

Operating Manual SmartCHECK

Test Bench





Order No. 10107834/02

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Germany

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(GB)

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1 Safety Regulations

1.1 Correct Use

The MSA test benches of the SmartCHECK product family [hereafter referred to as test bench] are designed for testing full face masks, lung governed demand valves, compressed air breathing apparatus, chemical protective suits and closed circuit breathing apparatus. Some of this equipment can only be tested using special adapters.

It is imperative that this operating manual be read and observed when using the product. In particular, the safety instructions, as well as the information for the use and operation of the product, must be carefully read and observed. Furthermore, the national regulations applicable in the user's country must be taken into account for a safe use.

Danger!

This product is supporting life and health. Inappropriate use, maintenance or servicing may affect the function of the device and thereby seriously compromise the user's life. Before use the product operability must be verified. The product must not be used if the function test is unsuccessful, it is damaged, a competent servicing/maintenance has not been made, genuine MSA spare parts have not been used.

Alternative use, or use outside this specification will be considered as non-compliance. This also applies especially to unauthorised alterations to the product and to commissioning work that has not been carried out by MSA or authorised persons.

1.2 Liability Information

MSA accepts no liability in cases where the product has been used inappropriately or not as intended. The selection and use of the product are the exclusive responsibility of the individual operator.

Product liability claims, warranties also as guarantees made by MSA with respect to the product are voided, if it is not used, serviced or maintained in accordance with the instructions in this manual.

1.3 Safety and Precautionary Measures

The test bench is built and tested in accordance with EN 60950 part 1, protection measures for electronic measuring equipment and was released from the factory in a perfectly safe condition. In order to maintain this condition, and to ensure safe operation, the user must observe the instructions and warning notes which are contained in these instructions for use.

Calibration

Only use a calibrated test bench. MSA recommends one annual calibration.

Connection to the Supply Voltage

Prior to switching on, please ensure that the set operating voltage and mains voltage on the test bench concur. The mains connector can only be connected to a socket with sealed contact. The protective effect must not be removed by an extension without protective wire.

Protective Wire

Any disconnection of the protective wire, inside or outside the test bench, or loosening of the protective wire connection, can make the test bench dangerous. Intentional disconnection is not permitted.

Opening Covers

Do not open any covers or remove parts.

Fuses

Only the stipulated type of fuses with the given rated amperage can be used as a replacement. Do not use patched fuses or short-circuit the fuse holder.

Errors and Unusual Stresses

If it is ascertained that safe operation is no longer possible, the test bench must be shut down and secured against unintentional switching on. Error recovery must be performed by the manufacturer's customer service or by qualified and authorised personnel.

Breathable Air

Only use breathable air which complies with the requirements of EN 12021 or USCGA grade D [or better].

Data Base Entries

All entries in the data base of the test bench have to be checked by the user. The data base entries must comply with the specifications of the devices to be tested.

Oxygen

Keep oxygen cylinder and tubing away from any source of heat.

Never use grease or oil on oxygen equipment. Keep equipment away from all flammable materials such as oil, grease, aerosols, paints, gasoline and solvents.

High Pressures

- Never open filling or shut-off valves when the test bench is under pressure and not connected.
- Always shut down and decompress the complete system prior to carrying out any repair or maintenance work on the test bench.
- In case of damage to the high pressure lines from heat, chemicals, mechanical impact or similar that can be detected, the test bench must be taken out of service and the components concerned must be replaced without delay by an authorised service centre.



2 Description

This manual applies to the test benches according to chapter 2.2. Where content does not apply to all configurations this is explicitly stated.

2.1 Overview

The test bench is designed for testing full face masks, lung governed demand valves, compressed air breathing apparatus, chemical protective suits and closed circuit breathing apparatus. Some of this equipment can only be tested using special adapters. [\rightarrow chapter 10].

All possible tests are listed in chapter 2.2.

The connections necessary to carry out the tests are described in chapter 6 for all devices.



The test and tolerance values used in the software for MSA devices should be compared with the relevant device servicing manuals.

Tolerance and test values for other device manufacturers must be compared with the respective manufacturers or their servicing manuals. MSA accepts no liability for these values.

The user may modify or adjust the test data.

Standard devices are included in the pool database.



2.2 Tests Possible Depending on SmartCHECK Model

SmartCHECK Basic Version

- Full face masks:
- Measurement of leak tightness with positive pressure
- Measurement of leak tightness with negative pressure
- Measurement of the opening pressure of the exhalation valve
 Measurement of the inhalation resistance with constant flow of
- Measurement of the inhalation resistance with constant flow of 10 l/min
- Lung governed demand valves:
- Measurement of leak tightness with positive pressure
- Measurement of leak tightness with negative pressure
- Measurement of rise in low pressure
- Measurement of the switch over/activation pressure (positive pressure)
- Measurement of the static pressure (positive pressure)
- Measurement of the opening pressure (negative pressure) Self contained breathing apparatus:
- Measurement of the leak tightness of the medium pressure
- Measurement of rise in medium pressure

Chemical protective suits:

- Measurement of leak tightness with positive pressure
- Measurement of leak tightness of the suit valves with negative pressure

Closed circuit breathing apparatus:

- Complete test of the MSA closed circuit breathing apparatus AirElite 4h

Standard High Pressure

Free-adjustable High Pressure Self contained breathing apparatus:

Self contained breathing apparatus:

pressure

Safety Valve Test

See Standard High Pressure with extension with:

Tests with free-adjustable filling pressures (with air consumption the filling pressure stays stable/will be hold)

Maintenance: adjustment of i.e. warning signals, medium

Measurement of the safety valve opening pressure Measurement of the safety valve closing pressure

- Self contained breathing apparatus:
- Measurement of the leak tightness of the high pressure
- Measurement of the opening pressure of the warning signal
 Measurement gauge comparison with varying filling pressures
- including automatic pressure drop
- Measurement of the static medium pressure at a specified high pressure

Transponder Reader

All devices:

- Device identification using RFID technology 125 kHz

Closed Circuit Breathing Apparatus with constant dosage Closed circuit breathing apparatus:

Complete test of Closed Circuit Breathing Apparatus with constant dosage

(Extension with measurement of the constant dosage)

Gauge Camera Self contained breathing apparatus:

 En bloc confirmation and image documentation of the gauge comparisons

Artificial Lung Full face masks:

 Measurement of the dynamic inhalation and exhalation resistance

Lung governed demand valves:

- Measurement of the dynamic inhalation resistance
- Self contained breathing apparatus:
- Measurement of the dynamic medium pressure

Vacuum Device for Standard High Pressure

Lung governed demand valves:

- Measurement of the inhalation resistance with suction and test bench inlet pressure
- Lung governed demand valves:
- Measurement of the dynamic inhalation resistance
- Self contained breathing apparatus:
- Measurement of the medium pressure with suction and test bench inlet pressure

Breathing Simulation within Residual Pressure Range Self contained breathing apparatus:

- Dynamic test of pressure reducers and lung governed demand valves within residual pressure range
- Vacuum Device for Free-adjustable High Pressure
- Lung governed demand valves:
- Measurement of the inhalation resistance with suction and variable high pressure
- Self contained breathing apparatus:
- Measurement of the medium pressure with suction and variable high pressure

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2.3 Scope of Delivery (SmartCHECK Basic Version)

- Test bench
- Quick start guide
- Touch screen pen
- Protective hood for test head
- Microfibre cloth
- Silicone oil
- Transponder antenna (if transmitter reader was ordered)
- High pressure supply line (for High Pressure versions)
- High pressure test line (for High Pressure versions)
- Power supply cable (version depending on country)
- Testing software TecBOS.Tech (depending on license)
- Log-on cards, starter set

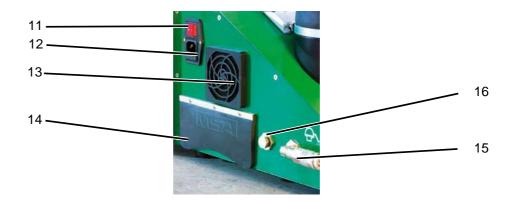


2.4 Operating Elements

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SmartCHECK Basic Version (depending on ATO configuration)





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- Fig. 1 SmartCHECK Basic Version
- 1 Connection for lung governed demand valve
- 2 Test head
- 3 Measuring point eye
- 4 Holder for adapter mask helmet combinations
- 5 Touch screen
- 6 Transponder antenna
- 7 Connection for transponder antenna
- 8 Manual pressure release

- Medium pressure inlet [nipple] 4 10 bar
- 10 Push button
- 11 Main switch
- 12 Power connector/fuse
- 13 Test bench ventilation: fan with filter
- 14 PC Interfaces [see next page]
- 15 Medium pressure outlet [coupling]
- 16 Calibration connection test head

SmartCHECK Modules

Additional features of the Modules version are shown below.

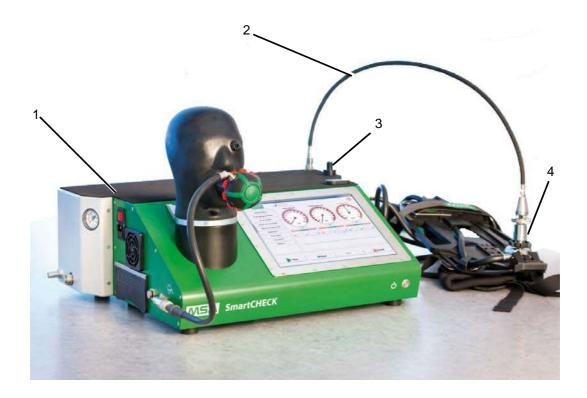






Fig. 2 SmartCHECK Modules Version

- 1 Artificial lung and high pressure housing 6
- 2 High pressure test line
- 3 Holder for high pressure test line when not 8 in use
- 4 Test adapter 9
- 5 Microphone

Minimal Configuration for PC Interfaces

The test bench is at least equipped with:

- 2 USB interfaces
- 1 Ethernet port
- 1 serial interface [COM]
- 1 monitor port

Spring loaded drawer for fixing gauge during test Pressure gauge Pressure gauge camera (internal)

- High pressure inlet
- Pressure gauge (inlet pressure)

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3 Basic Information Software



Attention!

To avoid losing saved tests and data base entries, make sure that the main database is backed up continuously.

3.1 Touch Screen Functions

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<u>/!\</u>	Т

Attention!

To prevent damage to the touch screen, avoid touching it with sharp objects. Only use fingers or the touch screen pen provided.

While the testing procedure has been optimised for touch screen operation, an external keyboard and a mouse are recommended for data base entries.

Calibration Touch Screen

- Start the program to calibrate the touch screen via: Start -> All programs -> Touchkit -> Configure utility
- (2) Click on tab Tools.
- (3) On this tab, click on 4 Points Calibration.
 - ▷ Touch screen calibration opens.
 - > The display shows a white screen with a reticle in the lower left corner.
- (4) Touch the reticle by finger or touch pen.
 - Keep finger or touch pen on the screen until the reticle turns blue.
- (5) Remove finger or touch pen.
 - ▷ The reticle moves to the lower right corner.
- (6) Carry out this calibration for all corners.
 - ▷ After calibration is finished, a pop-up- window is displayed.
- (7) Confirm this window with "OK", then leave the application with "OK".

Using the On-screen Keyboard

The handling of the on-screen keyboard is the same as of a standard keyboard.

The on-screen keyboard will appear when necessary. When minimised it can by default be found on the left side of the screen.



Fig. 3 On-screen keyboard

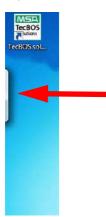


Fig. 4 Minimised on-screen keyboard



Symbol Menu 3.2



Fig. 5 Symbol Menu

- 1 Close current module
- 2 Create new data set
- 3 Open data set
- 4 Save data set
- 5 Copy data set
- 6 Delete current data set
- 7 Multiple deletion of data sets
- 8 First preselected data set
- 9 Previous preselected data set

- 10 Next preselected data set
- 11 Last preselected data set
- 12 Collective change
- 13 Print selected data
- 14 Print current data set
- 15 Export data
- 16 Change log
- 17 Mask administration [interface administrator]
- 18 Kat's allocation plan

3.3 Layout Submenus



Fig. 6 Layout of some submenus

- 1 Create new sub entry in list
- Allocate entered value [blue arrow] 2
- Delete entry from list
- 3



A deleted entry can only be restored through a new allocation.

