

**Type B Economy Air Meter
CN032**

Impact Test Equipment Ltd
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User Guide
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1. ENTRY

- 1.1 In modern concrete production one of the most important subjects is the air control entering into the concrete. The CN032 Air meter is the most suitable tool for concrete mix's test and design. It is used as the most sensitive measurement of the air inside the concrete, using Boyle's law. It is easy to use by anyone because no adjustment is required for barometric pressure changes.
- 1.2 CN032 With its 0,250 feet³ (7.0792 litre) volume body, it makes unit weight process sensitively. Tare weights are written at the base, weight in gram.
- 1.3 This product can be used in different fields, it works up to 22 % air percent.
- 1.4 It is produced for effective and long time usage.

2. OTHER DOCUMENTS

- 2.1 See to ASTM C-231, BS1881 or AASHTO T-152 for more information.

3. USAGE OF AIR GAUGE (see Figure 1)

- 3.1 Remove the cover and put the material which will be three equal parts, inside the reservoir (#1).
*Tamping 25 times every layer by tamping rod.
*Pull the excessive concrete back by straight edge.
- 3.2 Clean all the sand and mortar on the mouth of the reservoir, take care that under the cover must be free from sand etc.
- 3.3 Make, two little valve over the cover, (#8 ve #9) vertical and open it.
- 3.4 Close the cover carefully. Close four of the pins (6).
ATTENTION! Do not pressurise before closing the pins.
- 3.5 Pour the water from the funnel (#7) until the water comes from centre valve (#8) .
- 3.6 Vibrate the product until you see the air bubble coming from the centre valve. Only add the water until you are sure that the water comes back (Not the air). First close the centre valve (#8) after close the funnel valve (#9).
- 3.7 Close the air wasteway valve(#10). Slowly give the air (#11), but don't pump, until provide the black indicator (#12) comes to the yellow beginning line. If you accidentally pass the yellow line, slowly open the wasteway and close it faster.
- 3.8 Push the main air valve (#4), then slowly vibrate the product. Softly click on the indicator and read the black indicator. This value is air percent.
- 3.9 After reading the value, remove your hands from the main air valve (#4). Before open the cover, open the centre little valve (#9) after open the funnel valve (#9). Some water may get out.
- 3.10 Push the main air valve (#4) again after opened the cover; it empties the air.

4. MULTIPLE SCALE PROCEDURE:

- 4.1 Apply 3.1 ~ 3.8 again for samples include more than 10 % air.
- 4.2 Close the main air valve and pump up the air to the air holder again. Empty the air by wasteway to turn back to yellow line. After the air pumped to the sample, DON'T OPEN centre and funnel valves till the test is over.
- 4.3 Push the main air valve. Vibrate the product. After the black indicator stops, read the value from the green section.

