to EN 805



## MESSEN NORD GmbH

Tightness test systems/ Inspection cameras  
Test vehicle equipment / Special software

Zum Forstthof 2  
D-18198 Stäbelow

Tel.: + 49 38207 / 656-0  
Fax: + 49 38207 / 656-66  
e-mail: [info@messen-nord.de](mailto:info@messen-nord.de)  
Website: [www.messen-nord.de](http://www.messen-nord.de)












<b>0.</b>	<b>Table of contents</b>	<b>Side</b>
<b>1.</b>	<b>Application of the test system</b>	<b>4</b>
1.1.	Water pressure-test / low-pressure	5
1.2.	Water pressure-test / high pressure	5
1.3.	Shaft and separator-test in the free-mirror-procedure	6
1.4.	Compressed air-test / sleeve-sample	8
<b>2.</b>	<b>Technical parameters</b>	<b>11</b>
3.1.	General business-parameters	11
3.2.	Measuring-equipment WATER / water supply	12
3.3.	Measuring-equipment AIR / compressed air-supply	13
3.4.	Measuring-equipment VACUUM / hypotension-production	14
3.5.	Measuring-equipment HIGH PRESSURE / high pressure-production	15
3.6.	Measuring-equipment SHAFT	16
3.7.	Measuring-precision of the measuring-facilities / calibration	18
<b>4.</b>	<b>Danger-prevention</b>	<b>20</b>
<b>5.</b>	<b>Installation</b>	<b>21</b>
5.1.	Installation	21
5.2.	Installation of the USB-Adapters	22
5.3.	Program-configuration	24
5.4.	Formation of the individual protocol-head	25
<b>6.</b>	<b>Test standards and parameters</b>	<b>27</b>
6.1.	Selection of the test procedure and the test standard	27
6.2.	Test with water / low-pressure	28
6.2.1.	Test parameters for tests of DIN EN 1610 (Water, low-pressure)	28
6.2.2.	Test parameters for tests of DIN 1999-100 (Water-level-tests for separators)	29
6.2.3.	Test parameters for tests of DIN 4040-100 (Water-level-tests for fat-separators)	33
6.3.	Test parameters for tests of DIN EN 805 (Water, high pressure)	36
6.4.	Test parameters for tests with compressed air	37
6.5.	Test parameters for special-tests	37
6.6.	Test parameters for sleeve-tests	38
6.6.1.	Tester administration	39
6.6.2.	Sleeve-test with reference-measurement	40
6.6.3.	Sleeve-tests of ATV/DWA M 143 slices 6	41

<b>7. Test-transaction</b>	<b>42</b>
7.1. Tests with measuring-equipment WATER	42
7.1.1. Preparatory works	42
7.1.2. Test with measuring-equipment WATER	43
7.2. Tests with measuring-equipment HIGH PRESSURE	44
7.2.1. Preparatory works	44
7.2.2. Test-transaction with measuring-equipment HIGH PRESSURE	45
7.3. Tests with measuring-equipment AIR	46
7.3.1. Preparatory works	46
7.3.2. Transaction of the test with compressed air	47
7.3.3. Test of tube-connections / sleeve-test	48
7.4. Tests with the measuring-equipment SHAFT	49
7.4.1. Preparatory works	49
7.4.2. Transaction of the test with the measuring-equipment SHAFT	50
<b>8. Data-concept</b>	<b>51</b>
8.1. Storage of the test reports	51
8.2. Project-administration	52
8.2.1. Transferred by data-continuances, updating of the project-administration	52
8.2.2. Summary from test reports to lists and overview-tables	52
8.3. Preparation and alteration of test report forms	55
8.3.1. Saving hierachy of test report forms	55
8.4. Data take over from test reports	58
8.5. Configuration of the option "GPS"	59
<b>9. Appliance-maintenance, calibrations and function-tests</b>	<b>60</b>
9.1. Appliance-check	60
9.2. Cleaning of the filter of the measuring-equipment WATER	60
9.3. Changeover to winter-business	61
9.4. Test of the appliance-function, own-control	61
9.5. Cleaning of the measuring-equipment SHAFT	61

