

BAYLAN

WATER METERS



BTB-07V3

SEMI AUTOMATIC TEST BENCH

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IMPORTANT: VISUAL CHANGES AND VARIETIES CAN BE SEEN ON PICTURES AND FIGURES.

1. General Information

Length(mm)	Number of pieces	Q ₃ (m ³ /h)	Nominal Diameter
170	10	2,5	DN15
190	10	2,5 - 4	DN20
260	6	6,3	DN25

2. Parts of Test Bench



Figure 1

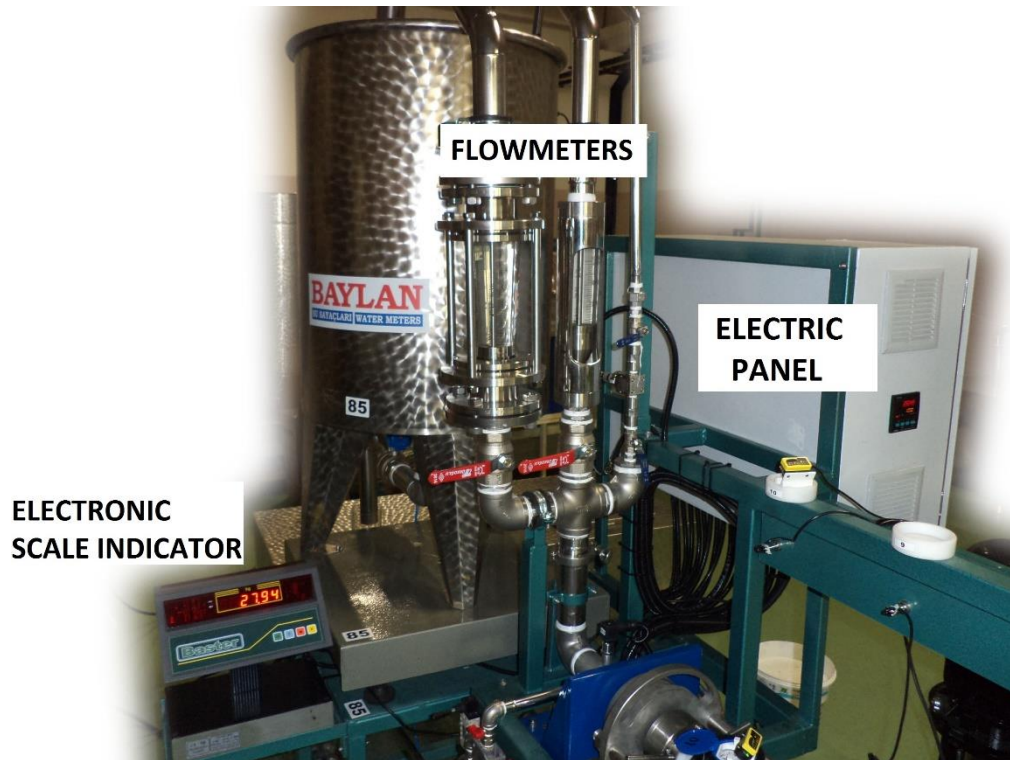


Figure 2



Figure 3

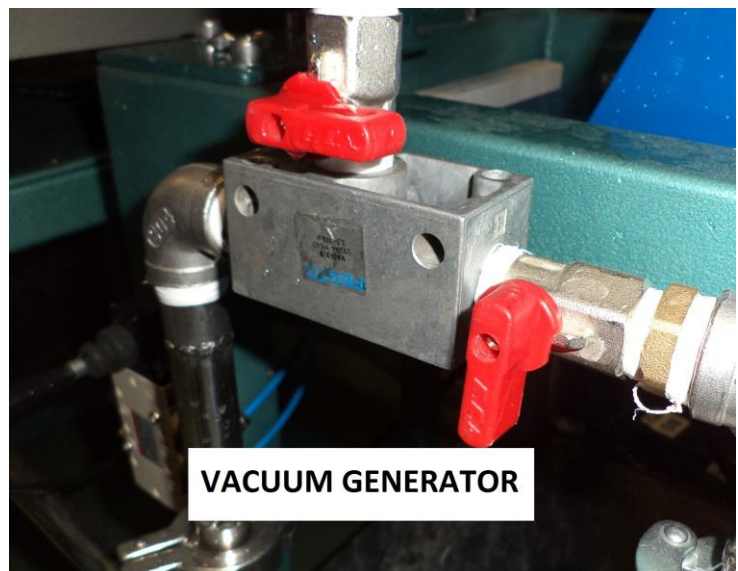


Figure 4

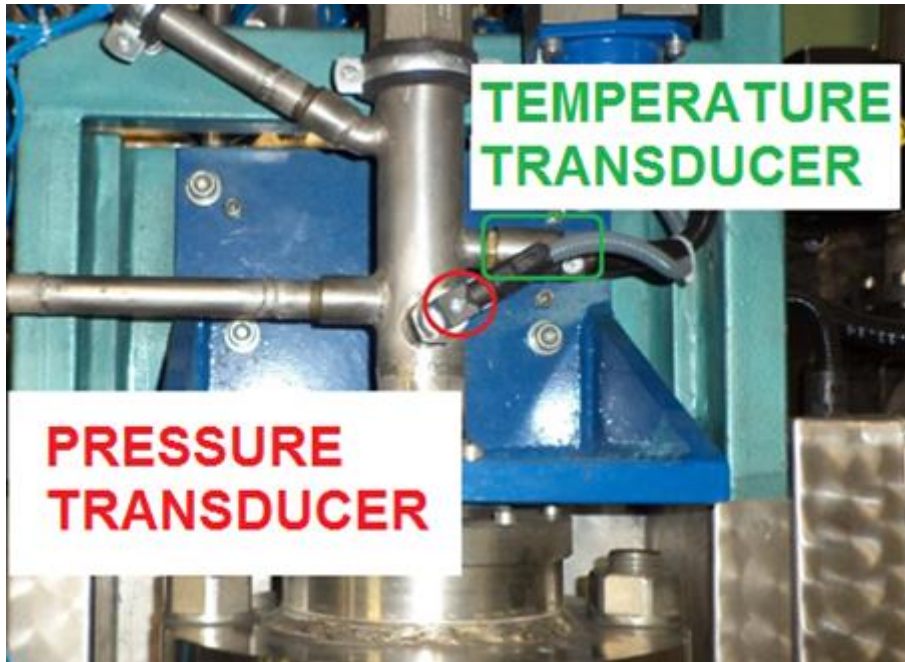


Figure 5

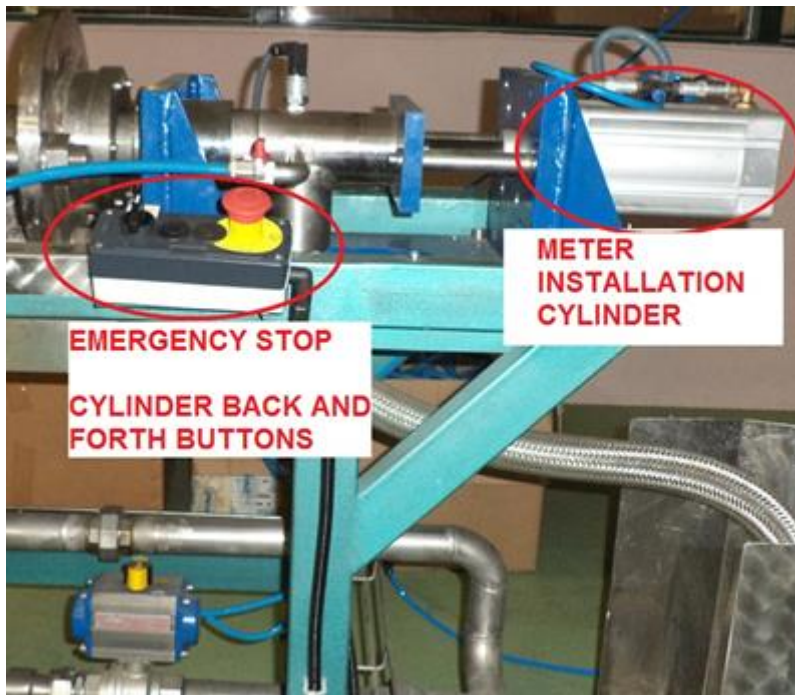


Figure 6



Figure 7

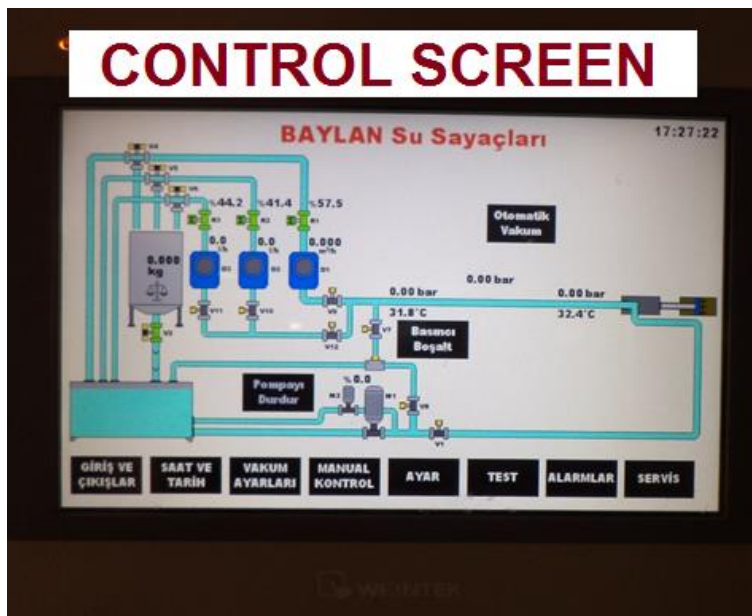


