

IS BRINGING SOME OR ALL OF YOUR CALIBRATION IN-HOUSE RIGHT FOR YOU?

The cost of insourcing versus outsourcing

Executive Summary

When making the decision to move calibration in-house or trying to determine if keeping your calibration in-house is the right choice, there are a number of factors to consider. This guide walks you through the process so you can make an informed decision.

Equipment and Standards

If you are starting an in-house calibration program, the first expense to consider is equipment. Not only will you have to purchase the correct standards, but you will need to budget for ongoing calibration, maintenance, and repairs. Depending on the type of equipment you need these costs can vary tremendously.

When considering the options for the investment, you should consider the sizes, types, accuracies and quantities of equipment. If you have a very large variety of dimensional instruments such as indicators, calipers, micrometers, height gages, and depth gages, a large set of gage blocks is a logical choice as it provides the most versatility. Looking at the most accurate instrument in your equipment list will allow for the determination in what grade to purchase. It is important to determine the TAR and TUR that you will need for their internal calibrations. While J.A. King strives for a 10:1 ratio or better when possible, you may choose higher or lower based on your preferences. Sometimes a smaller TAR ratio is acceptable when the instrument will be verified by a more accurate standard later.

An experienced measurement company can help you choose the right equipment for your team. J.A. King represents over fifty brands of precision measurement products and can help identify the right equipment for any environment and budget. Whether you require master setting plugs for adjustable rings, a simple set of rectangular gage blocks for calipers, scales, and micrometers, or an ultra-high accuracy horizontal ULM (Universal Length Measuring Machine) for high accuracy calibration of a variety of gages, we can help.



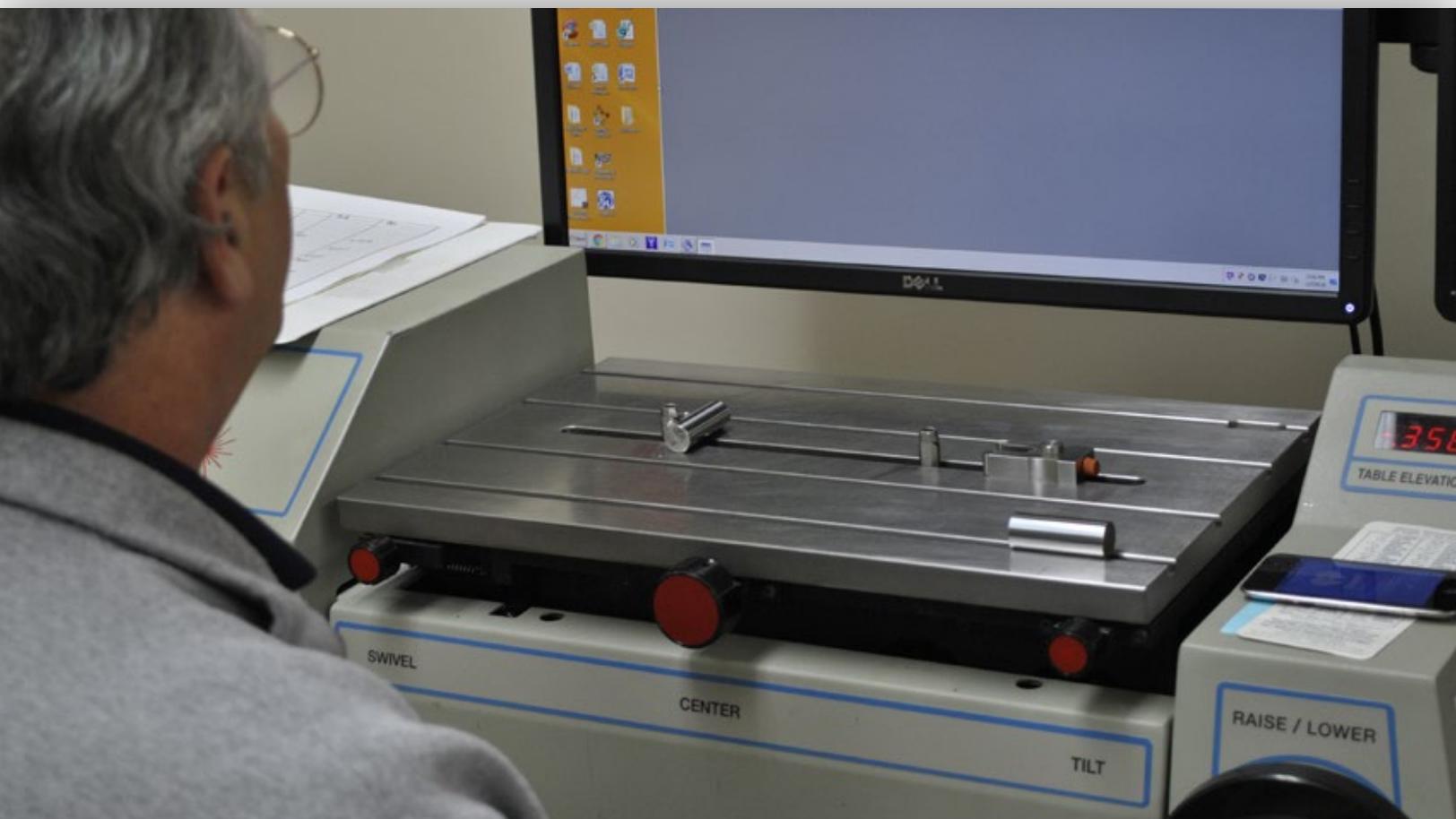
Technicians and Internal Quality Procedures