## 1. Application of the test system

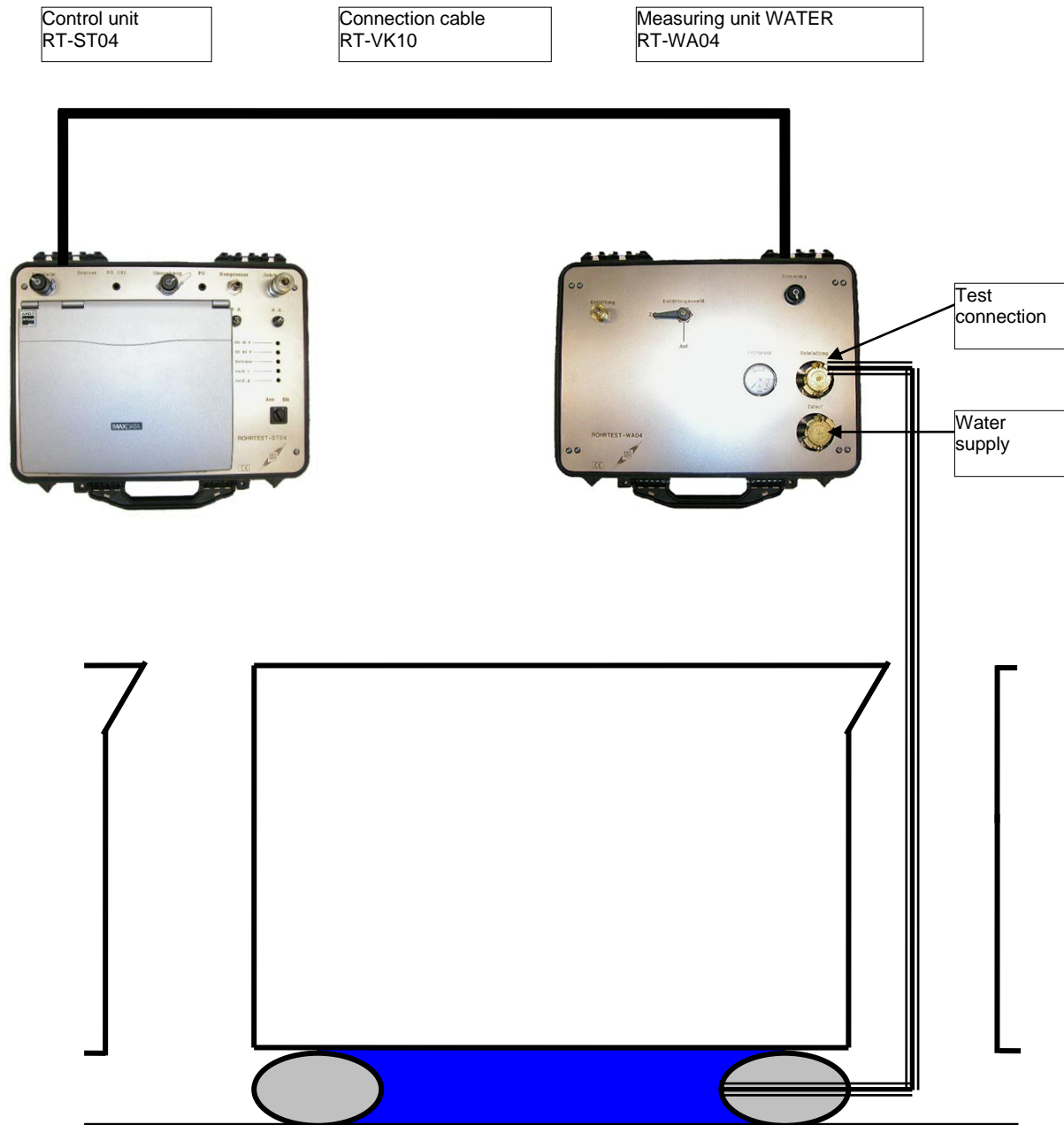
The test system ROHRTEST-4 allows the computer-aided, automated tightness test of sewage pipelines, muffs, shafts and separators after the test standards nationally binding for these installations. In the result of the test, standardized test reports are produced which document the test course and the test result.

You find a complete list of the test-specific system-components under 2. *System-components / delivery capacity*:

System-components	Test procedures
Control unit, integrated AIR/VACUUM (RT-ST04) 	This unit is required for all Test procedures, contains measuring-equipment for AIR / VACUUM tests, supply unit, data-transformers and test controller for all measuring-facilities Tests acc. to EN 1610 (L) i.e.
External measuring equipment AIR (RT-EXTL) 	External Filling and measuring unit for testing high pipe dimensions, application directly at the pipe fastener, makes filling procedure fast and save Tests acc. to EN 1610 (L) i.e.
Measuring-equipment SHAFT (RT-SP04) 	Shaft and separator-tests acc. to EN 1610, ATV/DWA M 143/6, EN 858-1, EN 858-2, DIN 1999-100, DIN 4040-100 i.e.
Measuring-equipment WATER (RT-WA04) 	Allows water loss tests by automatic supplying and measuring the lost water. Unit can keep up a given pressure or a level in connection with external sensors. Tests acc. to EN 1610 (W) i.e.
External water pressure sensor (RT-EXTW) 	Allows in connection with RT-WA04 the water loss test by keep up the water start level. Application of the pressure sensor directly at the pipe fastener. Tests acc. to EN 1610 (W) i.e.
External water pressure sensor (nozzle model) (RT-EXTWR) 	Allows in connection with RT-WA04 the water loss test by keep up the water start level. Application of the pressure sensor at the drain outlet. Tests acc. to EN 1610 (W) i.e.
Measuring-equipment HIGH PRESSURE (RT-HD04) 	Tests of DIN EN 805 as well as. the former Norm DIN 4279 (water, high pressure)
Air-distribution-unit (RT-LV04) 	Muffs and stand-tests with compressed air after ATV/DWA M 143/6, DIN EN 1610, Control of the tests and blister-pressure for Max. 4 Fasteners as well as a Junction test fastener
Junction test fastener (RT-MU04) 	Manually driven reel with connection-management 100 m to the Junction test fasteners over only one hose-management with interior-lying main lead for measuring-sensor, air-control and observation-camera Optional fade-in of the Test parameter into the video-picture

