

$$P = F/S$$

### ✓ Applications

Range of Dead weight tester is designed to test, adjust and calibrate measuring instruments, mechanical or electronic pressure by comparison (pressure gauges, pressure transmitters or sensors or switches)

The dead weight tester are constituted by a pressure generator, a piston/cylinder unit, a set of weigh identified and of a computer on which is posted : the position of the piston and the value of pressure generated by the dead weight according to the various physical quantities.

The capstan allows to adjust the pressure by compressing the gas through the piston. This pressure is balanced by the set piston/cylinder what allows to compare the instrument to be calibrated in the values of pressures generated by the standard and indicated on the calculator. These dead weight are intended for the calibration in relative pressure. This reference instrument are used in factory or calibration laboratory. They are robust and easy to use and have a high long-term stability.

### ✓ Technical specifications of the range BA4

- **Calibration :** Our dead weight tester are calibrated under the following conditions of use :  
Temperature 20°C - Pressure atmos. 1013.25 hPa - Humidity 50% - acceleration 9.80665 m/s<sup>2</sup>  
In case you don't use it under the conditions mentioned above, it is necessary to recalculate the pressure generated by the dead weight according to the different variables<sup>2</sup>
- **Fluid :** The system of automatic lubrication integrated into the dead weight avoids the risks of contamination piston/cylinder. Colorless, compatible mineral oil with medical or food uses - volume of the tank 20 cm<sup>3</sup>
- **Source Pressure :** Dry air - gas connection ¼ cylindrical female - This balance needs to be connected to a pressure source.
- **Check/adjust the seat :** leveling bubble and adjustable feet
- **Connecting for the instrument to be tested :** swivel G1/2 standard – other optional fittings
- **Motorization :** training the weight in rotation by electric engine
- **Measure of the temperature :** Precision ± 0.1°C
- **Measure of the atmospheric pressure :** Precision ± 1hPa
- **Measure of the hygrometry :** Precision ± 10%
- **Calculator :**
  - with dynamic display of the position of the piston
  - with automatic display of the pressure generated by the dead weight according to the temperature, the atmospheric pressure and the hygrometry
  - with a connection for the transfer of the data on computer, allowing a total traceability
- **Crankcase :** Light alloy aluminum AG3 + high-resistance paint
- **Capstan :** removable for transport
- **Piston/cylinder :** Single piston treated steel or tungsten carbide - **Repeatability :** 1.10<sup>-5</sup> - **Sensitivity :** 0,5.10<sup>-5</sup> - **Precision dead weight :** 5.10<sup>-5</sup>
- **Weight :** non magnetic stainless steel – **Total weight** of the set of weights from 33 kg to 48 kg depending on model –Ergonomic shape of the masses, easy loading of the masses on the bell - **Marking** corresponding with the measuring unit choose (bar, mbar, KPa, PSI etc..) **Gravity :** standard (9.80665 m/s<sup>2</sup>) or local gravity without supplement
- **Operating temperature:** 18 to 28°C – 64 to 82°F

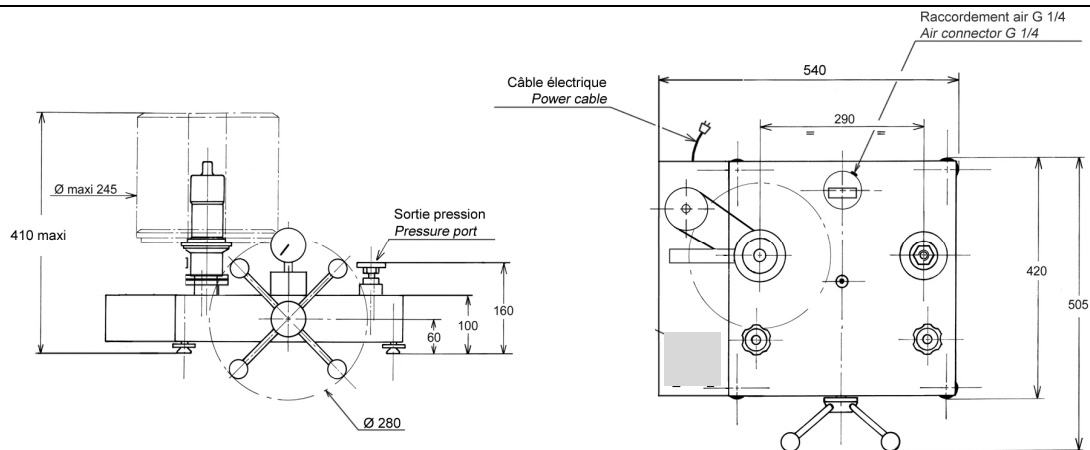
## ✓ Technical product specifications

- Model :	BA4-200B - dead weight simple piston
- Measuring range :	2.5 to 200 bar / 25 to 3000 PSI / 250 to 20000 kPa
- Uncertainty of the pressure measured by the DWT :	0.001 + ( 0.5.10 <sup>-4</sup> x P ) (with P en bar)
- Accuracy :	0.005% of the scale
- Weight dead weight without weight :	24 kg
- Base generator :	CA2-200B
- Typical cross-section of the piston :	15.6966 mm <sup>2</sup>
- Material Piston/Cylinder :	P = tungsten carbide / C = treated steel
- Number of piston :	1