Figure 8

3. Technical Specifications

3.1. Water passage line (pipes, valves, T fittings, elbow fittings);

Properties	
Material type	AISI 304 stainless steel
Pressure resistance strength	PN 16

3.2. Water tank (weighing machine) and main water tank;

Properties	
Material type	AISI 304 stainless steel
Water tank (weighing machine)	300 liter
Main water tank	500 liter



3.3. Hollow sections that are used on test bench body;

Properties	
Material type	ST-37
Paint	Epoxy

3.4. Features of apparatus that are being used on water passage line ;

Properties	
Material type	POM
Nominal Diameter / Meter length	DN15 / 170mm
Nominal Diameter / Meter length	DN20 / 190mm
Nominal Diameter / Meter length	DN25 / 260mm



3.5. Quantity of meter that can be installed to bench at once;

Properties	
Nominal Diameter / Pieces	DN15 / 10 pieces
Nominal Diameter / Pieces	DN20 / 10 pieces
Nominal Diameter / Pieces	DN25 / 6 pieces

P.S.: Mentioned quantities above for nominal diameters are determined in accordance with the condition of not exceeding 0,63 bar per a meter.

4. Measuring Instrument Specifications

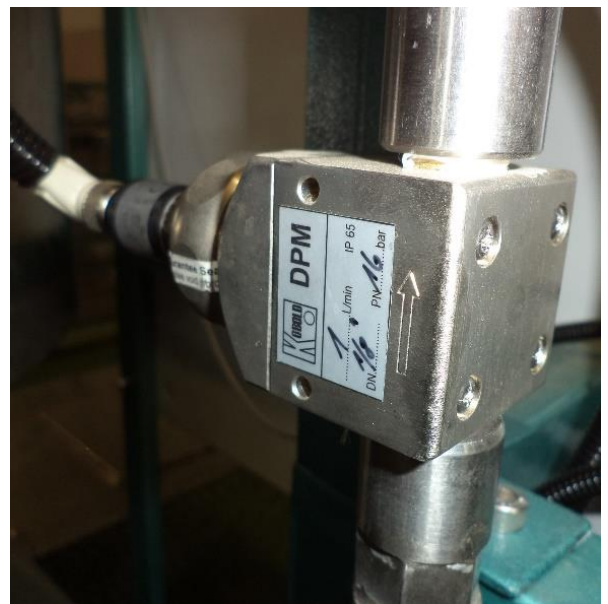
It is essential for measuring instruments to possess calibration certificates from manufacturer or an accredited lab.