## 1.1. Water pressure-test / low-pressure

### Configuration A: Water pressure test at the closed system (fastened pipe)

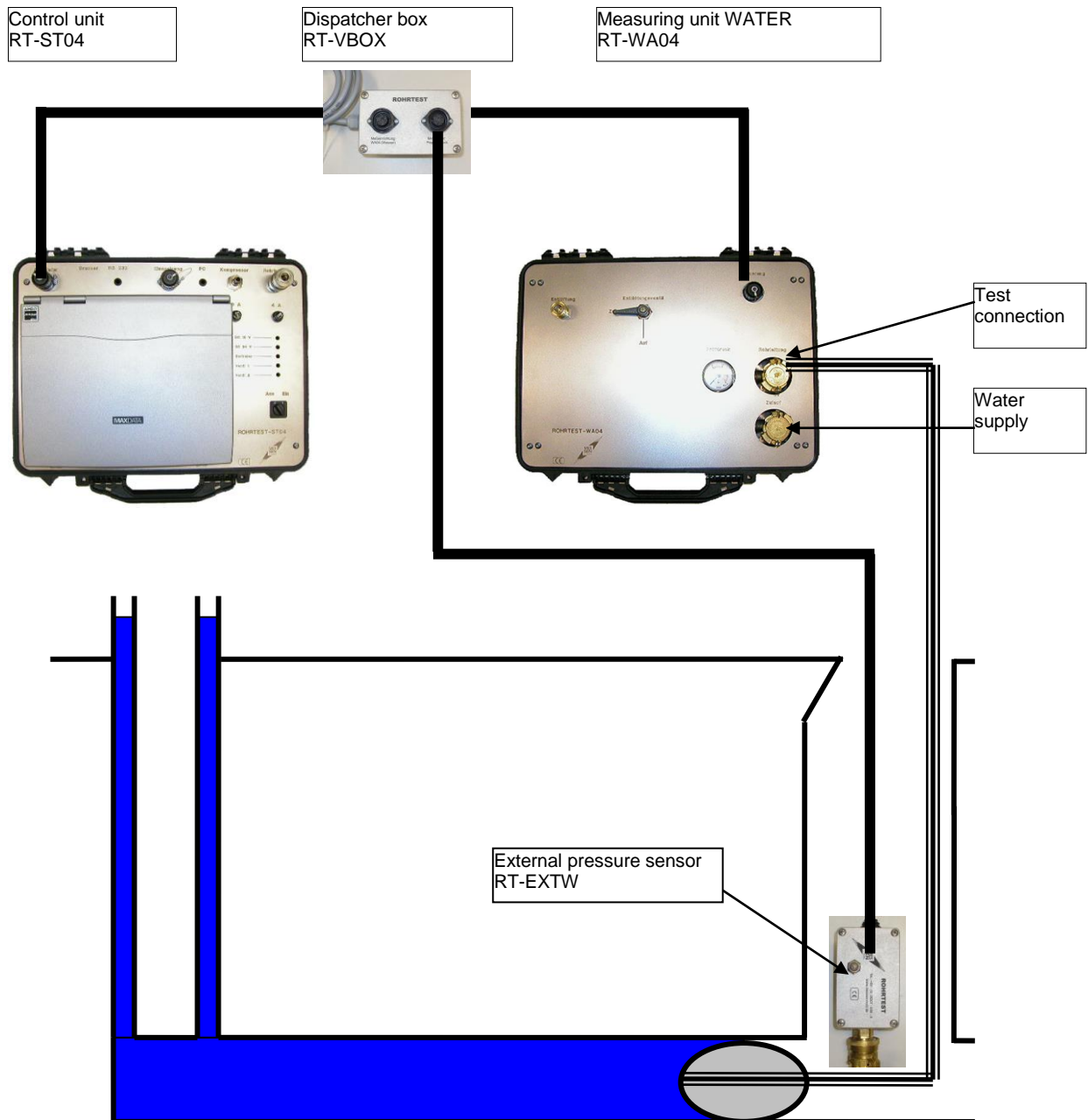


Standards:

- EN 1610 „W“
- DIN 1986 Teil 30
- DWA M 143 Teil 6
- SIA 190 / VSA
- ÖNORM B2503
- Special test procedure „W“