Keyboard Shortcuts 3.4

Key/Key combination	Action
<f1></f1>	Start help
<f4></f4>	Open the selection lists [Field lists]
<f7></f7>	Activate selection mode in sub-tables
<f9></f9>	Scroll through selected data sets in decreasing order
<f10></f10>	Save data set, scroll forward to the next data set. If used as save function a new data set will be created automatically.
<f11></f11>	Jump to first data set
<f12></f12>	Jump to last data set
<tab></tab>	Cursor jump to the next input field
<shift+tab></shift+tab>	Cursor jump to the previous input field
<strg+tab></strg+tab>	Change to the next tab
<strg+v></strg+v>	Insert from intermediate document storage



3.5 Search Functions

Search field input	Meaning
amt	String
amt/ amt*	Search of all data sets starting with "Amt"
amt / *amt	Search of all data sets ending in "amt"
amt / *amt*	Search of all data sets containing "amt"
ac / a*c	Search of all data sets from "a to c"
=	Show all data sets which do not have an entry in this input field
/=	Show all data sets which do have an entry in this input field
/a	All data sets except for the string
>1	Larger than string
<1	Smaller than string
x;y;z	Multiple selection

How to Search

Module independent, functionality does exist for all modules providing the open button.

Click on *Open data record*. All green fields can now be used to enter search criteria. F10 or another click on the Open button starts the search. If there is more than one dataset matching the entered criteria the application will show the selection window. If there is only one data set matching the entered criteria it will be opened immediately.

The Identification field can be used for a quick search by either

scanning the transponder or bar code

or

entering the object number, serial number or manufacturer number via keyboard.

After pressing Enter the device appears.

Devices										
			3 8 8 11		- Workshop	1	Central workshop	•	Reset	
Object number	1	_	Year of manufacture		1 [°]				1040/05/11/12	
Module			Delivery date	+	-					
Sort			Put into operation	+	Decisional					
Туре	-		Warranty until	t ;						
Description	0	-	Life spen [years]	1		1	Device code nun	her		
Abbreviation			Scribut	1			Assets accountin	2222		
Licence plate			Blocked							
Manufacturer		-	Maintenance priority	+	10	-				
Manufacturer no.			Acquisition costs	-	1	[i	lailf rate	1		Į.
Beronde			Location 1				Cast centre			
Tiansconder			Location 2			-				-
Serial number			Location 3	-		-				
Inventory no.			Status			-				
Description Month	ns Last date Next	date Kim Lax	stkm Nextkm Hou	rs Last hours	Next hours		Description Months	Last date		
Description Month	ns Last date Next	date Km Lax	stikm Nextikm Hou	rs Last hours	Next hours	D	and the second second second			
						PTR	Months	1000000000	-	
						E		Next date	_	
						X	Km	Last km		
								Next km		
							Hours	Last hours	-	
							-	Next hours	_	
Quick selection										
Identification										

Fig. 7 Identification field



3.6 Software Backup Options

The MSA Backup Utility:

- saves the content of the hard disk
- can save the complete operating system including the TecBOS software and TecBOS database
- creates a bootable medium to restore the backup in case of problems with the hard disk
- allows a complete recovery or restoring the database

The MSA Backup Utility will start automatically when Windows starts.

Running a Backup

Required accessory:

- An **empty** external USB storage device (USB flash drive or USB hard disk) with min. 8 GB of memory. (All existing data on the USB storage device will be overwritten in the process.)



Attention!

The external disk is to be used exclusively for the backup. It is recommended to backup regularly and to safe the full backup on the external USB storage device!



(1) Close all running programs.

The MSA Backup Utility shows two buttons. Initially, only the left button "System Backup" is active.

- (2) Click on the left button "System Backup".
- (3) Confirm the message with "OK".
 - The computer shuts down and starts the backup process automatically.

Attention!

Ϋ́.

Do not turn off the PC manually. It will reboot automatically after backup process is finished and start Windows.



Create a Bootable Medium

The image of the hard drive has been created.

- (4) Connect the external USB storage device to a free USB port (on the left side of the SmartCHECK).
- (5) Click on the right button "Create restore device".
- (6) Select the target drive.
 - ▷ Only select the external USB storage device.



Attention!

Do not select one of the SmartCHECK/test bench disks ("SmartCHECK", "Backup" or "Backup DATA GDB").

- (7) Click "OK".
 - The external USB storage device will be converted to a bootable USB storage device which contains the entire backup.

Recovery from Backup

Required accessory:

- The bootable medium created with the MSA Backup Utility
- Externally connected keyboard

Complete recovery

In the case of total failure of hard disks the external USB storage device with the entire backup will restore the complete operating system and the TecBOS software with the TecBOS database. To run the restore process turn off the test bench and plug in the external USB storage device.

- (1) Turn on the test bench.
- (2) Connect externally connected keyboard.
- (3) Press "F12" on keyboard and choose the external USB storage device.
 - ▷ The restore process starts.
- (4) Confirm the displayed message by pressing key Y or Z.
 - ▷ After successful restoration the test bench will restart and Windows will appear.
 - \triangleright The recovery process is completed.

Restoring the database

If the database is faulty, either a database from the drive E:\ called "Backup Data GDB" or a previously externally saved database can be restored.

- (1) Rename the previously saved database to data.gdb
- (2) Copy the renamed database into the folder C:\Program Files\MSA\TecBOS Solutions\data.
 - ▷ The existing database will be overwritten.



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4 Startup

4.1 Setting Up

When setting up the test bench the following conditions have to be met:

- Set up the test bench on an even and stable surface. If necessary fix the test bench.
- Do not block or cover the fans of the test bench. During operation there has to be a minimum distance of 10 cm between the fans of the test bench [→ fig.8] and a wall.
- At the place of use, contact to water or other liquids must be avoided.
- The test bench may only be operated at temperatures between +5 °C and +60 °C and a relative humidity between 15 % and 80 %.
- During a test of devices the ambient conditions [temperature, humidity] must not change significantly.
- Only carry out tests with acclimatised devices.
- Avoid direct sunlight and proximity to strong electromagnetic fields to ensure reliable test results.



Fig. 8 Minimum distances SmartCHECK basic

4.2 Switching On



The test bench is fully operational, all necessary software to operate the device is preinstalled. For testing devices and components no further software installation is required.

- (1) Attach the power cord to the test bench and connect to the power supply.
- (2) Optional: Connect transponder antenna [\rightarrow chapter 2.4, fig. 1].
- (3) Optional: Connect high pressure feeding line, plug in high pressure test line.
- (4) Make sure that the opening of the test head is empty [no adapters attached] and clean.
- (5) Switch on test bench with the power switch on the left side of the test bench.
 Power switch glows red.
- (6) Press push button.
 - ▷ Test bench is powered completely.
 - ▷ Push button glows green continuously.
 - ▷ Integrated computer begins to boot.
 - > Operating system of the computer and testing software are started.

The software can be operated with the touch screen or with mouse and keyboard.



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4.3 Logging In

Log -in by typing user name and password:

TI	he Safety Company				
User name	Administrator				
Abbreviation	AD				

Fig. 9 Log-In screen



The user name is **Administrator**, the abbreviation is **AD** and the default password is **Administrator** [not case sensitive].

After logging in for the first time, change the password for the administrator. Using the button "change password" on the bottom of the login dialog. Then follow the password change dialog.

Using a Card

[→chapter 7.2]



Licensing and Activation of the Software

Usually the test bench software has already been licensed when the test bench is delivered.

Choose the user Administrator, enter the password, and choose the Options button from the login dialog box.

Licensing	Database creation/check
🔲 Show field names	Complete reorganisation
	Reorganise generators
	🗌 Reorganize rights
	Reset template administration.
EN 🖌 OK 🗡 (Cancel Change password Options <<

Fig. 10 Options

(1) Tick licensing and then click on OK.

Send per mail	Initialisation code	84F4 E23D	3A08 41F	A126	4810	B7E2	1088
			٦	Send per mail			
code	Activation code						
	Activation code	_					

Fig. 11 Activation code

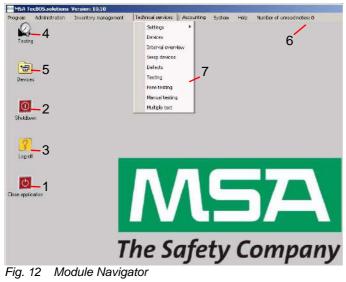
- (2) Proceed by entering the activation code [has to be entered completely, including hyphens].
- (3) After confirming with OK answer the question [Do you want to execute 'database create/test'?] with Yes. This will start the debug server process to customise the database to your license.



Attention!

When using the network version, do not use the software on another device while the licensing process is running, otherwise the data base could be compromised.

4.4 Desktop Overview



- 1 Logs off from TecBOS
- 2 Shuts down the computer
- 3 Logs off from the operating system
- 4 Starts the testing module

- 5 Starts the devices module
- 6 Menu bar
- 7 Drop-down menu of menu bar



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5 Testing Information for all Devices

The following devices can be tested with the SmartCHECK:

- Masks
- Lung governed demand valves
- Breathing apparatus
- Chemical protective suits
- Closed circuit breathing apparatus
- Closed circuit breathing apparatus with constant dosage
- The test bench accesses a database where test procedures and tolerance values are stored.

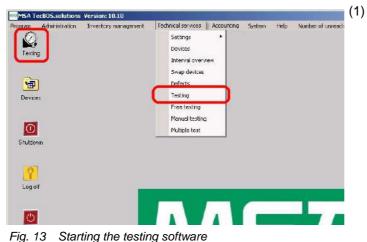
If it is required to add an additional type for implementing in the data pool, enter the required device to your testing database.



Attention!

Specifications of the device to be tested and national regulations apply. The data base entries must comply with the specifications of the devices to be tested.

5.1 Starting the Test Software



- Double click on the icon *Testing* or start via path *Technical servic*es-*Testing*.
 - The test bench starts, the internal pump fills the test head.

5.2 Connecting Devices

The testing software describes the connection of standard devices.

Ĭ

For testing special accessories may be necessary. For detailed information \rightarrow chapter 10 and the operating manual of the device to be tested.

The testing software provides illustrations how to connect a device. Since these hints can be deactivated chapter 6 provides an overview. Depending on the type of construction there may be deviations.

Follow the on-screen instructions [can vary depending on selected type of device].



5.3 Testing Combined Devices

It is possible to test combined devices with the test bench.

- Select all devices that are combined when selecting devices.
 - ▷ Tests for all devices selected will be carried out consecutively.

5.4 Overview Test Screen SmartCHECK basic

Testing Visual inspections Facemark tightness test 3 Opening pressure exhalation valve	$\begin{array}{c} 2 \\ Facemask tightness test \\ 15 \\ \hline \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ $
Stop 13	⁻⁹² 11 -112

Fig. 14 Overview Test Screen

- 1 Timer [Countdown]
- 2 Current test
- 3 List of tests
- 4a Magnified view of the tolerance range
- 4b Lower tolerance level
- 4c Upper tolerance level
- 5 Gauge not necessary for test [dimmed]
- 6 Active gauge
- 7 Current measurement
- 8 Negative pressure deviation from start value

- 9 Start value of measurement
- 10 Positive pressure deviation from start value
- 11 Pressure curve [with graphical tolerance values]
- 12 Display of tolerance range
- 13 Interrupt current test
- 14 Go to next page [active after test has finished or is interrupted, dimmed]
- 15 Measurement warning signal [not active]
- 16 Go to previous page [active after test has finished or is interrupted, dimmed]
- 17 Ends this test and opens device selection



5.5 Overview Test Screen SmartCHECK Modules

This test screen shows an additional gauge for high pressure, all other fields are the same.

Test	1) 2 15 High arguments	High pressure tightness test	ч <u>в</u> с
High pressure tightness test 3		Medium pressure	Low pressure 1
gauge test - 1 - SmartCHECK	125 ¹⁵⁰ ¹⁷⁵ 200 225 100 250		5 5 10 H
gauge test - 2 - SmartCHECK			
gauge test - 3 - SmartCHECK	25 6 325 0 350	0 bar	mbar 2 mbar
Test warning whistle	bar 7		
4			
	-9.211 -11.2		
Start 13	 Back 16	Next 14	Cancel 17

Fig. 15 Overview Test Screen

- 1 Timer [Countdown]
- 2 Current test
- 3 List of tests
- 4a Magnified view of the tolerance range
- 4b Lower tolerance level
- 4c Upper tolerance level
- 5 Gauge not necessary for test [dimmed]
- 6 Active gauge
- 7 Current measurement
- 8 Negative pressure deviation from start value

- 9 Start value of measurement
- 10 Positive pressure deviation from start value
- 11 Pressure curve [with graphical tolerance values]
- 12 Display of tolerance range
- 13 Interrupt current test
- 14 Go to next page [active after test has finished or is interrupted, dimmed]
- 15 Measurement warning signal [not active]
- 16 Go to previous page [active after test has finished or is interrupted, dimmed]
- 17 Ends this test and opens device selection

5.6 Manual Operation

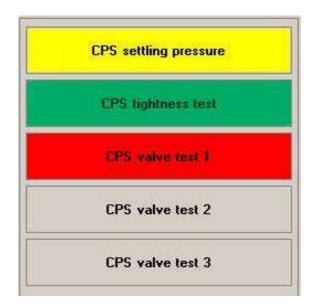


Fig. 16 During a test

All tests necessary for the device are listed as buttons.

