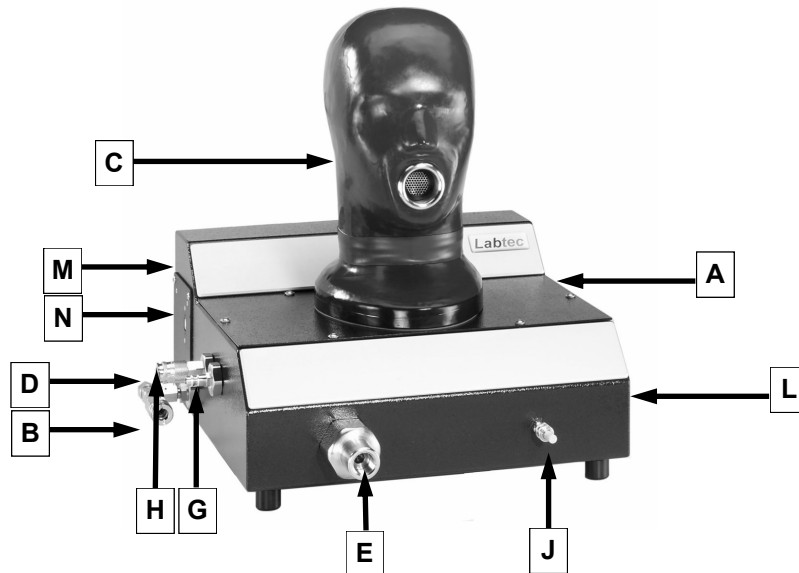
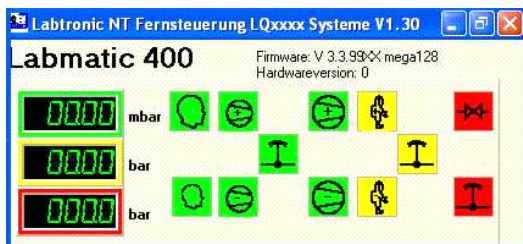


Appendix of operation manual for Test Bench Labmatic 400 Single test via remote control



A = Test bench housing
B = HP-Coupling
C = Test head
D = HD screw connection
E = Apparatus connecting 300 bar
G = MP Apparatus connecting pin

H = MP demand valve connecting coupling
J = CPS filling coupling
L = Throttle valve
M = Power with OF / ON switch
N = USB interface



















	Pump -10 l/min (Button)
	Pump +10 l/min (Switch)
	Pump -5 l/min (Button)
	Pump +5 l/min (Button)
	Low pressure exhausting (Button)
	Medium pressure exhausting (Button)
	ON / OUT HP valve (Switch)
	High pressure exhauster (Button)
	Discharge test head (Button)
	Filling test head (Button)
	Exhausting CPS (Button)
	Filling CPS (Button)

A 1 Testing Masks

1 Leakage










- 1.1 Leakage test with open A-valve at --# mbar (standard test, should always be carried out)
- 1.2 Leakage test with sealed A-valve at +# mbar (performed to locate any leak detected by test 1.1)
- 1.3 Opening pressure of the outlet valve

Test step	Operation	Comments	Controls
1.1.1	Wet the outlet valve rubber slice. Breathing connection of mask close with the dust cap.	Flutter valve must be thoroughly moist	
1.1.2	Mount mask on test head, pull straps tight, inflate test head	A few seconds is usually long enough	
1.1.3	Adjust negative pressure to exactly - # mbar	By means of pressure relief valve	 
1.1.4	Pressure increase after # min at the LCD (LP) read off and compare with the nominal value		
1.1.5	Deflate test head, remove mask		
1.2.1	Wet the outlet valve rubber slice. Breathing connection of mask close with the dust cap.		
1.2.2	Mount mask on test head, pull straps tight, inflate test head	A few seconds is usually long enough	 
1.2.3	Adjust negative pressure to exactly - # mbar	By means of pressure relief valve	
1.2.4	Pressure increase after # min at the LCD (LP) read off and compare with the nominal value		
1.2.5	Deflate test head, remove mask		
1.3.1	Mount mask on test head, pull straps tight, inflate test head	A few seconds is usually long enough	
1.3.2	Pump +10 l/min switch on.		
1.3.3	Opening pressure at the LCD (LP) read off and compare with the nominal value		 
1.3.4	Pump +10 l/min switch off.		
1.3.5	Deflate test head, remove mask		

A 2 Testing demand valves

2 Demand valve

- 2.1 Leakage: Pressure rise after # min at --# mbar negative pressure / overpressure
- 2.2 Static pressure / overpressure of demand valves
- 2.3 opening pressure / activating pressure on # l/min exhausting