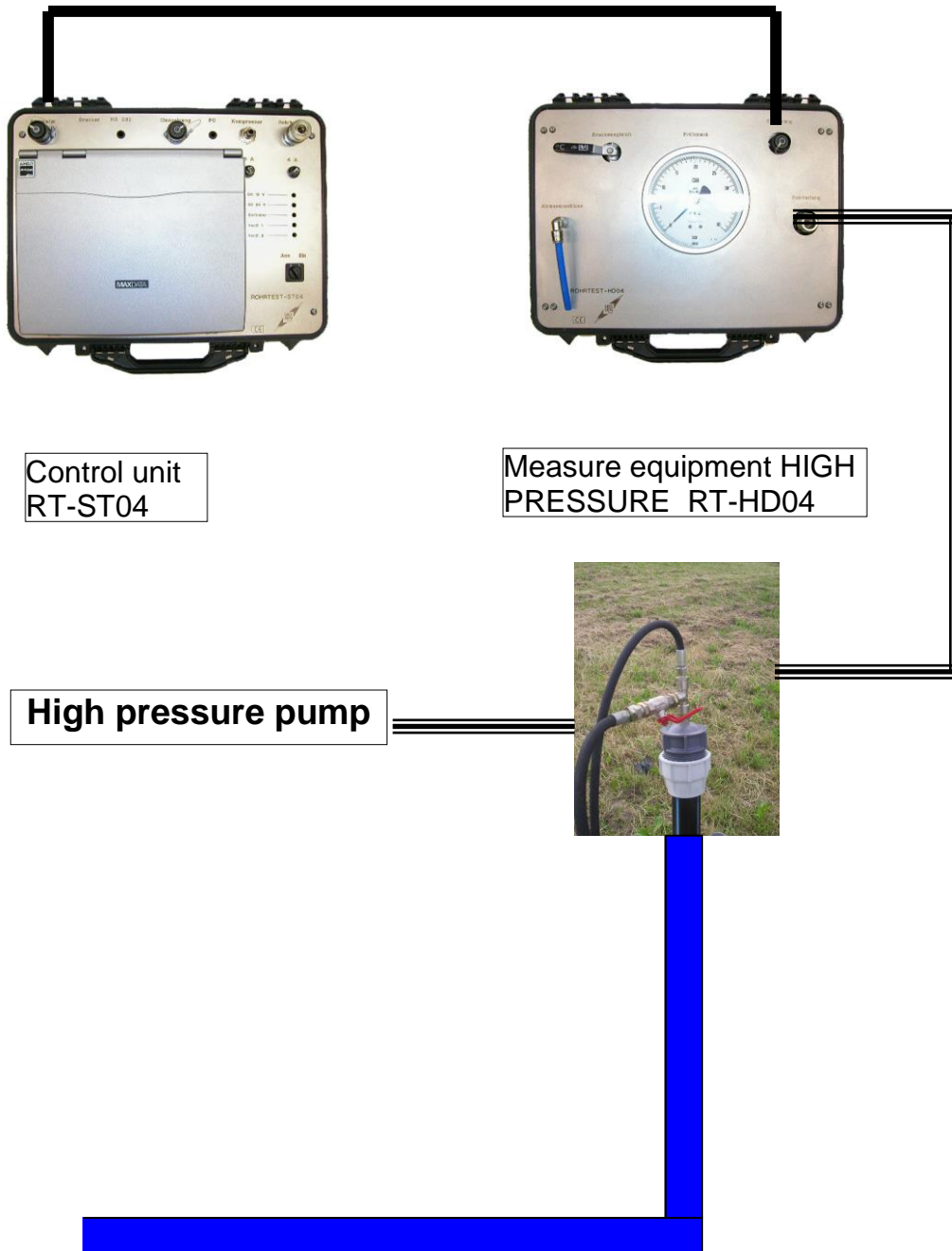
## Water pressure-test / low-pressure

### Configuration B: Water pressure test at the open system (open water column)



Standards: EN 1610 „W“  
 DIN 1986 Teil 30  
 DWA M 143 Teil 6  
 SIA 190 / VSA  
 ÖNORM B2503  
 Special test procedure „W“

## 1.2. Water pressure-test / high pressure

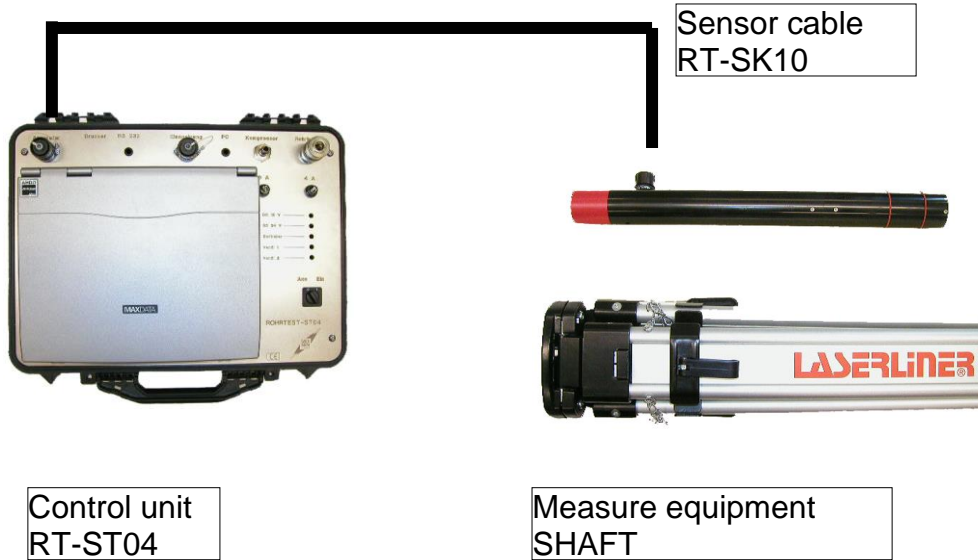


Test standards: EN 805  
DIN 4279 (become obsolete)  
Special test procedure "H"

