

Static Source Error Calibration Tool for Flight Test and RVSM Certification



Summary Features

1. Rugged Stainless Steel, Nylon, and Composite Fiber Construction
2. Easy Connection to the Aircraft Using Standard AN Fitting
3. Spare Cone Provided Standard
4. User-Specified Length
5. Optional Technical Documentation
6. Range of Accessories



Specifications

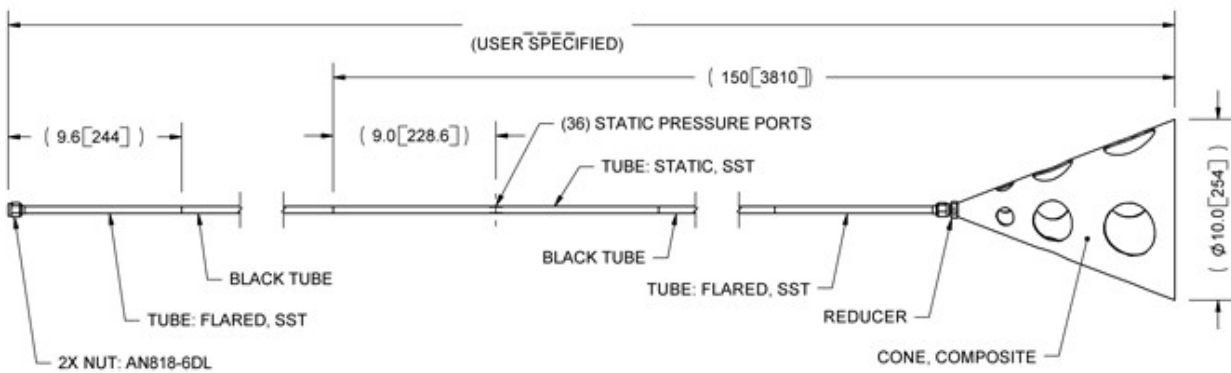
Item	Value
Primary Materials	stainless steel, steel, anodized aluminum, composite fiber, high-strength polyamide
Operating Temperature	-65° to 150° F (-54° to 65° C)
Recommended Maximum Load	120 lb (534 N) at 72° F (22° C) (load applied in tension from fore pressure fitting to aft pressure fitting)
Minimum Breaking Strength	100 lb (445 N) at 72° F (22° C) (load applied in tension from fore pressure fitting to aft pressure fitting)
Nominal Mass (100100-0450)	2.75 lb (1.25 kg)
Overall Length Tolerance	-0 +36 in (-0 +914 mm)

Part Numbers

Part Number*	Description
100100-	trailing cone: user-specified length in inches (includes one 301167 spare cone and one 300983 test fixture)

- Example part number: 100100-0900 indicates fore pressure fitting to end of cone length of 900 inches (75 feet).

Drawing



Spare Parts and Accessories

Item	Part Number	Description
1	300992	documentation: trailing cone research reports
2	300983	test fixture: kit, leak checking
3	400242	tube: pressure, black, spare, 1 ft (0.305 m)
4	300981	test fixture: static tube straightness

Usage Notes

1. Do not store the trailing cone in the shipping container.
2. Store the trailing cone tube coiled in 6-foot diameters or larger.
3. This is a flight test article. It is not to be used for non-flight-test purposes.
4. To install the cone to the aft pressure connector (the pressure connector closest to the static port tube), apply 75 to 125 inch-pounds to the tube nut. Secure the cone with safety wire.

Pre-Flight Inspection Checklist

1. Ensure the cone freely rotates and does not wobble.
2. Inspect the cone for extraordinary dings, cracks, cuts, and scrapes.
3. Optional: paint the cone if it has been previously used to determine if any undue wear occurs during the flight.
4. Inspect the metal tubes and plastic tubes for signs of undue wear, cutting, and scraping.
5. Polish the static port tube with 400 grit sandpaper or similar if the static port tube is scratched. Do not polish the area immediately around the static holes.
6. Remove the cone and purge the trailing cone tube with compressed air (60 psi maximum). Re-attach the cone by applying 75 to 125 inch-pounds to the tube nut. Secure the cone with safety wire.
7. Verify the static port tube is straight using the 300981 test fixture.
8. Perform a leak check for 3 minutes at 10 to 12 psi with no pressure loss allowed using the 300983 test fixture.