4.1. Flowmeter

There are 2 glass tube flowmeters and a low volume rotating vane flowmeter which are sufficient to measure between 3 l/h - 30m³/h interval. (Figure 2)

Properties		
Flowmeter Type	Glass tube flowmeter	Glass tube flowmeter
Scale	630-6300 l/h	4-40 m ³ /h
Nominal Diameter	DN	DN-65
PN		10 bar

Properties	
Flowmeter Type	Low volume rotating vane flowmeter
Model	KOBOLD - DPM
DN:	1/8"
PN:	16 bar
IP class:	65



Low Volume Rotating Vane Flowmeter

4.2. Pressure transmitter

Pressure transmitters which are used on inlet and outlet of test bench are capable to measure the pressure between 0-40 bar, both are able to transfer datas to the HMI and computer. (Figure 5)

Properties	
Pressure working range	0-40 Bar
Control signal	4-20mA



4.3. Temperature sensor

Temperature transmitters which are used on inlet and outlet of test bench are capable to measure the temperature between 0-60°C, both are able to transfer datas to the HMI and computer. (Figure 5)

Properties	
Temperature range	0-60 °C
Control signal	4-20mA



4.4. Electronic scale

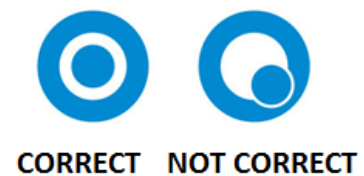
In order to carry out tests and examination of flowrates, test bench has a scale which is able to transfer weighed values to computer. Water tank which placed on scale has a capacity of preserving at least 300 kg of water. (Figure 2, Figure 7)

Scale Platform:

Properties	
Scale measuring capacity	300 kg
Connection cable	2,5 meter
Preload capacity	64 kg
Repeatability	1 g
Linearity	2 g±
Resolution	5 g
IP class	IP66 or IP67 cleanable unit
Working principle	Loadcell + IDNET converter with the system of electromecanic level equilibration.

Scale indicator unit:

Properties	
Serial communication	RS232
Max.	300 kg
Min.	200 g
e	10 g



5. Other components

5.1. Sensor

Sensor is the operating device that based on counting the movement of flow indicator to calculate error. BTB-07 test bench has 10 laser sensors to transfer data which are read on meter indicator to PLC.

Properties	
Accuracy class	1
Adjustment	Manual or automatic
Output	PNP and NPN
External material	ABS
IP protection class	IEC IP67; NEMA 6
Voltage	24V



5.2. HMI

Operator panel screen to serve the purpose of displaying test regulations, set ups and results. HMI screen is adapted to the test bench body with rotatability so that operator can rotate it to adjust for instant position of his/her own. (Figure 8)

Properties	
Screen width	10"
Screen type	Coloured
Control type	Touch screen
Connection type	USB + Ethernet



5.3. Pump

BTB-07 test bench contains two pumps which operate separately for high and low flowrates. Between the main water tank and pump installation; there are check-valves, shut-off valves and filters on plumbing to ensure a clean water flow on meter passage. (Figure 3)

For the tests higher than 1m³/h;

Properties	
Control type	Frequency controlled
Working principle	Centrifugal
Working pressure that can be served	10 bar
Maximum flowrate	30 m ³ /h

For the tests lower than 1m³/h;

Properties	
Control type	Frequency controlled
Working pressure that can be served	1 bar
Maximum flowrate	1 m ³ /h



5.4. Compressor

Test bench system requires pressurized air and it has to be ready to use. Compressor is an exterior machine on bench that works with electricity to supply that need.

Properties

Air pressure (Minimum)	6 bar
Air tank capacity	50 litre
Voltage	220 V