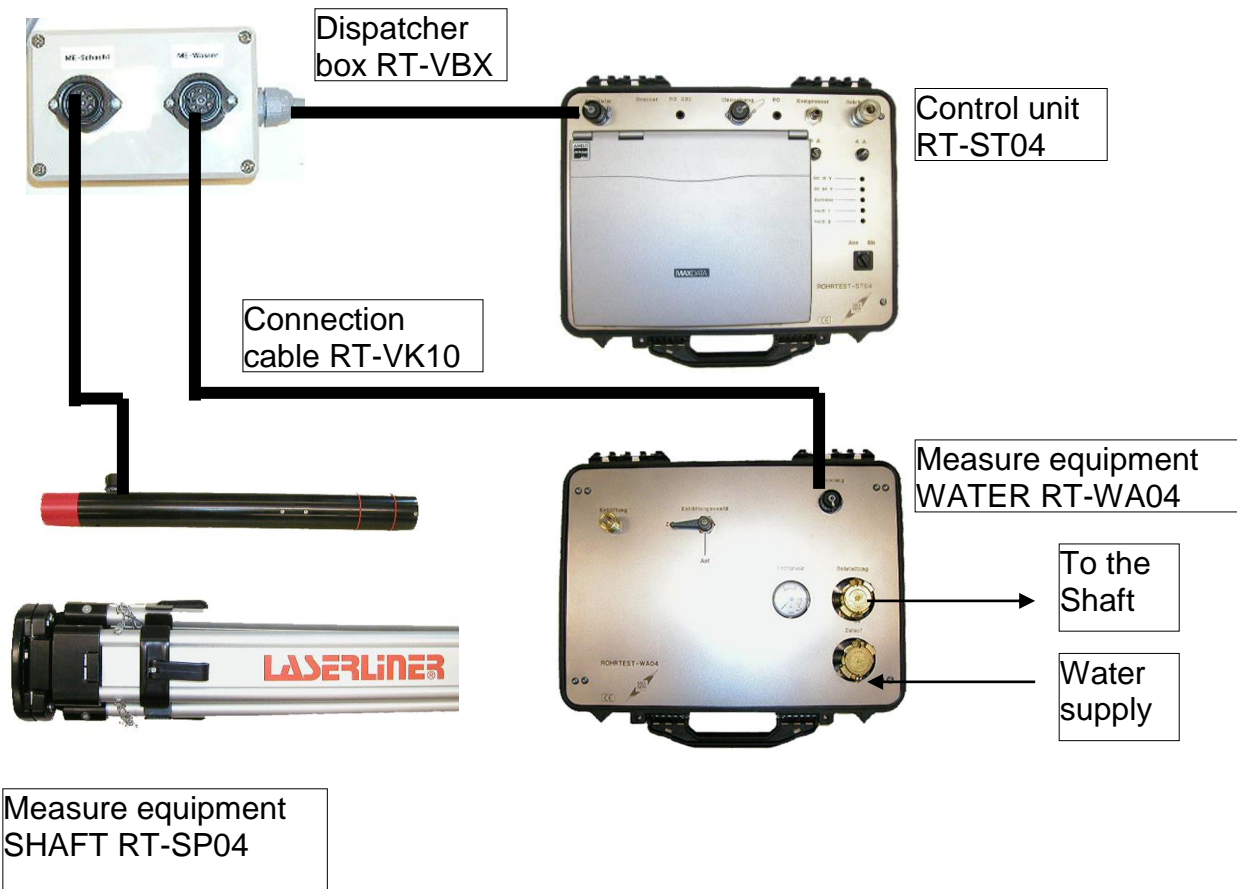


### 1.3. Shaft and separator-test in the free-mirror-procedure

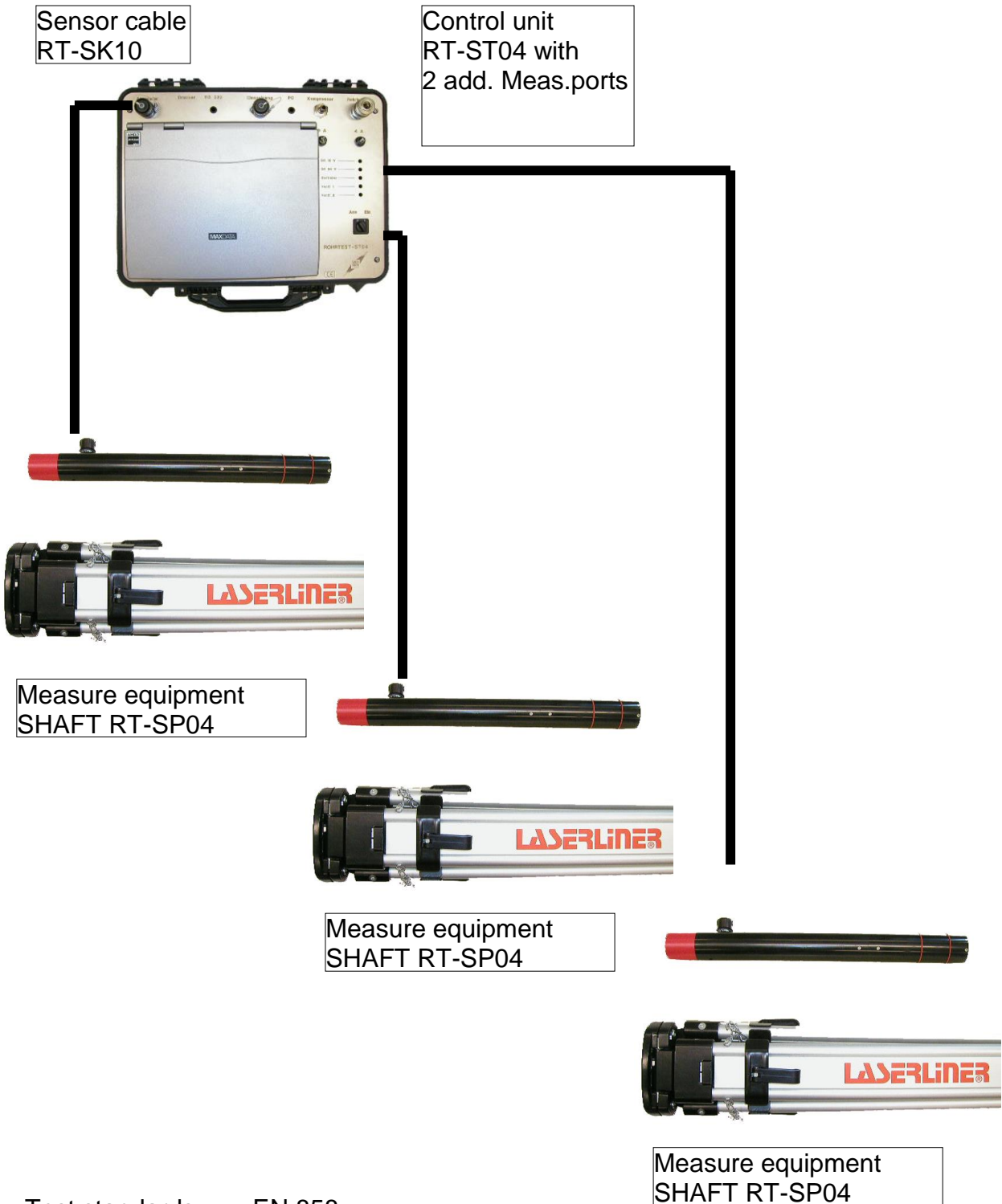
#### Configuration A: Shaft - / separator-test of automatic water-addition