Tests which have been successfully completed are highlighted green. Failed or stopped tests are highlighted red. Active, running tests are highlighted yellow.

During the automatic test process each test is carried out successively. When an error is detected the test stops. The test can be repeated, skipped or aborted.

Each test can also be started individually [by double-clicking on the respective test]. Active manually started tests are highlighted yellow.

Clicking once on a test shows the results of this test if test has already been carried out. Clicking once on a test not yet carried out marks this test, clicking on *Start* starts with this test and the following tests are carried out successively similar to the automatic test routine.



While a test is active and running, only the buttons *Stop* and *Cancel* can be used. It is not possible to mark or start tests while they are carried out and highlighted yellow.

Stop stops a running test, but the system stays pressurised. *Cancel* stops a running test, the system depressurises.

5.7 Test Criteria for MSA Respiratory Protection Apparatus

Test criteria are subject to national regulations, applicable national regulations must be observed. For orientation, MSA recommended test criteria can be found in the service manuals for the devices to be tested.

6 Testing Devices



For testing special accessories may be necessary. For detailed information \rightarrow chapter 10 and the operating manual of the device to be tested.

6.1 Masks



- (1) Put mask onto test head.
- (2) Pull harness tight in indicated order.
- (3) Screw lock screw into demand valve connector [\rightarrow arrow].

Fig. 17 Connecting Mask

The following tests can be carried out for masks:

- Mask tightness test.
- Mask opening pressure exhalation valve.

This section describes a test according to default settings. If settings have been changed there may be deviations [\rightarrow chapter 7 for how to change settings].



Object number	Type	Serial no.	Test process	
MAY 2	Ultra elite N	4	4 Standard test MA neg	
_				
Identification		Test process	1	

Fig. 18 Selecting a device for testing

Object number	Туре	Serial no	Test process	
LA-4	DV 96 -AE/ -AS		Standard DV pos.	
PA-1	AinMator	5	Standard BA	

Fig. 19 Selecting connected devices

Selecting Device

- (1) Switch on the test bench and log in $[\rightarrow$ chapter 4.3].
- (2) Start the testing by double-clicking the testing icon on the desktop [\rightarrow chapter 4.4].
- (3) Select a device for testing. To select a device type in one of the identification properties press enter to run the selection against the database.

The following identification properties are available:

- Object number
- Transponder
- Bar code
- Serial number
- Manufacturer number
- (4) Click on Next.

Related devices are connected by selection of the main device or one of its sub devices.

For all possible search functions \rightarrow chapter 3.5.

It is possible to search for devices with the transponder if they are equipped with the necessary tag.

A bar code reader for the test bench is available as an accessory and can be used instead of the transponder reader.

If the device cannot be found, \rightarrow chapter 7.5 for details on entering data sets.

(5) Click on Next.



ork the test in	terval				
bjoci number	Description	Months	Lost	Next	
E-AM	After use	0			
MA-3	half annually	6			
MA-3	6 years	72			
					1
				Next 🔷	X Cancel

Fig. 20 Tests

	material					
Object number	Number	Description	Last	Next	Serial number	
E-AM	101858	Speech diaphrgm				
Z MA-3	101860	Gold breath valve				
MA-3	101051	Inhalation valves				
CAM	101862	Check volves				

Fig. 21 Overview material

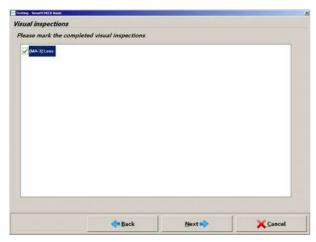


Fig. 22 Visual inspections

After selecting one or more devices you will have an immediate overview of possible and required tests.

Red-marked fields are due and marked automatically by the program. Manual change of tests is possible.

- (6) Tick the test to be performed.
- (7) Click on Next.

An overview of materials to be used appears.

(8) Tick the used material.

If the material cannot be found, \rightarrow chapter 7.5 for details on entering data sets.

After the material has been chosen the material is booked out of storage management when successfully saving the test.

- (9) To append material, click on *add item*.
- (10) Tick the material to be added.
- (11) Click on OK.

 \triangleright The material is added.

(12) Click on Next.

All necessary visual inspections are listed

(13) Tick the performed visual inspections.

If a visual inspection cannot be found, \rightarrow chapter 7.5 for details on entering data sets.

If not all visual inspections are confirmed, testing does not proceed and a warning appears. The warning has to be confirmed in order to proceed.

(14) Click on Next.

The test screen appears.

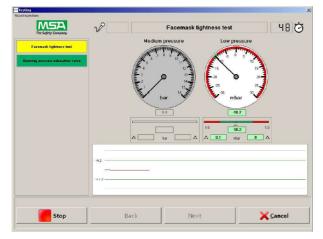


Fig. 23 Test screen



Fig. 24 Connect mask

E	• = (*	
м		mbar

Fig. 25 Test proceeds

(15) Click on Start.

An illustrated description appears to show how the device has to be connected.

(16) Connect mask to test bench according to instructions.

(17) Click on OK.

When *Do not show message in the future again* is checked by a user, only the administrator can reactivate these messages for this user.

The test routine starts.

The start button changes into a stop button. By clicking on *Stop* you can interrupt the test at any time.

All test necessary for the device are listed as buttons.

Tests which have been successfully completed are highlighted green. Failed tests are highlighted red. Active, running tests are highlighted yellow [\rightarrow chapter 5.6].

Once the test procedure has been started, all test sequences proceed completely automatically.





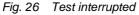




Fig. 27 Successful test

Test consent			
Testing			
Comments			
Training		User/Location	9
Mission			
Comments			
Connietus			23
-			쾨
	Back	Next	

Fig. 28 Commenting test

If one of the test fails, the test is aborted and the test bench is requiring a user interaction.

A dialogue box appears with the choice to repeat the test. Possible causes of fault and troubleshooting directions are listed.

Eliminate the cause of fault and repeat the test.

It is possible to save failed tests.

After a successful test, all individual test buttons are highlighted green.

Click on Next to continue.

A window opens for saving comments for the test:

- training
- mission
- scheduled test
- User/Location

If the required user/location cannot be found, \rightarrow chapter 7.5 for details on entering data sets,

- (18) Enter the necessary comments.
- (19) Click on OK.
 - \triangleright The test can now be saved.



With Cancel the di-

and test can be re-

alogue is closed

peated.

Options in the saving dialogue:

- Save the test with Yes
 Click on Continue.
- Click No
 - A new dialogue appears.
- Yes ends test routine with saving the data
- No ends the test routine without saving data
- With *Cancel* the dialogue is closed and test can be repeated.

Print	
Open test	
Q Next test	
X Finish test	
Close program	

Fig. 29 Options

Inference in Ex	
disconnect lock screw	
C Donot show nessage again	

Fig. 30 Disconnect device

The final screen of the testing procedure offers the following options:

- Print [\rightarrow chapter 7.9]
- Open test [shows the test data → chapter 7.8]
- Next test [another device for testing can be chosen, → fig. 18]
- Finish test
 [ends the testing]
- Exit program [ends the program and shuts down the test bench.]
- (20) Remove mask from test bench.
- (21) Remove adapter/plug.

6.2 Lung Governed Demand Valves

The following tests can be carried out for lung governed demand valves [DV]:

- DV tightness test positive.
- DV control piston leak test with medium pressure.
- DV switch-over pressure.
- DV static closing pressure.
- DV dynamic breathing resistance with lung simulator [with or without mask]

The test procedure is similar as described for masks [chapter 6.1]. The screens will appear in the same order, but contain device specific information.

Connecting Medium Pressure Line (for Basic Configuration)



(1) Supply test device with medium pressure 6 - 10 bar.

Fig. 31 Connecting medium pressure line



Attention!

In order to test a lung governed demand valve, medium pressure is required.

Connecting High Pressure Lines (for Configurations with High Pressure Module)



Fig. 32 Connecting high pressure lines

- (1) Open high pressure connection. Watch for sufficient primary pressure.
- (2) Test preparation: Connect breathing apparatus with high pressure outlet (use Clickadaptor when necessary).
- (3) Connect breathing apparatus with medium pressure input (use medium pressure hose extension when necessary).



Attention!

In order to test a lung governed demand valve, a compressed air breathing apparatus has to be connected. Use the medium pressure from the compressed air breathing apparatus to carry out the breathing tests.

Connecting Adapter



Fig. 33 Connecting Lung Governed Demand Valve

- (1) Demand valve must be in standby.
- (2) Connect DV with adapter.
- (3) Connect medium pressure hose to medium pressure coupling.
- (4) Connect combination of adapter/demand valve with test head.



Fig. 34 Connecting the lung governed demand valve

After testing is completely finished

Basic Configuration

- After testing is completely finished, close the medium pressure line [e.g. by closing the cylinder valve] and depressurise the test bench using the button for discharging medium pressure.
 - ▷ Now the medium pressure line can be removed effortlessly.

Configurations with High Pressure Module

- After testing is completely finished, the test bench depressurises automatically.
 - ▷ Now the pressure lines can be removed effortlessly.

- (1) Proceed as described in chapter 6.1.
- (2) Connect the lung governed demand valve as illustrated.
- (3) Continue with the test as described in chapter 6.1.

6.3 Compressed Air Breathing Apparatus

The following tests can be carried out for compressed air breathing apparatus [SCBA]:

- High pressure tightness test
- SCBA Medium pressure test
- Pressure gauge comparison test
- Warning signal test

The test procedure is similar as described for masks [chapter 6.1]. The screens will appear in the same order, but contain device specific information.

Connecting Medium Pressure Line (for Basic Configuration)



- Connect medium pressure hose of SCBA to test bench medium pressure coupling.
- (2) Open the cylinder.
- (3) Adjust high pressure to 200 bar.

Fig. 35 Connecting Breathing Apparatus



Warning!

Only start testing after all necessary connections have been made in the correct order. Otherwise the high pressure line could be propelled uncontrollably by the escaping air. Failure to follow this warning can result in serious injury.



Fig. 36 Connecting high pressure line

- (1) Open high pressure connection. Watch for sufficient primary pressure.
- (2) Test preparation: Connect breathing apparatus with high pressure outlet.
- (3) For SCBA not equipped with the alpha-click system: Connect the SCBA test adapter (see chapter 10.4) to the pressure reducer.
- (4) Connect breathing apparatus with medium pressure input (use medium pressure hose extension when necessary).

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- (1) Proceed as described in chapter 6.1.
- (2) Connect the compressed air breathing apparatus as illustrated.
- (3) Continue with the test as described in chapter 6.1.

Fig. 37 Connecting the compressed air breathing apparatus

After testing is completely finished

Basic Configuration

- After testing is completely finished, close the medium pressure line [e.g. by closing the cylinder valve] and depressurise the test bench using the button for discharging medium pressure.
 - $\,\triangleright\,$ Now the medium pressure line can be removed effortlessly.

Configurations with High Pressure Module

For SCBA equipped with the alpha-click system:

- After testing is completely finished, the test bench depressurises automatically.
 - $\,\triangleright\,$ Now the pressure lines can be removed effortlessly.

For SCBA not equipped with the alpha-click system:

Warning!

Always carry out the disconnection procedure completely as described below in the correct order.

Failure to follow this warning can result in serious injury.

- After testing is completely finished, the test bench depressurises automatically.
- (1) Disconnect the SCBA test adapter (see chapter 10.4) from the high pressure test line.
- (2) Disconnect the test adapter from the pressure reducer.
 - $\,\triangleright\,$ Now the pressure lines can be removed effortlessly.

6.4 Chemical Protective Suit

The following tests can be carried out for chemical protective suits:

- CPS stabilising pressure
- CPS tightness test
- CPS valve test 1...6

The test procedure is similar as described for masks [chapter 6.1]. The screens will appear in the same order, but contain device specific information.