Frequently Asked Questions (FAQ)

Question How do I learn more about RVSM certification?

Answer Review ["Trailing Cones for RVSM Certification and Flight Test"](#).

Question Is the 100100 trailing cone FAA or ICAO certified?

Answer No. The FAA and the ICAO do not certify flight test instrumentation nor do they specify the type of trailing cone to be used in RVSM certification.

Question Do you have the calibration for the 100100 trailing cone?

Answer The calibration for a trailing cone is aircraft-specific. As such, the calibration must be performed in concert with a tower fly-by, chase plane, or other commonly used calibration method. For more details, see NASA's [Airdata Measurement and Calibration](#) and NACA's [Measurement of Static Pressure on Aircraft](#).

Question Can the 100100 trailing cone be mounted on a reel for retracting into the aircraft?

Answer While the 100100 trailing was not designed for retracting to a reel, it can likely be used in such a configuration. The minimum bend radius of the black tubing is less than 4 inches (102 mm). To discuss modifications to the 100100 trailing cone to make it compatible with a reel mechanism, [contact us](#).

Question How do I learn more about detailed trailing cone and static system calibration procedures?

Answer The 300992 documentation (trailing cone research reports) provides extensive background information on that subject. See below for a description of the contents of the 300992 documentation.

Contents of 300992 Documentation (Trailing Cone Research Reports)

1. Shrager, Jack J., "Limited Survey of Commercial Jet Aircraft Altimeter System Position Error by Pacer with Trailing Cone", Federal Aviation Agency, National Aviation Facilities Experimental Center, Atlantic City, New Jersey, USA, December 1964 (Report No. RD-64-157).
2. DeLeo, Richard V. and Hagan, Floyd W., "Flight Calibration of Aircraft Static Pressure Systems", Federal Aviation Agency Contract FA64WA-5025, Rosemount Engineering Company, Minneapolis, Minnesota USA, January 1966 (Report No. RD-66-3).
3. Russell, William M., "Trailing Cone Tests in Large Turbojet", Federal Aviation Agency, Systems Research and Development Service, Washington, DC USA, March 1966 (Report No. RD-66-15).
4. Shrager, Jack J., "Test of Trail Cone System to Calibrate Static Ports for Barometric Altimeters", Federal Aviation Agency, National Aviation Facilities Experimental Center, Atlantic City, New Jersey, USA, December 1964 (Report No. RD-64-156).
5. [Brown, Edward N., "Position Error Calibration of a Pressure Survey Aircraft Using a Trailing Cone", National Center for Atmospheric Research, Atmospheric Technology Division, Boulder, Colorado, USA, July 1988 \(NCAR/TN-313\). \(pdf\)](#)
6. Jordan, Jr., Frank L. and Ritchie, Virgil S., "Subsonic Wind-Tunnel Tests of a Trailing-Cone Device for Calibrating Aircraft Static-Pressure Systems", NASA, Langley Research Center, Hampton, Virginia USA, May 1973 (TN D-7217).
7. Barnes, C. S., "Flight Assessment of a Douglas Trailing-Cone Static-Pressure Probe at Subsonic Speeds", Royal Aircraft Establishment, Ministry of Technology, Farnborough, Hants UK, July 1969 (Technical Report 69139).

Related Products

Part Number	Description
100400 (pdf)	mini air data boom
100510 (pdf)	unheated swivel-head air data boom
100600 (pdf)	unheated straight-nose air data boom
100700 (pdf)	heated straight-nose air data boom
100700-02 (pdf)	heated straight-nose air data boom
100800 (pdf)	trailing bomb
100900 (pdf)	heated, 4-vane air data boom with TAT sensor
100486 (pdf)	vane assembly (air flow direction indicator)

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All dimensions are REFERENCE and are in inches [mm] Document number: S002B(050216)