#### Configuration B: Separator-test with automatic water-addition

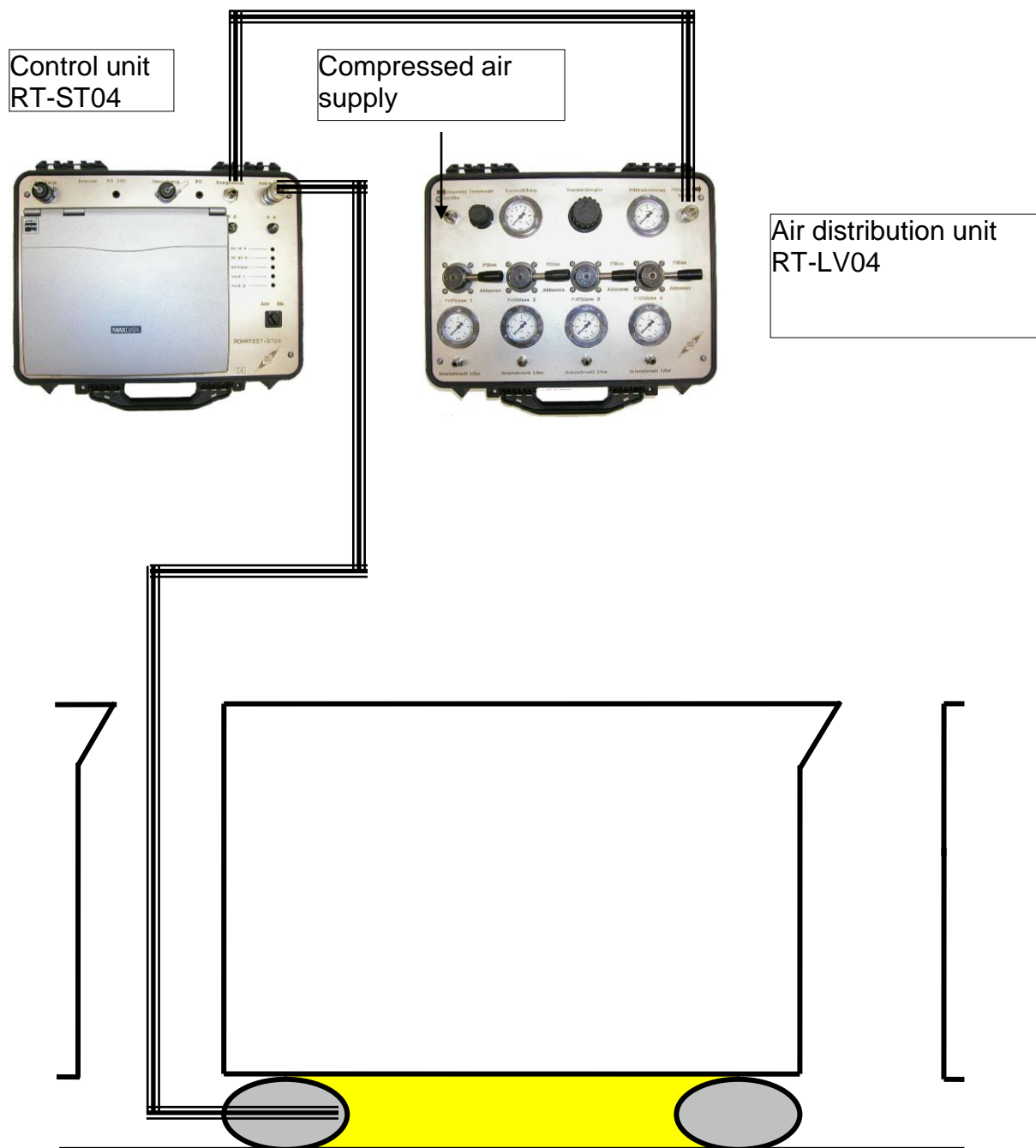


Configuration C: Separator-test with several level-probes