Watch the filling and test sequence.

Connecting Medium Pressure Line (for Basic Configuration)



(1) Supply test device with medium pressure 6 - 10 bar.

Fig. 38Connecting medium pressure lineConnecting High Pressure Lines (for Configurations with High Pressure Module)



Fig. 39 Connecting high pressure line

- (1) Open high pressure connection. Watch for sufficient primary pressure.
- (2) Test preparation: Connect breathing apparatus with high pressure outlet (use Clickadaptor when necessary).
- (3) Connect breathing apparatus with medium pressure input (use medium pressure hose extension when necessary).

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Fig. 40 Connecting CPS



Fig. 41 Connecting CPS



Fig. 42 Spreading out CPS

After testing is completely finished Basic Configuration

- After testing is completely finished, close the medium pressure line [e.g. by closing the cylinder valve] and depressurise the test bench using the button for discharging medium pressure.
 - $\,\triangleright\,$ Now the medium pressure line can be removed effortlessly.

Configurations with High Pressure Module

- After testing is completely finished, the test bench depressurises automatically.
 Now the pressure lines can be removed effortlessly.
 - $\,\triangleright\,$ Now the pressure lines can be removed effortlessly.
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- (1) Spread CPS [\rightarrow fig.42].
- (2) Close zipper of CPS.
- (3) Remove angled prechamber and valve disks.
- (4) Connect test bench and CPS via adapter.
- (5) Watch the filling and test sequence.
- (1) Assemble valve disk.
- (2) Connect test line.

- (1) Proceed as described in chapter 6.1.
- (2) Spread out and connect the chemical protective suit.
- (3) Continue with the test as described in chapter 6.1.

6.5 **Closed Circuit Breathing Apparatus**

The following tests can be carried out for Closed Circuit Breathing Apparatus:

- Inhalation valve _
- Exhalation valve
- **Tightness test**
- Surplus valve
- Make device operational ready
- IC-Air test

The test procedure is similar as described for masks [chapter 6.1]. The screens will appear in the same order, but contain device specific information.

Attention!

For testing the Closed Circuit Breathing Apparatus the battery must be disconnected from the electronic distributor. Otherwise the respiratory protective device will be started.

Tightness test must be executed with dry air only.

The testing procedure requires the tester to change connections at certain points for certain tests. All safety related steps regarding the equipment will be displayed at the appropriate time, showing these messages cannot be switched off. Here all necessary actions are listed for an overview.

Disconnecting battery



Disconnect battery from the (1) electronic distributor before test.

Fig. 43 Disconnecting battery of closed circuit breathing apparatus

Inhalation/Exhalation Valve



Fig. 44 Connecting adapter hose to test head.

Connect adapter hose with in-(1) serted adapter unit to test head.



Inhalation/Exhalation Valve



Fig. 45 Screwing adapter into inhalation side



Fig. 46 Screwing adapter into exhalation side

Tightness Test/Surplus Valve



Fig. 47 Connecting breathing hose assembly to test head

(2) Screw adapter into inhalation side (marked white at the top) of the respiratory protective device.

(3) Screw adapter into exhalation side (bottom) of the respiratory protective device.

- Remove the breathing hose assembly from the socket on the left hand shoulder harness.
- (2) Connect the breathing hose assembly with adapter to the test head.

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Tightness Test/Surplus Valve



Fig. 48 Blocking surplus valve on exhalation bag



1. Remove the breathing hose assembly from the socket on the left-hand

Remove the breathing hose assembly from the social to the test head.
 Connect the breathing hose assembly with adapter to the test head.
 Block surplus valve on exhalation bag laterally with metal bracket to stop the valve from blowing off air.

/ ок Fig. 49

Block surplus valve on exhalation bag laterally with metal bracket to stop the valve from blowing off air.

- (1) Proceed as described in chapter 6.1.
- (2) Follow the instructions regarding adapters and connections displayed by the software.
- (3) After testing is finished, make sure that the apparatus is ready for use again:
 - Unblock surplus valve on exhalation bag laterally (remove metal bracket).
 - Carry out self-test (IC-Active test).

Y Cancel

6.6 Closed Circuit Breathing Apparatus with Constant Dosage



The SmartCHECK has been tested by BAM (Federal Institute for Materials Research and Testing) for safety with regards to operating with oxygen.

The following tests can be carried out for Closed Circuit Breathing Apparatus with Constant Dosage:

- Low pressure warning
- Leak test with negative pressure
- Inhalation valve
- Exhalation valve
- Drainage valve
- Relief pressure valve
- High pressure leak test
- Constant dosage
- Minimum valve
- Bypass valve
- Residual pressure warning

The test procedure is similar as described for masks [chapter 6.1]. The screens will appear in the same order, but contain device specific information.



Attention!

During the testing procedure the software displays several warnings.

Follow all instructions given in those warnings to avoid damage to the equipment tested or the test bench.

The testing procedure requires the tester to change connections at certain points for certain tests. All safety related steps regarding the equipment will be displayed at the appropriate time, showing these messages cannot be switched off. Here all necessary actions are listed for an overview.

Low Pressure Warning, Inhalation/Exhalation Valve, Draining Valve



- (1) Connect breathing hose to demand valve adapter.
- (2) Bodyguard switched off.

Fig. 50 Connecting device

Bypass Valve



Fig. 51 Bypass

Constant Dosage



(1) Put the open side of the sealing cap R 22 086 over the plunger.

Push red button of the bypass valve briefly.
 ▷ Oxygen shall be audible when flowing into the closed circuit system (flow noise).

(2) Hold sealing cap until the filled breathing bag is holding it.

Fig. 52 Sealing cap



Fig. 53

- (1) Proceed as described in chapter 6.1.
- (2) Follow the instructions regarding adapters and connections displayed by the software.
- (3) After testing is finished, make sure that the apparatus is ready for use again.



MSA

7 Using the Software

The illustrations featured may vary due to software updates and different licences.

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While the testing procedure has been optimised for touch screen operation, an external keyboard and a mouse are only recommended for data base entries.

7.1 General



Attention!

To avoid losing saved tests and data base entries, make sure that the main database is backed up continuously.

- It is recommended to install an antivirus software on the test bench.



MSA offers software maintenance contracts, contact MSA for details.

If the test bench is integrated in a network, further licenses may be necessary, because the license included in the scope of delivery is a single-user license [\rightarrow chapter 10].



If problems occur with the software that cannot be fixed, contact MSA.

7.2 User Administration

- (1) Choose System User Administration User in the menu.
- (2) Create data set via the menu bar.
- (3) Enter user abbreviation, user name and password. Password can be used when no ID card is used.
- (4) Read in the ID card number using the transponder reader or the bar code with the bar code reader.
- (5) Set up user rights in the Usergroup Administration.
- (6) Activate checkbox User has to change password on next login.
- (7) Save changes by clicking the save button.



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User		
	■ ● × × < < > > ● ● ●	# E
User number User miliels User name Possword Transponder Barcode		I her disorbiordet User californis, dir ande postword, I frem Higher with a trackword Gree harsto change persward at the next bain User biorage with coemitient
User groupe	Additional data Modules to be executed after lag in	
Number	Abbreviation Name AD Administrator	
	AD Administrator 1 Workshop user:	
3	2 Standardusers	

Fig. 54

Passwords are not subject to any restrictions concerning choice of characters or number of characters.

(8) If a user ID is no longer needed or an ID card was lost, delete the transponder code. Additionally deactivate the user. If a card was lost it is also possible to overwrite the old number with the number of a new card.



Attention!

Do not delete the user, tests may be stored under the ID number.

7.3 Mandator

The letterhead in the reports and the report language can be changed via the mandator module. MSA's address is set by default. Change the information on first use.

Menu: System - Mandators

- (1) Open the existing mandator by double clicking the Open button.
- (2) Overwrite the existing information with the information of your organisation.
- (3) Modify the footer for print outs on register under *Report settings*.
- (4) Ensure that the country code is set to your language.

Mandators	والأعصاب فبالمعار والمحاوية				<u>_ ×</u>
	× × « • • • • • •	🗰 🔲 🔤 Reorganize			
Mandator Report set	and a second	Contact person		- Superior position	
Name 1		Phone number		Name 1	
Name 2		Fax		Name 2	
Steet	1	Email		Name 3	
Zip Code City		Mobil phone		Street	
Radio identification no.		Internet address		Zip Code City	
County		Type			
Administration district		profession E Voluntary	ndustral - 1964		
Identity number	1			Country code	

Fig. 55 Mandator

(5) Save changes by clicking the save button.

7.4 Settings

- (1) Start the software as described in chapter 4.
- (2) Choose System Settings Settings in the menu.

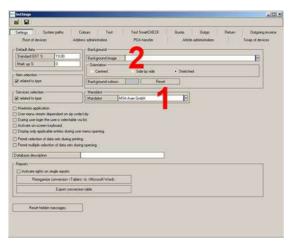


Fig. 56 Data card: Settings

Settings Root of device	System patho es	Colours Address admin	Test	Teol SmartDHECK PDA transfer	Quote Artick	Outpo	Return	Outgoing invoice Swap of devices
Delauit cost objec • Overes Usei	6×9]						
Test Lable to pay	cost	1 1						
Test device works	Ance			1005				
Test device	StratCH	ECK Basic		Ð				
Senial hamponder	200	E ma						
Con pol	Con 1	Com	and table					
 TagScout 	MageTROM	N Scentec						
P Display mensage	"Test was frainh	ed" after texting						
Show visual imp								
Web Can setting								
Activate Web-C	an							
Web-Can	Microsoft	WDN Image Cap	ture (Wei32) Veni	or: 5.1 2500				
			ann lians inhairie	and a sum of the				
Show tristion fra Show automation User 7 enforce	ily change of u	uer / location						
Hudrostatic test cs	inders							
Con port scale	1.0	E						

- Fig. 57 Data card: Test
- (3) Save settings in accordance with these entries.

- (3) Select mandator [1 in the picture].
- (4) If you want to change the background picture you can select a different background image using the selection box [position 2 in the picture].
- (1) Select the required test bench.
- (2) Select the connected test bench [position 1 in the picture].



7.5 Entering Data Sets

Entering and Modifying Addresses



Fig. 58 Menu: Administration - Address Administration

	N N XX	-	+ 6		- 6	210	
Address matching	F	125	Contro	wit .			
obmission				50HF			3
Carpo 1			-				1
Inter 2							
lane 3							
Stored			-				
by Code City	14						
State	- 01						
idence i			-				
outty							
elegin							
alegory			-				
antomier number			2.4				
tone number							
*			0.55				
nal :			63				
descarp			1				
laroide ransponde							
							pandic Additional information
Taniponde Contact person Add					0	Sablation	pandic Additional information
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Fig. 59 Menu: Administration - Create data set

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Abbreviation							
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Name 2	2001						
Name 3							
Stand	Thenenubasie	4	1				
Zip Code City	12059 - 0-		12				
State			1				
Distant			12				
Country			1				
Calegory	-						
Category	11		•				
Customer number							
Phone number	14						
Fax	12		10-1				
Enal			03				
Kolonolege			100				
B-bicide							
Transponder							
		Children and Child	11 22				Nation
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Salutation Fun	cton Title First	name sunary		2	Salutation Function		
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Fig. 60 Menu: Administration - Entering information

(1) Create data set via the menu bar

- (2) Enter the required information. Address number:
- Part 1: abbreviation for address [e.g. ADR] or supplier [e.g. SUPP]
- Part 2: consecutive number

Name 1: Name of company owner or user For possible invoicing or when creating a delivery note, it is important to enter an owner or user.

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Abbreviation				13
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Name 2				
Name 3		2		
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State				
District		9		
Country				
Category		3		
Ealegory				
Customer number				
Phone number				
Fax		197-1		
Enai				
Homepage		9		
Balcode Transponder		-		
Contact petson	Addenes Related adden	net Bank deta	nences Operating resources Decuments App	andx Additional information
	Addresses Related address		Main contect person	
			Main contact person	
			Main contact person Salutation	
			Main contact person Salatation Function Title	
			Main contact person Salatation Function Title	M.
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			De Salutation Salutation Factors Fist name Survey	M. John Nam
			Adin contract person Substance Function Tele Prof. name Prone (cherg)	M. John Nam
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			Main context person Solution Faction The First name Summer Phone (Block Summer Phone (Block Summer	Ma. John Hann. +420000800
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			Control of the second s	Minin John Mann -e00008800 administri@cample.com
			C Min-kohkel periori Sakation Faration Faration Faratione Far	Minin John Mann -e00008800 administri@cample.com
			Construction of the second sec	Ma.
			C Mah contred person C Mah contred person	Man John Mann -400008800 administri@cample.com

Fig. 61 Menu: Administration - Contact information

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Addecs mether	AOR 11 10	Connext	
Abbeniation			
Name 1	MSA		
Name 2			
Name 3			
Sheet	Themannishappe 1		
Ze Code Cey	12059 + Berlin		
State	and the second s		
District			
Country			
Category			
Calegory			
Customer number			
Phone number		1	
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Enai			
Homepage			
Bacode-	1		
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Transponde Confact person	cton Title First name Surviane	And collect period Containion Containion Containion Containion Prove (block) Containion Containinion Containion Containion Con	

Fig. 62 Menu: Administration - Saving information

Several contact persons can also be inserted for each address.