## ✓ Various

- **Delivery details** : a manual are provided in English or French with the device + a factory calibration certificate traceable to the national standards + data sheet +Certificate + 0.5 liter of mineral Oil
- **Maintenance** : Our technical service department is at your disposition for the revision, calibration or service your unit – Calibration device recommended every 2 or 5 years depending on your use

## ✓ Dimensions of device



Height with standard set of weight : (bar, kPa) : 395 mm (PSI) : 379 mm

Unit used : mm

## ✓ Standard weight sets

Standard set			
	Pressure (bar)	Total weight	Typical value (g)
Unit : BAR or Kg/cm <sup>2</sup> (Ref. MB0031)	50	2	8000
	47.5	1	7600
	25	1	4000
	10	2	1600
	5	1	800
	2.5	1	400
	1	2	160
	0.5	1	80
	2.5		400
Initial Pressure bell + weight adaptation			
TOTAL	205	11	±33 kg

### Optional :

- Set of weights adjustment from 1 mg to 50g with COFRAC certificat (Ref.OP237-200)

Standard set			
	Pressure (PSI)	Total weight	Typical value (g)
Unit : PSI	500	4	5520
	475	1	5244
	250	1	2760
	100	2	1104
	50	1	552
	25	1	276
	10	2	110.4
	5	1	55.2
	25		276
Initial Pressure bell			
TOTAL	3050	13	±34 kg

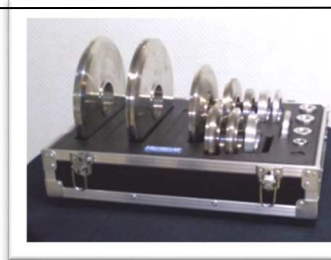
Other units are available on request

Standard set			
Unit : kPa	Pressure (Kpa)	Total weight	Typical value (g)
	5000	2	8000
	4750	1	7600
	2500	1	4000
	1000	2	1600
	500	1	800
	250	1	400
	100	2	160
	50	1	80
Initial Pressure bell + weight adaptation		250	400
TOTAL		20500	11
			±33 kg

### ✓ Options of the dead weight tester

- adjustment weight set or Standard weight set additional for different units
- Calibration of the instrument : Points statement AREMECA or certificate of calibration DAkkS or COFRAC
- Tin oil : 1 liter, 2 liters or 5 liters of oil

### ✓ Options for weight set



transport metal boxes

(OP0101) : 260 x 260 x 310 mm - weight empty : 6 kg

Suitcase for post planning and transportation

(OPxxxx) large : 355 x 505 x 310 mm - weight empty : 13 kg

+ (OPxxxx) small : 290 x 250 x 310 mm - weight empty : 5 kg

### - Suitcase for the dead weight (ref.OP0002) :



### ✓ Accessories (Ask for our specific documentation)

- Accessory case (ref.OP0057)
- Setting gauge kit (ref.OP0125)
- Kit drain tank (ref.OP0025)
- Bench cleaning (ref.OP0062)
- Suitcase with pear + needle up (OP0228)



- **Connectors up to 1200 bar** : suitcase connectors M (ref.OP0174) – suitcase connectors G (ref.OP0171) - suitcase connectors NPT (ref.OP0172) - suitcase connectors BSP-TR (ref.OP0173) - suitcase with 17 connectors M + G + NPT + BSP-TR (ref.OP0037) – unit connector



#### ✓ Shipping and packaging

- **Packaging** : woodpack is provided for the shipping

Designation/Reference	Dimension / carton or shipping crate	Weight empty / total weight (packaging + materiel)
<b>Dead weight without weight</b>	470 x 470 x 240 mm	Carton empty 1.5 kg Total weight ±24 kg
<b>Standard weight set</b>	300 x 300 x 170 mm	Carton empty 1.5 kg Total weight ± 35 kg
<b>Wood packaging</b> SB0003	980 x 700 x 500 mm	Suitcase empty 20 kg Total weight ± 79 kg (dead weight + weight set + packaging)



SB0003

- **Note** : shipping is extra.

#### ✓ Other models available in the range BA4

(Datasheet is available on request or on our website : [www.aremeca-instrumentation.com](http://www.aremeca-instrumentation.com))

Models simple piston

Models	Accuracy	Measuring range		
		Bar ou kg/cm²	PSI	kPa
BA4-120B	10 <sup>-4</sup>	1 to 120	10 to 1600	100 to 12000
BA4-60B	10 <sup>-4</sup>	0.5 to 60	5 to 800	50 to 6000