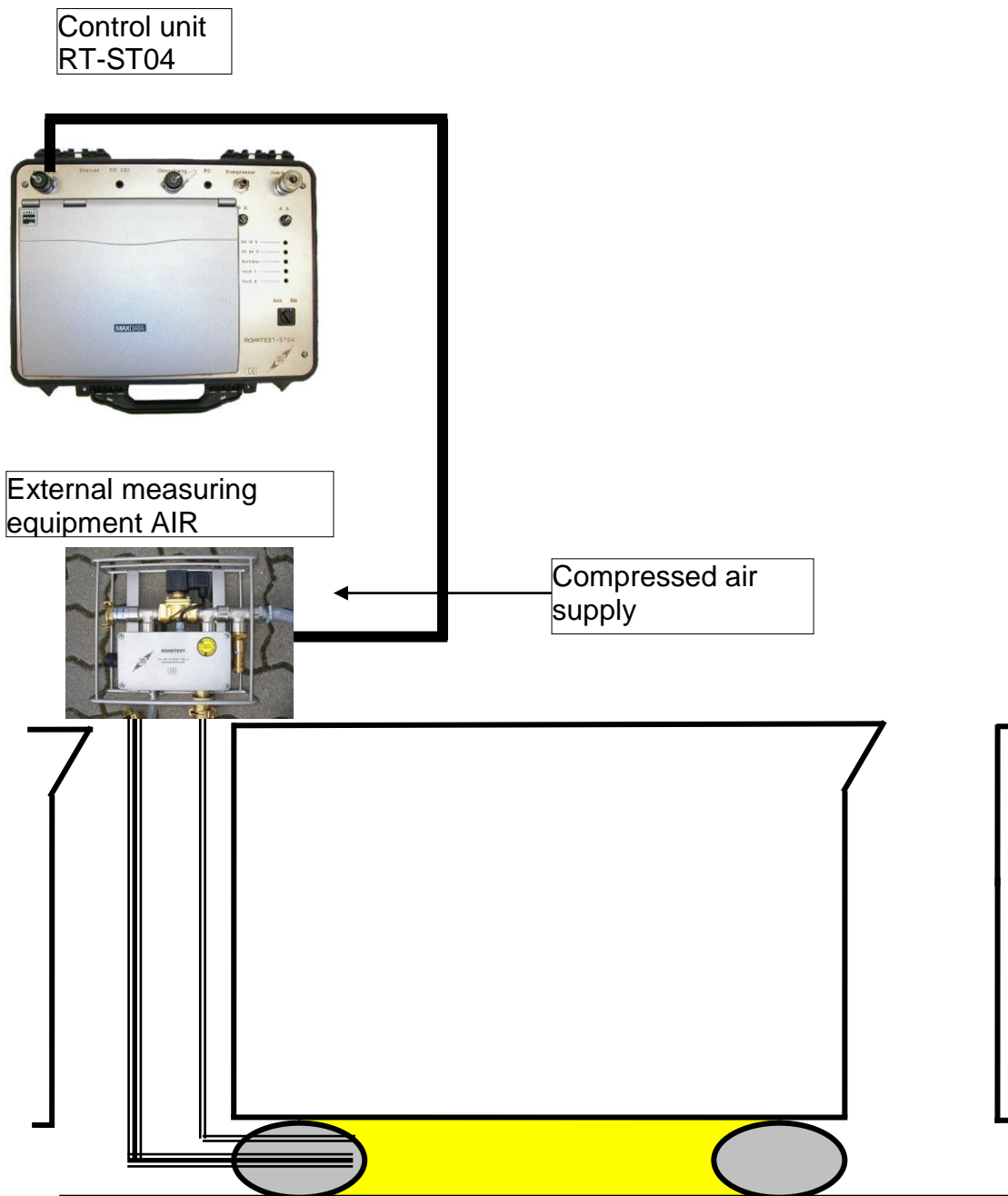
Test standards: EN 858  
DIN 1999-100  
DIN 4040-100  
EN 1610 "W"  
Special test procedure „W“