(3) Save the contact information entered using the blue arrow button on the right side of the list view box.

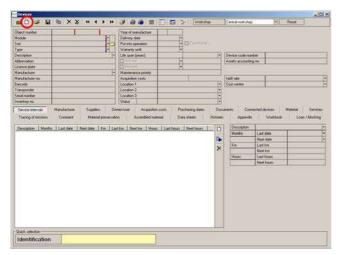
(4) After entering the data save it by clicking on the floppy disk symbol on the menu bar.

MSA

Capturing and Modifying Device Data



Fig. 63 Menu: Technical Services – Devices



Create data set:

(1) Select "create data set" on the menu bar.

Fig. 64 Menu: Technical Services – Devices – Create data set

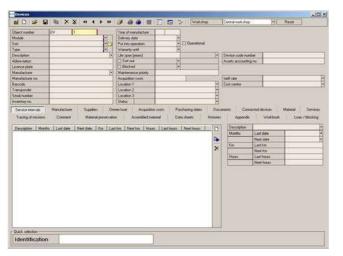


Fig. 65 Menu: Technical Services – Devices – Object number

(2) All fields with a red mark **must** be completed to save the data set.

Object number:

- Part 1: alphanumeric field for abbreviated designation, e.g. DV for Demand valve or RE for Reducer.
- Part 2: consecutive numeric field dependent on part 1. It can be overwritten if required. It is also possible to enter numbers like for example 10000 the application will then select the next available number following the maximum of the last entered number.

GΒ

Object number Module Scat Type	DV .		Yesr of manufacture Delivery date + Put reto operation + Wasserty until +	Densional		
Description Abbreviation	-	Select	a state most begand in the			H
Licence plate		Type	Type	Instar	1+1	-
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Manufacturer rat.		35	Marks	Respectory protection work shop	-	
Barcode		3SP	Marks	Respiratory protection work shop		
Transponder	-	4.07 / 200 bar Steel	Calenders	Respiratory protection workshop		-
Senal number		50.07 / 300 bar	Culedera	Respeakes protection workshop		
Inventory no.		6.01 / 300 bar Steel	Culinders	Respirators protection workshop	1000	
Street and a street of the	Minda	6.81 / 300 bar Composite	Calexian	Respeatory protection work shop		Converse de la conversión de la conversi
Service intervals	Manuta	ADVANTAGE N	Make	Respiratory protection work shop		Material Service
Tracing of microne	Conr	Ay Ele	Cloud circuit breathing appara			book Loan / blocking
		ArEiRe mark.	Maika	Respeatory protection workshop		1100005200
Description Month	n tan	AaG0	BA basic device	Respiratory protection workshop		
		AuGo 200	BA basic device	Respectory protection workshop		
		AMAXX	BA basic device	Respiratory protection workshop	51	1000
		AMAX SL	IIA basic device	Respeatory protection work shop		and the second s
		AUDMOX AET AST ES	A Demand valve	Respiratory protection workshop	58 B	and the second s
		ALROMANCE ALE /ALS MICHO	Demand valve	Respiratory protection workshop		
		ALADMARCK N	Demand valve	Respiratory protection workshop	51	
		AutoMalOCN Micro	Demand valve	Respealory protection workshop		
		Search storig			-11	12
		✓ ox		X Cance		
		Number of data records: 64				
		Number of data records: 64				
Quick selection	-10-		10			
Identification	2					

Fig. 66 Menu: Technical Services – Devices – Available device models

	1	6	ter land			
bect number forkle	DV 1 Respiratory protection woll shop	Year of manufacture Delivery date	01 2006			
lodule -of	Demand valve	Put into operation	• Operational			
voe	LANAQUE AFT AST ESA	Watarity until				
ype Vetophon	AutoMatic AS	Life span [sean]	1 1 3	Device code nue	1000	
ubieviation.	Printing 1	Sor out		Assets accounting		
icence plate		Blocked		[Millen account	878.	
fandacturer	MSA ALER I-	Maintenance priority	10			
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acode	A123496789	Location 1	Deput +	Cott centre	-	
raniconder		Location 2	Depot -			
elia number		Location 3				
nventors no.	0001	Status				
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Tracing of missions Description Mont one arready 6 reads 12	CHERT CONTRACTOR		atesal Data sheets Hotos as Last hours Neet hours D	Appendie Description Months Xis	Last date Next date Last tim Next tim Last hours	1

Fig. 67 Menu: Technical Services – Devices – Introducing device information

If you click on the right-hand arrow next to Type, the window with the available device models opens.

To enter new types \rightarrow chapter 7.7. There are two views available for selecting the required device model.

- the selection view by click on type
- the tree view by click on Module or Sort.

The first option will be used here.

(3) Choose the model from this list by double clicking.

(4) Enter the device information.For example:

- Year of manufacture
- Put into operation
- Warranty until
- Life span
- Manufacturer
- Manufacturer number
- Barcode
- Transponder
- Serial number
- Inventory number
- Location [split into 3 levels, e.g. department - car - location on car]

Single part related serial numbers or device numbers can be entered on the materials register after adding the spare part:

- Pressure gauge number
- Pressure reducer number

bect number	ov I	l la s	Year of manufacture	01 2006				
fodule	Respiratory plotes	tion workshop	Delivery date	01.02.2006 +				
-bil	Demand valve	ton wolkshop	Put into operation	• Dperational				
ype	ALBOMON AET	4S/ ESA	Wanarky unli					
Association .	AUROMINON AS		Life spon [years]		- 1e -	Device code num	ber	
Lbinvision.	and the second second		Sot out		143	Assets accounting	3 46	
icence plate	1000000		C Blocked					
land acturer	MSA ALIER		Maintenance priority	100 IL				
and achieving.	12345600000		Acquisition costs		-25	Kavill Lake		
acode	A123496789		Location 1	Depot	•	Cost centre		
raniponder	1		Location 2					
ola number			Location 3					
wentors no.	10001		Statu					
internetate 6 mile 12		Material preserval		natesial Data sheets purs Last hours Next hours	Hotoses	Description Months	Wakbook semi-annually Last date Next date	Loan / Macking
Description Mont					_0	Description Months F	senv arnually Last date Next date Last km Next km	Lose / Mocking
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Description More result 12 6 years 72					- 0	Description Months F	onne avvivally Last date Next date Last kan Next kan Last hours	- Inconstant

Data Card Device Intervals

Intervals are automatically added based on a model link that can be edited in *Technical services - Settings -Service Intervals*.

To allocate/connect new intervals \rightarrow chapter 7.6.

 Select the data card intervals and then click on the interval to be entered.

Fig. 68 *Menu: Technical Services – Data card device intervals*

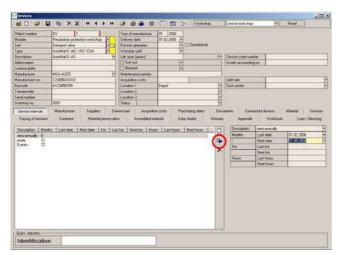


Fig. 69 Menu: Technical Services - Next test date

leject number Folde	DV 1 Respetion wolkshop	Year of m		01 2006	2				
al	Demand value	Put min or			• Dperational				
ice	Demand valve AutoMa/X: AE/ AS/ ESA	Watarity		-					
relation .	ALBOMANCE AS	Life span		-		1.	Device code me	nher I	
Liberriation.	-	17 Sot ou			-	1.1	Assets accounts		_
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landacturer	MSA ALIER	- Maintenar				- 10			
and schemine.	12345600000	Acambo					Kavill take		 -
acode	A123496789	Location 1		Depot		-	Cost centre		
taniconde		Location				1 1 1 1			
ela number		Location							
riventors no.	0001	Statu		-		-			
eaty 12	n Lairdain Nextdain Kni	Last km New	the Hou	s Lathour	Next Yours		Description Monihit	Last date	
Service R	n [Lesidae [Nexidae]Ke]	Last kas New	tke Hou	s: Lathour	Next Yours	1986	Moniha Kas	Next date Last km Next km	
pearly 12 Eyean 72	u [Landon [Nerden]Xe]	Last ken New	tke Hou	n: Laithour	Next Yours	-	Moniths	Next date Last km Next km Last hours	
early 12 years 72	N [Larden [Nexden] Kn]	Latin Nei	the Hou	s Latition	Ned Your	-	Moniha Kas	Next date Last km Next km	
early 12 Eyean 72	u Luitow (Nerden (n.)	Last in New	the Hou	s. Last hours	Next tours	-	Moniha Kas	Next date Last km Next km Last hours	

Fig. 70 Menu: Technical Services – Test is due

- (2) On the right-hand side enter the last test date and jump to the *Next test date* field.
 - ▷ The field is then automatically completed.
- (3) Save the entry by clicking on the blue arrow

The date then appears on the lefthand side.

Red background: test is due.

It is possible that intervals appear in grey. Those intervals have been disabled for the model in the interval module.

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(4)	Carry out the same entry for the
	other intervals.

Object number	lov II	Year of manufacture	01 2006					
łoduje	Respiratory protection work thop	Delivery date	01.02.2006 +					
al	Demand value	Put into operation	+ Dperational					
vice .	ALAMAN AE/ AS/ ESA	Watarey will						
Astoriphion	ALBOMING AS	Life span [sean]		7.1	Device code runi	ber		
absorvation.	and the second s	Sorout			Assets accounting	100		
icence plate	CONTRACTOR 11	E Blocked				1811 C		
forvalacturer	MSA AUER	 Maintenance priority 	11-	- 8				
fanufacturer ric.	1234560000X	Acquisition costs			Keitt sale			
acode	A123496799	Location 1	Depot		Cost centre			
sansponder		Location 2						
erial number		Location 3						
riventory no.	0001	Status		1.8				
States and States	i Comment Material preserv We {Let date {Next date } Km }]			0	Appends Description Months	Workbook yearly Last date	Loon/	blocking
Description Mor				0	Description	yearly	Loss/	100 A
Description Mor ready 12 Lyster 72					Description	yearly Last clate	Loss	100 A
Description Mor				0	Description Months	yearly Last date Next date	Lose /	100 A
Description Mor rearly 12 Eyeart 72					Description Months	yearly Last clate Next clate Last km	Lose /	100 A
Description Mor rearly 12 Eyeart 72					Description Monite 12 Kin	yearly Last date Next date Last km Next km	Losn /	100 A
Description Mor ready 12 Eyean 72					Description Monite 12 Kin	yeady Last date Next date Last km Next km Last hours		80 A
Description Mor ready 12 Eyeant 72	en Lander (Nerder Troj)				Description Monite 12 Kin	yeady Last date Next date Last km Next km Last hours		

Fig. 71 Menu: Technical Services – Other intervals

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	expiratory protection work shop	Delivery data Put into operation	01.02.2006 + + Operational	
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	AMAN ALTASTESA	Life span [years]	1	Device code number
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Licence plate		Blocked		Lighter account in
	SAMER I.	Maintenance priority	1.4	
	345600000x	Acquisition costs		Aveil rate
	123496789	Location 1	Depot +	
Transponder		Location 2		Losson I
Sela number		Location 3		
riventors no. 50	Ya	Status		
Name 2 Name 3 Steel Zo Code City		Name 2 Name 3 Steet Zip Code: Ce	9 H	
Category	1	3	2	

Fig. 72 Menu: Technical Services – Data card devices owner/ To enter new addresses user

Data Card Owner/ User

(1) To preselect entries press F7 on the keyboard to enter the sub selection.

To enter new users/owners \rightarrow chapter 7.2.

- (2) Enter the selection criteria and press F10 to perform the search against the database.
- (3) Click on the arrow at address number.
 - > The window with the addresses already entered opens.