The most crucial aspect of any in-house program are the technicians. If you're starting a new program, you will need to recruit, onboard, and train your technicians to ensure they are ready to perform their duties. With an existing program, turnover is inevitable. Because it can be difficult to find these skilled workers, the help of a professional recruiter is often required. Typically, the fee for such service is around 25% of the salary of the person you are hiring.

Once you have found the perfect candidate, they will need to be onboarded and trained. Our technicians generally go through 90 days of training before they are considered proficient and ready to go out into the field alone. This necessary step can be quite expensive when you consider the lost time of both the new hire and the trainer.

Once you have your equipment and personnel in place, you will need internal calibration procedures for each type of equipment to be calibrated. This is necessary to ensure that your calibrations are done correctly each time, and provide you with documentation for the method the technician followed. Additionally, we suggest you conduct an annual internal audit of your quality system to make sure that your program is in compliance to reduce liability. At a minimum, we would recommend developing:

- Calibration procedures
- Employee training programs
- ISO compliance - calibration program specific
- Uncertainty budgets
- Equipment requirements
- Standard operating procedures
- Quality manuals
- Gage R&R studies



Calibration Management Software

You will also need a way to track your equipment calibrations and documentation. This is critical to make sure you don't run into issues when calibration certs are required for an audit. There are a number of gage calibration tracking software options available that can streamline the process and ensure you are ready when the auditor arrives.

At a minimum, any software should include the ability to:

- Create and upload calibration certificates and stickers
- Track repair and preventative maintenance
- Multi-level user access
- Custom reporting
- Ability to mark gages active or inactive
- Track gage location within your facility
- Proactively optimize calibration schedules to coordinate with production planning and workflows

J.A. King has developed two custom software packages based on our internal system, Netsuite. GageSuite® Gold and Platinum were designed specifically for customers with internal calibration systems and offer a wide range of additional customizable capabilities to suit your unique needs.



Cost Evaluation

It can be difficult to determine all of these costs involved, particularly if you have never had an internal calibration team. To help, J.A. King has created an In-house Calibration Program Cost Calculator tool so you can plug in information specific to your organization and see an estimate of what those costs might be. The calculator is based on our internal data related to equipment, staffing, and operational costs. Do note that these are averages based on a wide range of equipment. Your costs can vary depending on the specific equipment that you are calibrating. Our team has years of experience and can help you to walk through these expenses in greater detail.



J.A. KING PRECISION MEASUREMENT PROFESSIONALS		In-house Calibration Program Cost Calculator	
Number of Gauges:	150	Number of Technicians Needed:	0.1
Equipment Costs			
Cost to purchase standards for center 1 if calibrating that type of equipment, leave as 0 if you are not.			Cost
Height gauges & hand tools	0		\$0.00
Dimensional Hand Gauging	1		\$76,000.00
Scales	0		\$0.00
Electronics	0		\$00,000.00
Torque	1		\$12,000.00
Temperature/Humidity	1		\$8,000.00
Pressure	0		\$0.00
Cost to maintain calibration of standards (center 1 if calibrating that type of equipment, leave as 0 if you are not).			
Height gauges & hand tools	1		\$1,500.00
Dimensional Hand Gauging	1		\$6,000.00
Scales	0		\$2,000.00
Electronics	0		\$0.00
Torque	0		\$0.00
Temperature/Humidity	0		\$0.00
Pressure	0		\$0.00
Cost of gauge management software			\$0.000
Cost of equipment for each technician	0.1 technicians		\$134.06

There are many factors to consider when determining whether a calibration program should be in-house or outsourced. Each situation is unique but equipment, technicians, training, quality procedures and software must be considered regardless of application. In today's economy, the total cost must be evaluated in order to prove ROI. Whether you choose to outsource your calibration or perform it internally, the measurement professionals at J.A. King can be a partner and a resource to help you evaluate and correctly specify the equipment, standards and methods used.