Test step	Operation	Comments	Controls
Preparation	Completely relieve pressure on test stand		
	Couple demand valve to test head	E.g. with adapter RD 40	
2.1.1	Generate positive pressure of > □+# mbar Generate negative pressure of > □- # mbar	Leakage test with positive pressure Leakage test with negative pressure	
2.1.2	Pressure change after # min at the LCD (LP) read off and compare with the nominal value		
	Couple demand valve to test head		
2.2.1	Open main valve		
2.2.2	Pressure change after # min at the LCD (LP) read off and compare with the nominal value		
2.2.3	Close main valve		
2.3.1	Open main valve		
2.3.2	Keep open the main valve		
2.3.3	Switch on the vacuum pump -10 l/min		
2.3.4	Pressure after # min at the LCD (LP) read off and compare with the nominal value		










A 3 Testing Breathing Apparatus

3 Pressure display (comparative measurements with pressure gauge)

3.1 Pressure comparison at (e.g.) # bar

4 Warning system

4.1 Activate pressure

Test step	Operation	Comments	Controls
Preparation	Connect breathing apparatus with HP connector		
	Couple medium-pressure connection point on breathing apparatus with nipple and nipple on demand valve hose with coupling. Plug in demand valve to test head.		
	Open main valve		
	Close main valve		
3.1.1	Pressure decrease to the test pressure # bar	At BA pressure gauge read off	
3.1.2	Pressure at the LCD (HP) read off and compare with the nominal value		
4.1.1	Open main valve		
4.1.2	Close main valve		
4.1.3	Pressure decrease	the warning system starts	 
4.1.4	Activate pressure at the LCD (HP) read off and compare with the nominal value		

















A 3 Testing Breathing Apparatus

5 Pressure reducer

- 5.1 Medium pressure, static at # bar inlet pressure
- 5.2 Medium pressure, dynamic at # l/min ventilation
- 5.3 Subsequent pressure rise after # min










6 Complete apparatus

- 6.1 Pressure loss with max. inlet pressure after # min

Test step	Operation	Comments	Controls
5.1.1	Open main valve		
5.1.2	Close main valve		
5.1.3	Pressure decrease to the test pressure # bar inlet pressure		 
5.1.4	Medium pressure at the LCD (MP) read off and compare with the nominal value		
5.2.1	Open main valve		
5.2.2	Vacuum pump -10 l/min switch on		
5.2.3	Medium pressure at the LCD (MP) read off and compare with the nominal value		
5.3.1	Open main valve		
5.3.2	Close main valve		
5.3.3	Medium pressure at the LCD (MP) read off and compare with the nominal value. Start the stopwatch		
5.3.4	Pressure change after # min at the LCD (LP) read off and compare with the nominal value		
6.1.1	Mount mask on test head, pull straps tight, inflate test head		
6.1.2	Couple demand valve to test head	E.g. with adapter RD 40	
6.1.3	Open main valve		
6.1.4	Close main valve		
6.1.5	Medium pressure at the LCD (MP) read off and compare with the nominal value. Start the stopwatch		
6.1.6	Pressure change after # min at the LCD (LP) read off and compare with the nominal value		

A 4 Testing Protection Chemical Suit

- 1 Leakage**
 1.1 Leakage of the suit
- 2 A-Valve**
 2.1-4 Leakage test of A-valves nos. 1-4 after # min at --# mbar

Test step	Operation	Comments	Controls
7.1.1	Connect one flutter valve with a test adapter; seal all other flutter valves	Brand-specific adapter, e.g. Auer CPS adapter set	
7.1.2	Couple filling hose of test adapter into filling connector		
7.1.3	Insert measuring hose of test adapter into mask testing head	Adapter CGA 2000	
7.1.4	Open main valve	High pressure available for test stand	
7.1.5	Stretching phase: Press filling button to inflate CPS	CPS is inflated to >xx mbar; system then turns itself off automatically	
7.1.6	Press aspiration button and air vent to reduce pressure		
7.1.7	Settling phase: Start the stopwatch		
7.1.8	When time on stopwatch has elapsed, lower filling pressure to test pressure		
7.1.9	Pressure change after # min at the LCD (LP) read off and compare with the nominal value		
7.1.10	Close main valve		
7.1.11	Relieve pressure on system		
8.1.1	Plug measuring hose of test adapter into mask test head	Adapter CGA 2000	
8.4.1			
8.1.2	Connect flutter valves 1, 2, 3, 4 from inside with test adapter	Brand-specific adapters, e.g. MSA CSA adapter set	
8.4.2			
8.1.3	Generate negative pressure of >--# mbar	5 l/min pompe	
8.4.3			
8.1.4	Regulate negative pressure to give precisely - # mbar	By pressure relief valve	
8.4.4			
8.1.5	Pressure change after # min at the LCD (LP) read off and compare with the nominal value		
8.4.5			