- \rightarrow chapter 7.5.
- (4) Proceed to choose the owner, followed, if required, by the user, from this list.

For possible invoicing or when creating a delivery note, it is important to enter an owner or user.

bect number fockule off	D/ 1 Respiratory potection work shop 2 Demand valve AutoMotX AE/ AS/ ESA	Year of manufacture Delivery date Put into operation Warranto until	01 2006 01 02 2006 - - - - - -	di .		
tescription Ebieviation	AutoMatic AS	Life span [yean] Sort out Blocked		7-	Device code number Accels accounting n	
cence plate fanul'acturer fanul'acturer no accode	MSA AUER 12345600000 A123456789	Blocked Maintenance priority Acquisition costs Location 1	- In Internet	1	Kariff rate Cost centre	
accose sansponder esid number wentes no	A12906/03	Location 2 Location 3 Statue	L'épor			
Service intervals Tracing of missions	Consumit Material preserv	Ovenes/user Acquisit ation Assembled to		History	n Appendu	ted devices Material Servic Workbook Loan / blockin
	iles Desception Amount Total Disphages 0	cost Morshe Last dat	n Next date	D	Number Patinumber Desception	100001 - 1 Distringer
		cost Monthe Last dat	n Nord date	100	Pat number	1
Nurber Part nur 190001 1		cot - Months - Leit da	a [New data]	2	Pat number Description Broug Description Sensi number Link of number Link of neurosa Amount Interval Monite	Polichisco

Fig. 73 Menu: Technical Services – Data card devices material

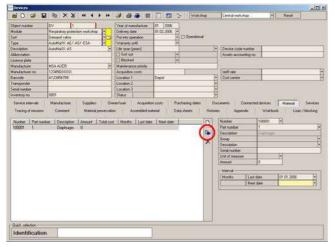


Fig. 74 Menu: Technical Services – Accept information

Forkie -	DV 1 Respiratory protection work shop	Year of manufacture Delivery date	01 2006			
al	Demand valve	Put nto constition	• Operatio	na i		
ice.	MANAGOS AF/ 45/ FSA	Watardo until				
relation	ALEMANX AS	Life span [years]		1	Device code number	
Liberiation.		Sot out		1.	Assets accounting no.	
cence plate	Concernance and	I Blocked			a proprieta a serie a s	
and actum	MSA ALIER	Maintenance priority	1.1			
and schewing.	1234560000x	Acaution costs			Keelill kale	1
acode	A123496799	Location 1	Depot	1		
aniponder		Location 2				
nia rumber		Location 3			0	
wentors no.	2007	Status			18	
	ntee Descepton Amount Total cos Displicação 0	t Morshu Last date 01.01.20		- D	Number Pat number Desception Group	
Number Patroum 100001 1				1000	Pat number Desception Group Desception Serial number	
				2	Pat number Desception Group Desception	
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				2	Pat number Desception Desception Desception Servid number Unit of meanure Associat Interval	
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				2	Pad number Description George Description Serial number Lok of nearuer Annount External Monihe Last dat	!

Fig. 75 Menu: Technical Services – Save information

Data Card Inventory Management

Material is automatically added based on the model connection made in Article Administration.

- (1) Proceed as for *Intervals* $[\rightarrow Fig. 68].$
- (2) Select the material and then enter the last replacement date on the right-hand side.

To allocate/connect new material \rightarrow chapter 7.7.

(3) Accept the information with the blue arrow in the left-hand table.

- (4) Save the information by clicking on the floppy disk symbol.
- (5) In order to enter other devices proceed as described above.

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Related Devices

	Object number	DV 1	100.00	Your of	manufacture"	01 2006			
Office Demostration Proversigned SpecificAdd VLL Af Job Cell Vision yrrid Demostration Auditation VLL Af Job Cell Demostration Auditation VLL Af Job Cell Demostration Auditation VLL Af Job Cell Demostration Demostration Demostration Control Indication yrrid Demostration Demostration <	Nodife		wetches I-			10 02 2006			
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oeros pinte Marcalazare Mil. ALES - Marcalazare Mil. Constructure Marcalazare Mil. Constructure Marcalazare Mil. Soci - Tocny of minors Statet nurder Mitchie Soci - Type Abbenvision - Decospion - Licence pinte - Marcalazare type - Statet nurder - Mitchie Soci - Type Abbenvision - Decospion - Licence pinte - Marcalazare type - Statet nurder - Mitchie - Societies - Statet nurder - Mitchie - Societies	Abbreviation.	10000000					- 1	Assets accounted on	
	Licence plate	Concerned and		I Block	bed			- Property and a second second	
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Istracke Istr	Manufachaevine.	12345600000						Aniil cale	
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Open control Statuti Image: Society control Open contro Open control Open cont	Serial number							•	
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Batoode Transporder Senie number	Tracing of missions	Consume	Material preceiva	ion	Atombied m	atoxial Data sheets	Hans B D	Appendis Dipot number Dipot number Modulis Sort Type Descoption Abbervistion Licence plate	Washash Lass / blocks
Transponder Setial number	Tracing of nessons	Consume	Material preceiva	ion	Atombied m	atoxial Data sheets	Hans B D	Appendie Deject number Module Sei Type Descaption Abbenvalsion Leance plate Manufacture type	Washash Lass / blocks
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	Tracing of nessons	Consume	Material preceiva	ion	Atombied m	atoxial Data sheets	Hans B D	es Appende Dipot number Dipot number Side Side Side Desception Abbenvalon Leance pile Manufacture type Manufac	Washash Lass / blocks
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	Tracing of nessons	Consume	Material preceiva	ion	Atombied m	atoxial Data sheets	Hans B D	Appendie Appendie	Washash Lass / blocks
	Tracing of ensions	Consume	Material preceiva	ion	Atombied m	anna Data Anon ann Menulactum type	Hand B D X	Appendie Appendie	Washash Lass / blocks
n prije	Teacing of missions Object number 1	Consume	Material preceiva	ion	Atombied m	anna Data Anon ann Menulactum type	Hand B D X	Appendie Appendie	Washash Lass / blocks

Fig. 76 Menu: Related devices - data card devices

Data Card Devices Connected Devices

If devices which are permanently related to each other should also be tested as one device it is possible to connect these devices using the data card "connected devices". Devices can be related to each other here, the application then automatically selects the connected device for testing if the other is scanned/selected for a test.

- (1) To achieve this, go to the *Object number* field and enter the following information of the device to be linked:
 - ▷ object number
 - bar code /transponder number [scan possible]
- (2) After entering the information press *Enter* to select the device.

After intermediate saving, the connected device can be seen on the lefthand side.

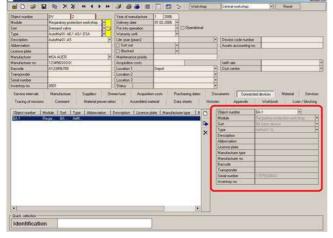
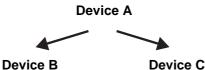


Fig. 77 Menu: Related devices - connected devices



When connecting devices, ensure that a main device [e.g. compressed air breathing apparatus] is established and that the connections are created from this main device. Only from this main device the connection to all connected devices can be traced and changed for the other devices automatically.

Example:



Devices are only tested together if the main device is requested for testing.



7.6 Type Settings

Modifying Type Settings

Image: State of the state	gran Administration Inventory management.	Technical services Accou	arting System Holp Number of unread notes: 0
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Image: Constant Image	retaring	Interval overview	Texts
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industre		Free testing	Type settings
		Manual testing	
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The Safety Company			
The Safety Company		4	
	T	he Sat	fety Company
	Т	he Saf	fety Company
	Т	he Saf	fety Company

Fig. 78 Menu: Technical Services – Settings – Type Settings

Type settings	101.
a 8	
Nel Contraction (Contraction)	

By clicking on the + symbol the next level opens.

The directory tree which is opening is subdivided into:

- Module

 [e.g. respiratory protection workshop]
- Sort
 [e.g. lung governed demand valve]
- Type [e.g. AutoMaXX AE AS]

Fig. 79 Menu: Technical Service - Settings - Type Settings – Directory tree

ype settings	ي الله
Requiring portection markshop So Requiring portection markshop So Requiring portection with disc-Occuments So Requiring portection with disc-Occuments	
All A balance framework CPA CPA Consod scient breathing appendixes Consod scient breathing appendixes Consod value So annot value So annot value So annot value	

Fig. 80 Menu: Technical Services – Settings – File

The file is valid for the entire Respiratory Protection Group. The additional description [e.g. respiratory protection workshop - Documents] refers to the groups / type allocation. Documents:

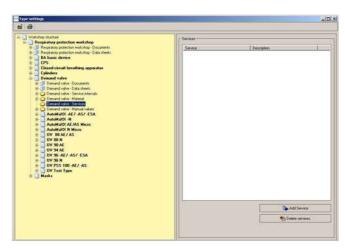
- For incorporating text, PDF documents. Documents and drawings.

Data sheets:

- For creating own input masks [available from Tech.Professional]

Type settings	, افلہ
1.0	
Arschaft and articles matching Arschaft and articles matching Arschaft and articles matching Arschaft and articles matching Des Des	

Fig. 81 Menu: Technical Services – Settings – Allocations



Specific allocations for a specific type. The allocations then have validity for all subordinate types.

- Documents
- Data sheets
- Intervals settings under path: Technical Services – Settings –Intervals
- Material settings under path: Inventory Management - Item administration
- **Services** settings under path: *Management - Service*
- Manual values under path: Technical Services – Settings – Manual Values

Example: allocate service for a type:

- (1) Select the service for the desired type.
- (2) Select the service to be added on the right-hand side.

Input of new services via path:

Administration - Services

Fig. 82 Menu: Technical Services – Settings – Example

Workshop shuckare Respiratory protection workshop		Services		~~~
Construction of the c		30000 	[Devriptor	ĺ
 DV 88 A27 AS DV 88 A87 AS DV 98 A87 AS DV 90 A4 DV 90 A4 DV 96 A57 A57 A5A DV 95 A57 A53 A5A DV 95 S100 A47 A5 Masks 	Unit of measure	Carcel	1	

Fig. 83 Menu: Technical Services – Settings – Enter number

After clicking the add service button a selection window appears. In the selection window the user can directly select the required service.

(3) Enter a number or use F10/OK button to select a service from the opening selection list.

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- 🗋 Walkshop structure	Le Service
Bespiratory protections multi-do- Bespiratory protections multi-do- Bespiratory multi-do- Bespiratory multi-do- Descriptions multi-do- Descriptions Descripti	Service Decoption
	Add Service
	To belote services.

Fig. 84 Menu: Technical Services – Settings – Service

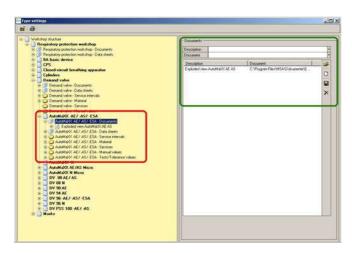


Fig. 85 Menu: Technical Services – Settings – Allocations models

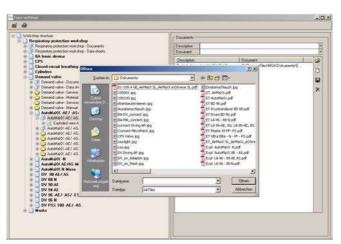


Fig. 86 Menu: Technical Services – Settings – Select document

The service can now be seen on the right hand side.

This service can also be deleted by clicking and then selecting *Delete service*.

The same allocation possibilities as for type also exist for models, the only difference being that here the allocations are only valid for these models. Example: allocating documents for one model:

The prerequisite is that a document is filed on a saving medium, that a permanent access to this medium is available and that the computer can display the selected format, e.g. if a PDF document is selected Adobe Acrobat Reader should be installed.

- (4) Select *Documents* under *Type*.
- (5) Click on the downward arrow on the right side of *Document*.

GΒ

(6) Select the document.

