



Protect your assets

While in service, even the finest meters with the best available flow conditioning equipment and best design configuration can't escape the inevitable: internal meter tube build-up, meter component damage, and installation problems - all contribute to measurement uncertainty. Even a slight coating build-up from product residue on the inside of a meter or meter tube can significantly affect measurement uncertainty by as much as over 1% (see Table 1 on next page).

In today's environment of volatile hydrocarbon prices, such uncertainty can be more costly than ever in terms of "lost and unaccounted for" product. The Daniel Meter Inspection and Recertification Service is the ideal remedy for internal meter tube build-up, component damage and installation problems.

With this service, a certified Daniel field engineer will inspect your metering system using the latest in borescope technology and take the necessary steps to ensure the meter tubes and devices are cleaned and recertified to meet the requirements of AGA3/API 14.3 or any other measurement standards.



Reduce uncertainty

The Meter Inspection and Recertification Service benefits you by:

- Mitigating measurement uncertainty
- Minimizing the financial burden of "lost and unaccounted for" product
- Ensuring and verifying measurement accuracy to design standards
- Identifying and eliminating installation problems
- Providing full documentation of all activities and findings
- On-site service to minimize downtime and transportation costs

What causes inaccuracies

There are several factors that can cause inaccurate measurement including:

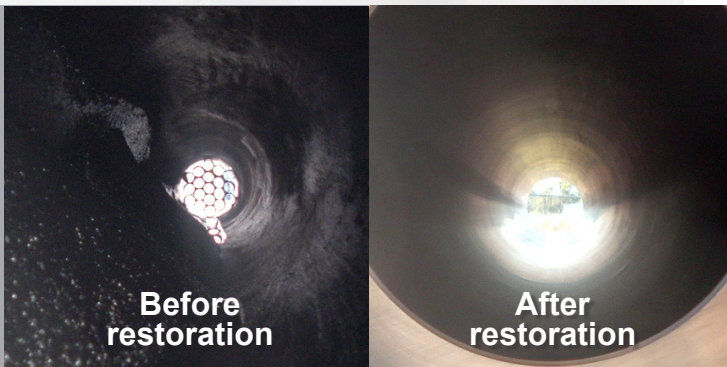
- Wrong plate sizes
- Plate carrier in backwards
- Damaged or missing turbine meter blades
- Incorrect seal ring usage
- Improper inner diameter marking
- Simple mistakes and overlooks

Tube inspection pays

Build-up on the inner wall of meter tubes can cause significant financial loss due to measurement uncertainty. This loss can be reduced with the Meter Inspection and Recertification Service.

Table 1: Impact of build-up on measurement uncertainty

SCFH	Potential Annual Financial Loss (@\$6 per 1000 SCF @ 100PSI)				
30,000	\$1,576	\$4,730	\$7,884	\$15,768	\$31,536
500,000	\$26,280	\$78,840	\$131,400	\$262,800	\$525,600
1,000,000	\$52,560	\$157,680	\$262,800	\$525,600	\$1,051,200
2,500,000	\$131,400	\$394,200	\$657,000	\$1,314,000	\$2,628,000
5,000,000	\$262,800	\$788,400	\$1,314,000	\$2,628,000	\$5,256,000
% uncertainty	0.1%	0.3%	0.5%	1.0%	2.0%



Keeping you at peak performance

Daniel is the world leader in custody transfer and fiscal flow measurement products, systems and services. We understand the importance of your flow metering measurement, and in an environment of volatile oil and gas prices, the financial risk due to measurement uncertainty is greater than ever before. That's why Daniel is committed to helping reduce your metering equipment uncertainty anytime and anywhere.

Our global reach, broad range of services and certified service specialists supported by over 75 years of oil and gas industry experience enable Daniel to support you for the life of your metering installations – and that's a certainty.

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Minimize cost of ownership

Properly maintaining your metering system is essential to minimizing total cost of ownership. The Daniel Meter Inspection and Recertification Service provides the following deliverables:

- ✓ Full borescopic inspection of the meter tube, meter body and flow conditioning device supported by photographic / video documentation to determine the extent of refurbishment work required
- ✓ Cleaning and refurbishment of meter tube and flow conditioner or straightening vane such that the dimensions and surface roughness are restored to the requirements of AGA3/API 14.3 standards
- ✓ Inspection of orifice plates, orifice plate seal ring gaps, and seal ring protrusion in addition to scheduling corrective actions when necessary
- ✓ Maintaining a safe work environment during inspection and refurbishment procedures
- ✓ Meter tube inspection certificate verifying date of inspection and conformance to AGA3/API 14.3 standards

Get started today

Daniel's highly trained certified technicians are located worldwide, providing you with service and support in more than 80 countries.

For a quotation customized to meet your particular service needs, please contact your nearest Daniel Measurement and Control Sales and Service office as indicated below, or submit a service request online at daniel.com.

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