#### 1.4. Pipe test with compressed air / measuring equipment AIR/VAKUUM



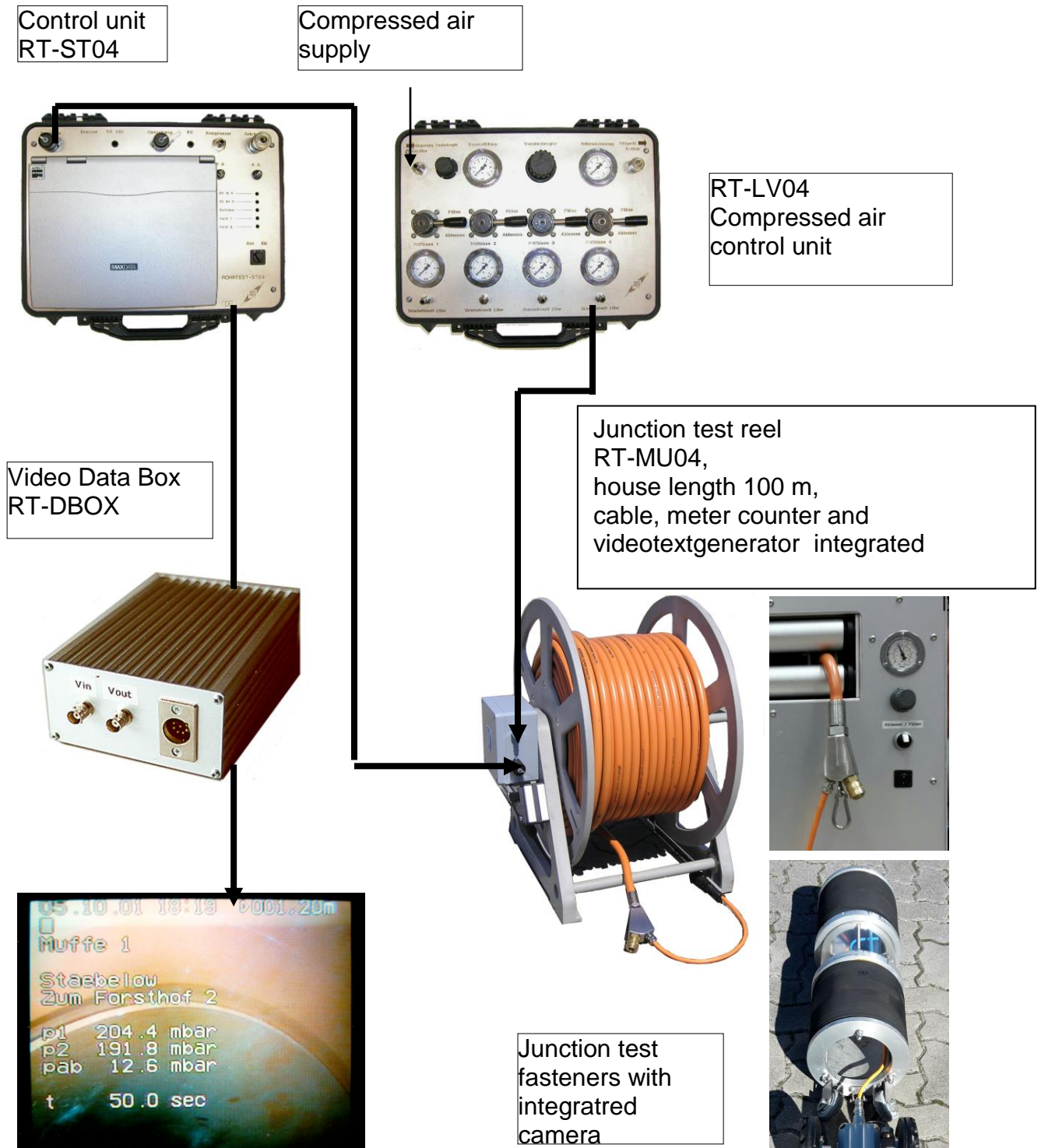
Test standards: EN 1610, Verfahren „L“  
DWA M 139  
DIN 1986/30, DWA M 143/6  
ÖNORM B2503  
SIA 190 / VSA  
Special test procedure „L“

### 1.5. Pipe test with compressed air / external measuring equipment AIR



Test standards: EN 1610, Verfahren „L“  
DWA M 139  
DIN 1986/30, DWA M 143/6  
ÖNORM B2503  
SIA 190 / VSA  
Special test procedure „L“

### 1.6. Compressed air tightness test for pipe junctions



Test standards:     ATV/DWA M 139  
                           ATV/DWA M 143-6  
                           EN 1610  
                           ÖNORM B2503  
                           SIA 190 / VSA  
                           Special test procedure „L“



### 1.7. Water tightness test for pipe junctions

Control unit  
RT-ST04

Compressed air  
supply



RT-LV04  
Compressed air  
control unit

Video Data Box  
RT-DBOX



Junction test reel  
RT-MU04,  
house length 100 m,  
cable, meter counter and  
videotextgenerator  
integrated



Junction test  
fasteners with  
integrated camera



Test standards:     ATV/DWA M 139  
                           ATV/DWA M 143-6  
                           EN 1610  
                           ÖNORM B2503  
                           SIA 190 / VSA  
                           Special test procedure „W“