Workshop structure	Documents	_
Academy and a second seco	Descentor (pare part la) <u>Descentor (pare part la)</u> <u>Descentor (pare part la)</u> <u>Des</u>	

Fig. 87 Menu: Technical Services – Settings – Enter name

 Image: Second State Second Second

Fig. 88 Menu: Technical Services – Settings – Intervals

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So Perspecting prefection with App-Documents Perspecting Prefection Prefecting approximate Perspecting Prefection Prefecting Prefecting Perspecting Prefecting Prefecting Perspecting Prefecting Perspecting Prefecting Perspecting P	Petnete 31	Description Dischages		
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(R 🔁 Demand valve - Manual values	Nebe		2.000.000	
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ii) AutoMation wer wor Esk. Documents ii) AutoMation AE/ AS/ ESA - Data iheets	Description			
8 2 AutoMalX AE/ AS/ ESA - Service interv	Group Description			
III 🗳 AutoMatX AE/ AS/ ESA - Material III 🌗 1 - Disphragm	Cost centre			
AufdMalX AE/ AS/ ESA - Services AufdMalX AE/ AS/ ESA - Menual value AufdMalX AE/ AS/ ESA - Tent/Tolese	✓ DK. (#10)	X Cancel		
Analysia C H Analysia Analysi				Add material
(i) 🔄 Maaks				Can may baceda

Fig. 89 Menu: Technical Services – Settings – Allocations material

- (7) Enter the name of the document under *Description*.
- (8) Save by clicking on the floppy disk symbol on the right-hand side.

You can now add other documents, those documents can be viewed in the devices or the device selection using the document view button.

Intervals can be entered specific to type or models. Intervals can be added or removed by setting or removing a tick.

- Tick at type = interval for all models of this type
- Tick at model= interval only for this model

Example: allocating material for one model:

- (1) Select the material for the desired model.
- (2) Select on the right-hand side the material to be added.
- (3) Enter a number or use F10 to select a material from the list which is opening.

Input of new material via path:

 Inventory Management - Item administration

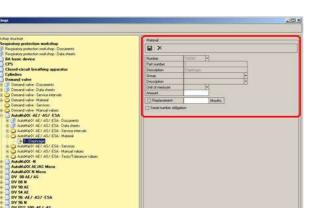


Fig. 90 Menu: Technical Services – Settings – Months/number

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Description Standard DV pos. (MSA)
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Cod centre *
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- Standard eterval
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[] Information
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- Test planaton alter the test has been friched
PT Distance Mar
Display the
Deplay life

Fig. 91 Menu: Technical Services – Settings – Standard test

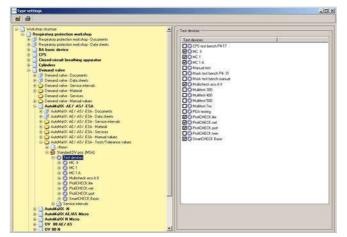


Fig. 92 Menu: Technical Services – Settings – Test Sequences

(4) Click on the material appearing in the directory tree and, if required, add the months for the next replacement as well as the required amount of spare parts for this article.

The monitoring of the interval starts with the next test following this change. Additionally it is possible to mark *Serial number obligation*. The software will then request a serial number when testing the device.

(5) Save the entry by clicking on the floppy disk symbol.

In the settings a standard test is available for each model.

This test is entered for each test bench.

The test process and the tolerance values for a device model are concealed behind the standard test.

- (1) Enter test designation.
- (2) Predetermine standard interval that will be marked in the device selection window after selecting the device if none of shown intervals is due.

To enter new tests: *Technical services - Settings - Tests*

The matching test values for the specific test bench are entered.

(1) Click on the + before test process and then on test bench.

On the right-hand side you will now see for which device the test process has been set up.

(2) Click on the + before **Test bench**.

Only those test benches are shown which have been activated in the menu *Technical Services – Settings – Test Benches*.



On the right you see now all connected test sequences for the selected test bench activated in the test bench module.

- (3) To change one of the test values open the sequence by double clicking on it [located on the left side of the window below the test bench].
- (4) Modify tolerance values by selecting a test and then modifying the values on the right-hand side.
- Save the information by clicking (5) on the floppy disk symbol.

Possible intervals:

- After use
- Half annually
- Annually
- Every 2 years -
- Every 6 years
- Menu: Technical Services Settings -Fig. 94 Intervals directory Lype se

To enter new intervals: Technical services - Settings - Service Intervals If a test is carried out after a certain interval at a certain date, all shorter intervals will also automatically be set to this date.

Fig. 93 Menu: Technical Services - Settings -**Test Sequences** ---

Marke	
Fig. 95	Menu: Technical Services – Settings - Tolerance values

S AutoMaRX -AE7 -AS7 -ESA	1 Tolerance values	
😤 🎯 AukoMakov, AEV ASV ESA-Documente	2 Million Contraction Contract	
S AutoMaio: AE/ AS/ ESA-Data cheets S (2) AutoMaio: AE/ AS/ ESA-Service intervals		
S D AutoMarch AL/ AS/ ESA - Service Mercals S D AutoMarch AL/ AS/ ESA - Material	Duration of test in pec. [60	
Automatics and Astronomy Astronom	A REAL PROPERTY AND A REAL	
W C AutoMate AE/ AS/ ESA - Manual values	Measuring Min value Max-value Min Max	
E AutoMaio: AE/ AS/ ESA - Tects/Totecance values	Low pressure 6.5 8.5 11 1	
E CNWY Standard DV pos. (MSA)		
E O Yest devices E O MC II		
# O HC 1		
BO HC1A		
A Multicheck eco & II		
E O PolOECK.Re	Description of test	
E O PoliCHECK ret	Considering day	
IN LOW REPORT AND DOWN		
B C DV stong precisive with MP		
B D V static closing pressure		
18 💭 DV don w/ atthciallung 40/25		
B Housing	Testing violation before starting the test	
18 and Medium pressure hose	Display file	
H C Photoeck	D Information	
E Q SeatOE(X.Base	100000-000	
E () Service viewals		
E AutoMaXX-N		
E AutoMatOX AE /AS Micro		
E AutoHalXX N Micro	Testing information after finishing the test	
* DV 88 AE/AS	Dirokay tile	
	I Information	
= DV SH AF		
± DV 96-AE7-AS7-ESA		
± 0V 96 N		
DV PSS 100 -AE7 -AS		



MSA

7.7 Creating New Types

Creation via Pool

The pool for respiratory protection devices is maintained by MSA. If it is required to add an additional type for implementing in the data pool, follow this instruction to enter the required device to your testing database.

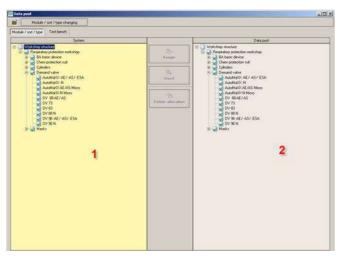


Fig. 96 Menu: System – Settings – Data Pool

After opening you see a split window with the already entered devices on the left and the available devices in the pool on the right:

To add a device model to your testing database:

- (1) Select the model on the righthand side and the device type on the left-hand side.
 - The insert button in the middle is then activated.

After clicking on this button the device model is available on the left-hand list and you can use this device model in your device database.

(2) Check the values entered under Settings – Type Settings and make sure that all required tests are available and the added values are correct.

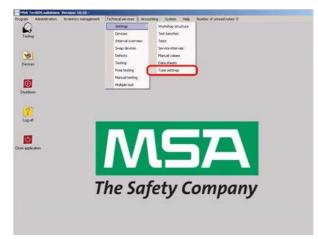


Fig. 97 Menu: Technical Services – Settings – Type Settings



Creation without pool

MSA

- Open the directory tree. (1)
- Select a device sort. (2)

Type settings		-10
Bergaharay protection with Arge- Bergaharay protection with Arge- Bergaharay protection with Arge-Deal Parties Bergaharay protection with Arge-Deal Parties Bergaharay protection with Arge-Deal Parties Bergaharay protection with Arge-Deal Parties Demond with - State Parties Demond with - St	Digitig initian having for the type	

Fig. 98 Menu: Technical Services - Settings -Select device model

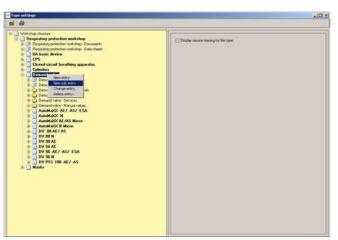


Fig. 99 Menu: Technical Services – Settings – New subentry

i @			
Media packas Researce precision matching Researce precision matching Researce precision matching Researce precision matching Researce precision Researce researce Re	beets	Display minimi having for the type	
	Teet DV Test Type		

Fig. 100 Menu: Technical Services - Settings -Model designation

(3) Press the right mouse button and then go to New sub entry.

(4) Enter the model designation and save the entry.



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Image: A sector in the sect	

Fig. 101 Menu: Technical Services – Settings – Enter required data

Type settings	التلج
10	
With Angle (status) With Ang	

All test sequences can now be set up manually.

(5) Enter the possibly required data

as when modifying the type settings

as described in chapter 7.7.

Documents

Manual values

Services

Material

-

-

_

-

Or:

Fig. 102 Menu: Technical Services – Settings – Set values manually

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🛞 🗋 Cylinders	
Demand valve Decaments	l∎ ×
	Description Standard DV post, (MSA)
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E Demand valve - Material	Lize sun expenditure 0
Demand valve - Services	
E Demand valve - Manual values	
E AutoMatox AE7 AS7 (ESA	C) Test pressure 200
	Standard interval
😑 🧭 AutoMakX: AE/ AS/ ESA-Data cheets	Description
主 🏠 AutoMikOV, AE/ AS/ ESA - Service intervals	
🗄 🥥 AutoMalot. AE/ AS/ ESA - Material	
± 💭 AutoMakX, AE/ AS/ €SA - Services	
E C AutoMaXX AE/ AS/ ESA - Manual values D C AutoMaXX AE/ AS/ ESA - Tech/Tolerance values	
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AutoMa20C ALZAS Micro	
E AutoMaXX N Hices	12000-000000000000000000000000000000000
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🚊 🔂 DV 90 AL	[7] Information
± _ DV 94 AE	
- DV 96-AL - AS7-ESA	
* DV 96-AE AS7-ESA * DV 96-N	1
* DV 96-AE/AS/-ESA * DV 96-N * DV PSS 100-AE/-AS	
± DV 96-AL (-AS/ ESA ± DV 96 AL (-AS/ ESA ± DV 95 10 -AE/ AS ⇒ DV PSS 10 -AE/ AS ⇒ DV Text Spec	C Test Momenton aller the test has been finished
DV 95-ALT_AS7-ESA DV 95-ALT_AS7-ESA DV PSS 100-AL7-AS DV PSS 100-AL7-AS DV Test Type S0 7 Test Type S0 7 Test Type	C Test Momenton aller the test has been finished
± DV 96-AL (-AS/ ESA ± DV 96 AL (-AS/ ESA ± DV 95 10 -AE/ AS ⇒ DV PSS 10 -AE/ AS ⇒ DV Text Spec	Diplay Ne
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try vs Ar, Ar A, AA try vs Ar try Ar try Ar try vs Ar try vs	Test information after the test has been finished. Display life Information

Fig. 103 Menu: Technical Services – Settings – Copy test process

• Copy the test procedure using drag and drop.

To copy a test process from another device that is tested similarly:

 Select a test process of a model of the same type, press and hold the left mouse button and drag the test process



8	
Closed-circuit breathing apparatus Colondors Colondors	의 - Test
B Demand valve	Q X
Barrierd veive - Documents Barrierd veive - Data centers Demand veive - Data centers Demand veive - Service veive Demand veive - Marcel veilet Demand veilet Dem	Everyption Standard Of voice SHAA Long sin pagewark 0 Cont cares Cont cares Cont cares Sharkad at lenvil Becipitan Topologian
AutoMaRCALIAS Micro AutoMaRCALIAS Micro AutoMaRC N Micro	
DV BLAE/AS DV BLAE/AS	Test information before starting the test
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S OV Test Type	Test internation after the test has been insched
OV Test Type - Documents OV Test Type - Data theets	Display Ne -
E 🖕 DV Test Type - Service intervals	
W Test Type - Method W Test Type - Method W Test Type - Method W Test Type - Method water W Test Type - Method	1

to the entry "New" of the newly added types under Tests/tolerance values and release the mouse button.

