



Model RK Pneumatic Deadweight Tester

PRODUCT DESCRIPTION

The AMETEK RK Pneumatic Deadweight Tester is a primary standard that produces a pressure by applying force (weight set) over area (the ceramic ball and nozzle). The RK tester is NIST traceable and accurate to $\pm 0.05\%$ using stainless steel weights calibrated to international standard gravity at 980.665 cm/sec^2 . $\pm 0.025\%$ and $\pm 0.015\%$ accuracy are also available.

The RK tester is self-regulating with accuracy independent of the operator. The tester utilizes a virtually frictionless ceramic ball floating on a layer of air within a stainless steel cylinder.

The RK tester features a cast-metal base with a quick-leveling system for field or lab setup. The unit may also be mounted to an optional tripod for more convenient setup. The tester may be operated with the cover opened or closed. Weights are located in foam-protective slots in the case.



Special Calibrations/Local Gravity

The RK testers are optionally available with an accuracy of $\pm 0.015\%$. Calibration to local gravity is available for all stainless steel models. Please provide gravity when ordering. Contact AMETEK for more details.

Notes:

Deadweight tester and deadweight gauge accuracy is expressed as "Percent of Indicated Pressure". A 1000 psi tester with an accuracy of $\pm 0.01\%$ of indicated pressure will have an allowable error of 0.1 psi at 10 psi, ± 0.1 psi at 100 psi and ± 1.0 psi at 1000 psi. Generally, deadweight testers are used only in the upper 90% of the range.

FEATURES

- Accurate to $\pm 0.015\%$
- Multiple Ranges
 - 4 to 1614" H₂O
 - 1 to 300 PSIG
 - 1 to 2011 kPa
 - 10 to 4010 cm H₂O
 - 1 to 112" Hg
 - 0.01 to 20 Bar
 - 0.01 to 20 kg/cm²
- Economical Self-Regulating Pressure Standard
- NIST Traceable

FUNCTIONAL SPECIFICATIONS

ACCURACY:
 $\pm 0.05\%$, $\pm 0.025\%$, $\pm 0.015\%$ of indicated reading. Below 1PSI accuracy is $\pm 0.025\%$.

REPEATABILITY:
 0.005% of output reading

TEMPERATURE COEFFICIENT:
 0.00167% of output per °C based on 23°C

MAXIMUM SUPPLY PRESSURE:
 450 PSIG Instrument quality air per ISA Quality Standard S 7.3.

MINIMUM SUPPLY PRESSURE:
 30 PSIG or 150% of output pressure

FLOW RATE:
 1 SCFH at 4" H₂O output
 60 SCFH at 300 PSIG output

PHYSICAL SPECIFICATIONS

CONNECTIONS:
 1/4-inch NPT female

WEIGHT:
 Tester Only 18 to 31.5 lbs (8.2 - 14.3kg)
 Weights 17.5 to 61.5 lbs (8.0 - 30.0kg)

SHIPPING DIMENSIONS (L x W xH):
 Tester 15.0 x 9.5 x 8.0-inches
 (38.1 x 24.1 x 20.3 cm)

Weights 8.5 x 12.0 x 11.5-inches
 (21.6 x 30.5 x 29.2 cm)

Notes:

For $\pm 0.015\%$ testers, $\pm 0.025\%$ accuracy below 30" H₂O, 1 PSI, 7kPa, 100cm H₂O or 0.07 Bar. Gravity 980.665 Gals cm/sec² or user's local gravity when specified. H₂O (water column) models are calibrated to water at 68°F (20°C) but can be calibrated to water at 60°F.





Model RK

Pneumatic Deadweight Tester

ORDERING INFORMATION

Model	Certified Range	Increment	W/C and Ball Output
RK-100WC	4 to 104 inH ₂ O	1 inH ₂ O	4 inH ₂ O
RK-300WC	4 to 314 inH ₂ O	1 inH ₂ O	4 inH ₂ O
RK-600WC	4 to 614 inH ₂ O	1 inH ₂ O	4 inH ₂ O
RK-1100WC	4 to 1,114 inH ₂ O	1 inH ₂ O	4 inH ₂ O
RK-1600WC	4 to 1,614 inH ₂ O	1 inH ₂ O	4 inH ₂ O
RK-500CM	10 to 510 cmH ₂ O	10 cmH ₂ O	10 cmH ₂ O
RK-1000CM	10 to 1,010 cmH ₂ O	10 cmH ₂ O	10 cmH ₂ O
RK-2000CM	10 to 2,010 cmH ₂ O	10 cmH ₂ O	10 cmH ₂ O
RK-3000CM	10 to 3,010 cmH ₂ O	10 cmH ₂ O	10 cmH ₂ O
RK-4000CM	10 to 4,010 cmH ₂ O	10 cmH ₂ O	10 cmH ₂ O
RK-100H	1 to 112 inHg	0.1 inHg	1 inHg

Calibration Options

Model Suffix	Accuracy	Gravity	Data
NONE	±0.050% rdg (standard)	Standard or local gravity (specify on order)	None
-1B	±0.025% rdg (optional)	Standard or local gravity (specify on order)	None
-1A	±0.015% rdg (optional)	Standard or local gravity (specify on order)	None
/C	±0.050% rdg (standard)	Standard or local gravity (specify on order)	Yes
-1B/C	±0.025% rdg (optional)	Standard or local gravity (specify on order)	Yes
-1A/C	±0.015% rdg (optional)	Standard or local gravity (specify on order)	Yes

Optional Accessories

Order Number	Description
RWS-.1WC	Aluminum weight set, Converts 1" H ₂ O units to 0.1" H ₂ O increments
RWS-.1	Aluminum weight set, Converts 1 PSIG units to 0.1 PSIG increments
RWS-.1KPA	Aluminum weight set, Converts 1 kPa units to 0.1 kPa increments
RWS-.1CM	Aluminum weight set, Converts 10 cm H ₂ O units to 1 cm H ₂ O increments
RWS-.001B	Aluminum weight set, Converts 0.01 Bar units to 0.001 Bar increments
RWS-.001M	Aluminum weight set, Converts 0.01 kg/cm ² units to 0.001 kg/cm ²

Tripod

K-1562	Tripod
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Tools

1GT-99	Gauge pointer puller set
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General Process Information for Calibrated Parts

- Local gravity values must be specified by customer in gals, cm/sec sec, or m/sec sec.
- Include serial number, accuracy, gravity, and model number of deadweight tester when ordering weight sets or calibrated parts.
- Masses for weights ordered separately, including tolerance, must be supplied by customer; unless combined with tester on same order.
- Calibrated parts may be made to archival data if requested on the purchase order.
- Calibrated parts are certified for physical dimension only (mass or area) and not for accuracy unless ordered with a new tester or the tester is returned for proper calibration of parts.
- RK weight set changes and additions require a matching weight carrier and/or conversion ring for the proper incremental output values.

Certification of Accuracy and Traceability

A Certification of Accuracy and Traceability to NIST is included with every AMETEK floating ball-type deadweight tester. An optional Certification of Accuracy with area, mass and intrinsic correction factors is available.



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