



$$P = F/S$$

#### ✓ Applications

This primary standard Range are 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 consist of a pressure generator connected to a compressed air source, a piston/cylinder unit, a set of weigh identified. The capstan can adjust the pressure by the gas through the piston. This pressure is balanced by the piston / cylinder which compares the instrument to calibrate the values of pressures generated by the standard.

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 BA3

- **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.
- **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 reservoir 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 :** Driving of the rotating weight with display of the position of the piston leds luminous
- **Crankcase :** Light alloy aluminium AG3 + high-resistance paint
- **Capstan :** removable for transport
- **Piston/cylinder :** Single piston treated steel or tungsten carbide - **Répeatability:** 2.10<sup>-5</sup> - **Sensitivity :** 1.10<sup>-5</sup> - **Precision dead weight :** 10<sup>-4</sup>
- **Weight :** non magnetic stainless steel – **Total weight** of the set of weights from 4 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 :** BA3-120B - dead weight simple piston
- **Measuring range :** 1 to 120 bar / 10 to 1600 PSI / 100 to 12000 kPa
- **Uncertainty of the pressure measured by the DWT :** 0.0010 + (1.10<sup>-4</sup> x P) (with P en bar)
- **Accuracy :** 0.01% of the scale / **option :** 0.007% with certificate COFRAC or DKD
- **Weight dead weight without weight :** 24 kg
- **Base generator :** CA2-200B
- **Typical cross-section of the piston :** 39.2280 mm<sup>2</sup>
- **Material Piston/Cylinder :** P = treated steel / C = treated steel
- **Number of piston :** 1

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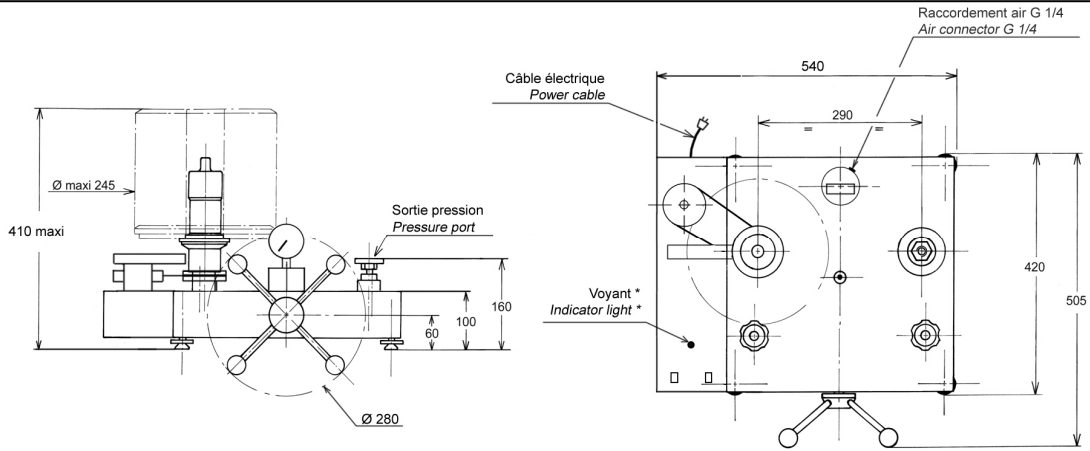
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✓ **Various**

- **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) : 411 mm (PSI) : 386 mm

Unit used : mm

✓ **Standard weight sets and intermediate**

Standard set			
	Pressure (bar)	Total weight	Typical value (g)
<b>Unit : BAR or Kg/cm<sup>2</sup></b> (Ref. MB0001)	20	4	8000
	19	1	7600
	10	1	4000
	4	2	1600
	2	1	800
	1	1	400
	Initial Pressure bell + weight adaptation	1	
<b>TOTAL</b>	<b>120</b>	<b>10</b>	<b>±48 kg</b>

Intermediate set			
	Pressure (bar)	Total weight	Typical value (g)
<b>BAR or Kg/cm<sup>2</sup></b> (Ref. MB0002)	0.4	2	160
	0.2	1	80
	0.1	1	40
	0.04	2	16
	0.02	1	8
	<b>TOTAL</b>	<b>1.2</b>	<b>7</b>

Standard set			
	Pressure (PSI)	Total weight	Typical value (g)
<b>Unit : PSI</b> (Ref. MB0013)	200	6	5520
	190	1	5244
	100	1	2760
	40	2	1104
	20	1	552
	10	1	276
	Initial Pressure bell	10	
<b>TOTAL</b>	<b>1600</b>	<b>12</b>	<b>±44 kg</b>

Intermediate set			
	Pressure (PSI)	Total weight	Typical value (g)
<b>PSI</b> (Ref. MB0016)	4	2	110.6
	2	1	55.2
	1	1	27.6
	0.04	2	11
	0.02	1	5.5
	<b>TOTAL</b>	<b>12</b>	<b>7</b>

Standard set			
	Pressure (Kpa)	Total weight	Typical value (g)
<b>Unit : kPa</b>	2000	4	8000
	1900	1	7600
	1000	1	4000
	400	2	1600
	200	1	800
	100	1	400
	Initial Pressure bell + weight adaptation	100	
<b>TOTAL</b>	<b>12000</b>	<b>10</b>	<b>±48 kg</b>

Intermediate set				
	Pressure (Kpa)	Total weight	Typical value (g)	
<b>kPa</b>	40	2	160	
	20	1	80	
	10	1	40	
	4	2	16	
	2	1	8	
	<b>TOTAL</b>	<b>120</b>	<b>7</b>	<b>480 g</b>

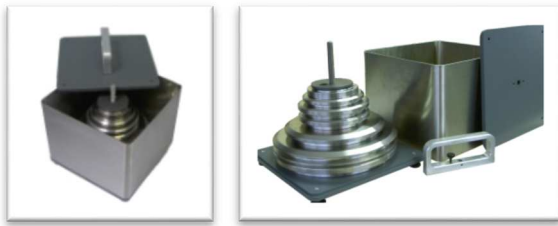
Other units are available on request

✓ **Options of the dead weight tester**

- intermediate 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

- Calculator module with dynamic display of the piston position, automatic display of the pressures generated by the scale as a function of temperature, atmospheric pressure and hygrometry, with transfer of data to a computer for total traceability and calibration certificate edition. (-> BA4)

✓ **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 ± 51 kg
<b>Wood packaging</b> SB0003	980 x 700 x 500 mm	Suitcase empty 20 kg Total weight ± 95 kg (dead weight + weight set + packaging)



SB0003

- **Note** : shipping is extra.

✓ **Other models available in the range BA3**

(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 or kg/cm <sup>2</sup>	PSI	kPa
BA3-200B	10 <sup>-4</sup>	2.5 to 200	25 to 3000	250 to 20000
BA3-60B	10 <sup>-4</sup>	0.5 to 60	5 to 800	50 to 6000
BA3-10B	10 <sup>-4</sup>	0.15 to 10	2.5 to 150	15 to 1000