Fig. 104 Menu: Technical Services – Settings – Newly created models

Informa	ition	×
0	Do you really want to copy test?	
	Accept Reject	

Fig. 105 Menu: Technical Services - Settings - Confirm

ð		
AutoMatics In	Tell logances	
B: Anothology AL AS Microsoft	Tel segunos: Tel segunos: Conserver Conse	T.
B → D' different for post- B → D' for general with the B → D' and post- B → D' and post- B → D' and a transportune B → D' of an of all of the post- B → D' of an of all of the post- B → D' and B ∧ D' B → D' A → D' B → D' B → D' A → D' B →	☐ Une web can be testing	

Fig. 106 Menu: Technical Services - Settings - Check test

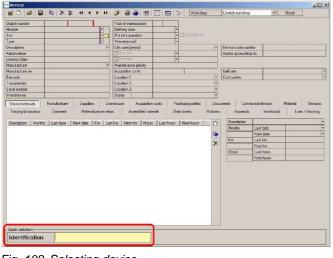
- (2) Confirm the appearing message with Yes, and the complete test procedure will be copied to the new created type.
- (3) Check the individual test procedures

and

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B O PRODICK Re	D Information
E O PMOREX IN	
B DV song precisive with MP	
III and DV activating previous III and DV static closing previous	Testing information after finishing the test
B DV dps. w/ attricial.lung 40x25	Diricialy the
B 2 Housing B 2 Medium pressure hose	Distortation
Big noole Big noole Soft Over Ox port	

Fig. 107 Menu: Technical Services – Settings – Check tolerance values

7.8 Open Saved Tests of Devices



Saved test results can be viewed.

- Double-click on icon *Devices* or use path Technical Services – Devices.
- (2) Use the identification field to select a device $[\rightarrow \text{ chapter 6.1}]$.

Fig. 108 Selecting device

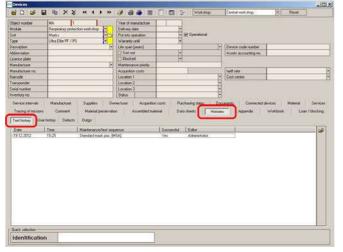


Fig. 109 Selecting test

- (1) Click on *Histories*.
- (2) Click on Test history.
- (3) Double-click on the test to be retrieved.

the tolerance values connected in combination with the device test value card.



(4) Click on Values.

The test can now be viewed.

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lavcode						device					Soft out device
saniponder						npike	1				User / Location change
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Fig. 110 Opened test

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7.9 Print

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acode			Location 1	1	Cost canks	
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old runber			Location 3			
mentos no.			Status		1 0	
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Tracing of missions Test hotory Use Date	a Conneré arhotoy Delecta Tane	Material preservato Dutyp Maintenance/text seg	ance	Successful Editor	m Appends	TRACES IN STREET

Fig. 111 Printer Symbol

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Fig. 112 Report selection

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Description Mont pearly 12 Eyean 72	ha [Leirdon [New den]Tin]L	ngtkas Newthan Hou	urs Laethours Ne		Moniba Yos	Next date Last km Next km	:
Description Mont pearly 12 Eyean 72	hi [Lardon Needon Yei]Li	notkos Nenitkos Hou	us Lathous No		Moniba Yos	Next date Latt km Next km Latt hours	;
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Description Mont pearly 12 Eyean 72	n Lerder (Merden fre fi	etim Nectim Ho	us Lathous Nr		Moniba Yos	Next date Latt km Next km Latt hours	
Description Mont pearly 12 Eyean 72	n [Leider [Neiden]te]t	stim Nether Ho	un Last Hours No		Moniba Yos	Next date Latt km Next km Latt hours	
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Fig. 113 Printer symbol with arrow

There are two possibilities for printing information.

Printing various data:

- (1) Click on the printer symbol.▷ All fields turn green.
- (2) Enter a search criterion in one of the green fields and then click on the printer symbol again.

(3) Select the corresponding report from the list using the buttons at the bottom of the window.

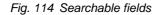
or, if you have already requested a data set and wish to obtain a print-out:

(4) Click once on the printer symbol with the blue arrow.

You now obtain the same list as illustrated above, to select the print out report. The selected print out will only show the information of the requested data set.

		***		🖸 🖬 🦕 Workshop			
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All reports allow a data selection, follow the same selection arguments as described to open change datasets in chapter 3.5. All fields highlighted green can be used for searching.



Startchate	Startdate
Please enter Date in format "yyyy-mm-dd".	
nddate	Brocoste
Please onler Date in format "yyyy-min-dd".	

Other reports request a new input mask.

- (1) Click on *Start date* and enter the desired date at Discrete Value.
- (2) Do the same for *End date*.
- (3) Confirm the entry with OK.▷ The report is now printed out.

Fig. 115 Other reports

The explained printing functionality is available for all other modules that provide the two printer symbols in their symbol menu.

8 Maintenance and Cleaning

Attention!

Before carrying out maintenance work, depressurise the test bench and unplug the power cable from the electrical outlet.

8.1 Test Bench

Check the filters of the fans [\rightarrow fig. 1] every three months. The filters should only be lightly soiled.

Replace damaged filters.

Cleaning the filters

- (1) Remove the filter casings by pulling them off.
- (2) Take out the fleece filters.
- (3) Clean the fleece filters under running water.
- (4) Let the fleece filters dry completely.
- (5) Put the filters back into the casings and clip the casings to the test bench.

8.2 Test Head

In order to protect the test head from premature ageing protect test head against sun radiation with the protective hood supplied.

In case it is not in use, keep the test head covered.

When necessary, not more often than every three months, apply the provided silicone oil **sparingly** on the test head [\rightarrow chapter 10.7] and leave it on overnight [uncovered]. If necessary, remove any excess oil the next day.



Attention!

Overuse of silicone oil damages the test head.

8.3 Touch Screen



Attention!

Before cleaning the touch screen, unplug the power cable from the electrical outlet.

- (1) Clean the touch screen only with the provided microfibre cloth or special screen-cleaning tissue.
- (2) To clean the touch screen, lightly dampen the cloth with water. If possible, use a solution suitable for the antistatic coating.
 - ▷ Handle the touch screen with care as surfaces can scratch and show scuff marks.

Attention!

Do not use benzene, thinner, ammonia, abrasive cleaners, or compressed air. Avoid using detergent of any kind as some detergents leave a milky film on the surfaces. Do not allow water or other liquids to spill on or into the test bench.

8.4 Pressure Gauge Camera

The pressure gauge camera is located behind a window. Clean this window similar to the touch screen.



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8.5 High Pressure Lines

In case of damage to the high pressure lines from heat, chemicals, mechanical impact or similar that can be detected, the test bench must be taken out of service and the components concerned must be replaced without delay by an authorised service centre.

8.6 Annual Calibration

Only use a calibrated test bench. MSA recommends one annual calibration.



9 Technical Data

The technical data can vary, depending on the test bench configuration. Below three exemplary configurations are listed.

9.1 SmartCHECK - Basic Version

Measurements without test head [L x W x H]	Ca. 600 x 370 x 250 mm
Measurements with test head [L x W x H]	Ca. 600 x 370 x 470 mm
Weight test bench	Ca. 23 kg
Operating temperature range	+5 °C - +60 °C
Operating humidity range	Between 15 % and 80 %
Operating voltage range	110V - 240V AC 50/60Hz
Fuses	2 A
Air supply requirements	Breathable air [min. EN 12021 or USCGA grade D]
Medium pressure	6 - 10 bar

9.2 SmartCHECK - Modules (with Lung and Standard High Pressure)

Measurements [L x W x H]	Ca. 720 x 600 x 250 mm
Weight test bench	Ca. 46 kg
Operating temperature range	+5 °C - +60 °C
Operating humidity range	Between 15 % and 80 %
Operating voltage range	110V - 240V AC 50/60Hz
Fuses	2 A
Air supply requirements	Breathable air [min. EN 12021 or USCGA grade D]
Medium pressure	6 - 10 bar
High pressure	300 - 315 bar
f.	

9.3 SmartCHECK - Modules (with Lung and Adjustable High Pressure)

Ca. 720 x 600 x 250 mm
Ca. 50 kg
+5 °C - +60 °C
Between 15 % and 80 %
110V - 240V AC 50/60Hz
2 A
Breathable air [min. EN 12021 or USCGA grade D]
6 - 10 bar
300 - 315 bar

(GB)

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10 Ordering Information

10.1 Required for putting into service first-time

Description	Part No.
Shut-off valve 300 bar, SmartCHECK	10144939
High pressure supply line	10096973
Test equipment HP Hose Cylinder connection	10099265
Fitting hose 8S/8L, test equipment	10144991
Straight reduction 08L/08S, SmartCHECK	10146804
Elbow socket 08S, SmartCHECK	10146805
Power supply cable EU/CE, test equipment	10144984
Power supply cable UK, test equipment	10145003
Power supply cable US, test equipment	10145004
Power supply cable AU, test equipment	10145005
Power supply cable CN, test equipment	10144983
Gasket 5 pcs, test adaptor, SmartCHECK	10145936
High pressure supply hose, SmartCHECK	10146803
Log-on cards, starter set, SmartCHECK	10144987
TecBOS.Tech standard initial license	10126009
TecBOS.Tech Professional initial license	10126010
TecBOS.Tech Premium initial license	10126021
TecBOS.Tech standard subsequent license	10126022
TecBOS.Tech Professional subsequent license	10126023
TecBOS.Tech Premium subsequent licence	10126024
TecBOS.Tech Mobile Working	10126025

10.2 Test Adapters for Testing of Masks





(GB)

Description	Part No.
Adapter, Plug, Mask Leak Test, _GDV 88, 96 AS [positive pressure masks with quick connect]	D5175524
Adapter, Mask Leak Test, PS-MaXX [positive pressure masks with AutoMaXX quick connect]	10035659
Ultra Elite Sealing cap [for sealing the exhalation valve of Ultra Elite masks]	D2056703
3S Test cap, assembly [for sealing the exhalation valve of the positive pressure 3 S mask]	D4074895
Exhalation Valve Closure [for sealing the exhalation valve of the negative pressure 3 S mask]	D5135039-SP
Exhalation Valve Closure 3S/CPS, Spare (for sealing the exhalation valve of the negative pressure 3 S mask)	D5135047-SP



Interspiro quick connect]

GB

Holder for MHC masks, complete

10108526

(GB)

10.3 Test Adapters for Testing of Lung Governed Demand Valves

Description	Part No.
LGDV test adapter RD40, SmartCHECK	10144996
LGDV test adapter M45x3, SmartCHECK	10144998
Test Adapter LGDV 88, 96 AS, SmartCHECK	10145001
LGDV Test Adapter ESA, SmartCHECK	10145000
Test LGDV AutoMaXX AS, SmartCHECK	10145002



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Description	Part No.
High Pressure Test Line SCBA SmartCHECK	10144992
SCBA test adapter 200 bar, SmartCHECK	10144993
SCBA test adapter 300 bar, SmartCHECK	10144994
Medium pressure extension line 1,5 m	D4066815
Medium pressure extension hose 0,5m	10046165
Test Adapter, AirGo Compact	10103503
BD Compact Test adapter	10029681
Test adapter-Kit MicroMaXX	10056761

10.4 Test Adapters for Testing of SCBA



Description		Part No.
CPS Leak Test Accessory [with safety valve]		10108449
CPS Valve Leak Test Accessory	\bigcirc	10108450

10.6 Test adapters for Testing of Closed Circuit Breathing Apparatus

Description	Part No.
AirElite Leak Test Accessories [complete set in a case]	10108185
AirElite Valve Leaktest Adapt [part of 10108185]	10108187
Air Elite Leak Test Adapter [connects test head with Air Elite quick connect, part of 10108185]	10108186
BG 4 Leak Test Adapter [connects	10108177

with BG 4 quick connect]	

10.7 Accessories

Within Scope of Delivery

Description	Part No.
Microfibre cloth 40 x 40 cm SmartCHECK	10109451
Silicon oil/bottle 100 ml	10115053
Touchpen	10115112
Protective Hood for Test Head	10115131



Not Within Scope of Delivery

Description		Part No.
LP-Leaktest Access. Eye-Mouth		10108271
Log-In card User [10 pcs]	User	10115071
Log-In card Admin [5 pcs]	Administrator	10115093
Printer for Test Equipment		10045962
TFT-Monitor 17" for Test Equipment		10055641
TFT-Monitor 19" for Test Equipment		10093491-SP
Handheld bar code reader		10047444
XCVR:IR, IRDA, PC-JETEYE [jet eye RS 232]		655505
PA 37, DA 300-2 Test gauge, assembly (test gauge for 200 bar cylinders)		D4065902
Test gauge (cylinder press 400bar) (test gauge for 300 bar cylinders)		D4080929
Tool for push to connect Adapters		10035756
Barcode Labels for using inside [masks] or outside [SCBA or cylinders] 100 pieces		
Barcode Labels – outside		10025420
Barcode Labels – inside		10025422

Tool, Valve Exchange masks and suits

D2055038

Description	Part No.
Dust filter, Pkg 2pcs, spare	10093710
Transponder antenna, spare	10088332 -SF





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