5. CALIBRATION CHECK TEST:

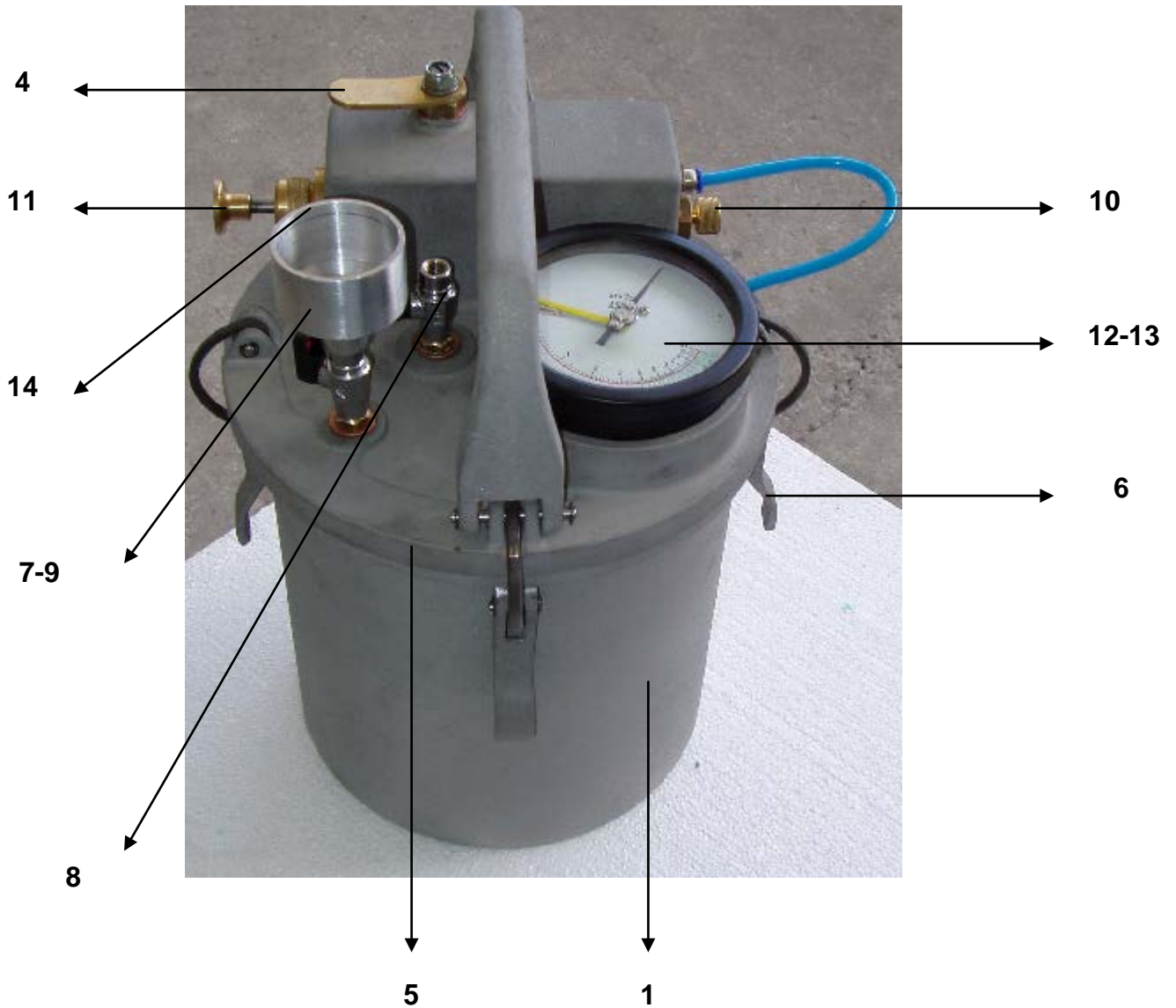
- 5.1 Fill the reservoir full of water. Insert the screwed pipe, which is over the centre valve (#8), under the funnel valve (#9).
- 5.2 Remove the glass of the indicator to make adjustment.
- 5.3 Open the centre (#9) and funnel valves(#9).
- 5.4 Close the pins.
- 5.5 Fill the water from the funnel (#7) until the water comes from the centre.
- 5.6 Close the funnel (#9) and centre (#8) valve when the air bubble disappears from the centre.
- 5.7 Close the wasteway (#10). Pump up the air to the air holder until black indicator reaches the yellow line.
- 5.8 If you pass the yellow line, open the air wasteway (#9) to return back.
- 5.9 Open funnel valve (#9). Push slowly to the main air valve (#9). Provide the water to reach the funnel's water line (#15).

- 5.10 Remove your hands from the main valve (#4) when the water comes to the level. Close the funnel valve (#9).
- 5.11 Pull the all water by syringe. Make this process twice. (84,95 cm³ water must drain)
- 5.12 Push the main air valve, indicator must stop at 12 %. If it is different, set the yellow beginning point.
*If the indicator is LOWER than 1,2 %, turn the yellow line to the reverse of the clock wise.(As far as error amount)
*If the indicator is HIGHER than 1,2 %, turn the yellow line to clock wise. (As far as error amount)
- 5.13 Open the wasteway(#10). Close the wasteway after the indicator turns back to the first position.
- 5.14 Open the main valve (#8) and funnel valve (#9). Empty the air.
- 5.15 Insert the screwed pipe to the previous place (Over the centre valve (#8)).



NOTE: To calibrate the air gauge to the other readings, drain water from the funnel as much as quantities of water at chart 1.

CHART 1 % VALUES	INDICATOR %	WATER VOLUME INCH³	CM³
	0	0	0
	1	4.32	70.79
	2	8.64	141.58
	3	12.96	212.37
	4	17.28	283.16
	5	21.60	353.96
	6	25.92	424.75
	7	30.24	495.54
	8	34.56	566.33
	9	38.88	637.13
	10	43.20	707.91
	11	47.52	778.71
	12	51.84	849.50
	13	56.16	920.29
	14	60.48	991.08
	15	64.80	1061.88
	16	69.12	1132.67
	17	73.44	1203.46
	18	77.76	1274.25
	19	82.08	1345.04
	20	86.40	1415.84
	21	90.72	1486.62
	22	95.04	1557.42



- 1. Sump
- 2. Straight Edge (not in photo)
- 3. Tamping Rod (not in photo)
- 4. Main Air Valve
- 5. Cover
- 6. Pin
- 7. Funnel

- 8. Centre Valve
- 9. Funnel Valve
- 10. Wasteway
- 11. Air Pump
- 12. Indicator Peg
- 13. Indicator
- 14. Water Level