A Recipe for Success!

10 Ingredients for a Healthy Gage Management System



June 22, 2021







Meet the Presenters



Eric Gasper
Sr. Product Development Specialist
PQ Systems

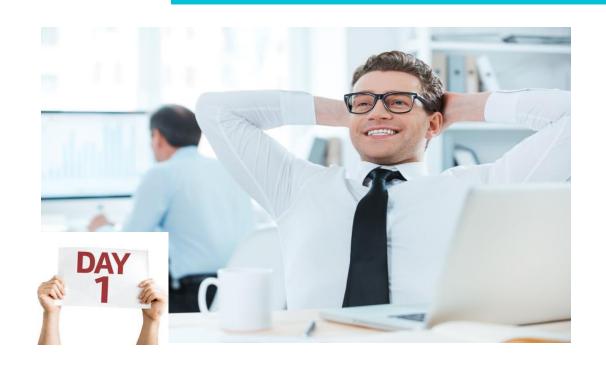


Derek Benson
Product & Application Support Manager
PQ Systems



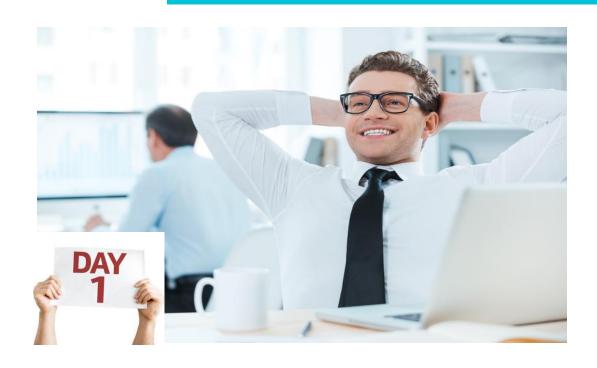
Brand new?
Taking over existing?





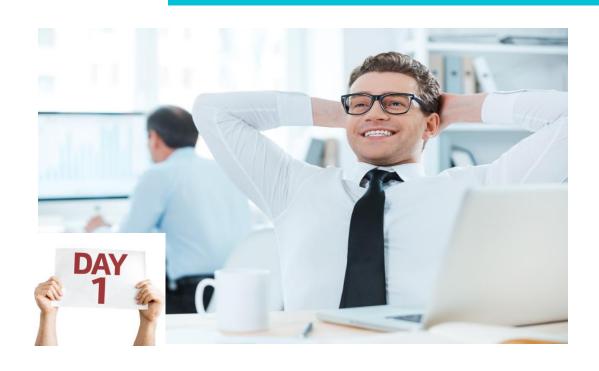






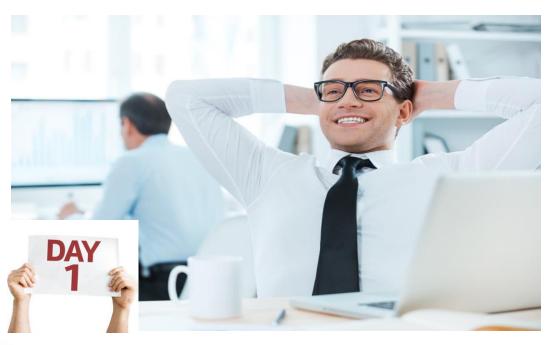




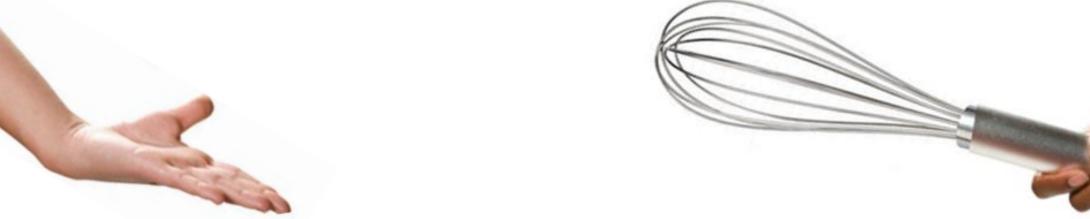




























FROM THE KITCHEN OF PQ SYSTEMS

RECIPE NAME:

Gage Management

PREP TIME:

30 min

COOK TIME:

1 hour

SERVES:

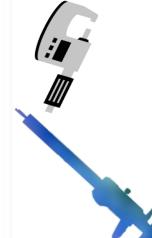
Everyone







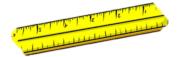














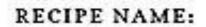












Gage Management

PREP TIME:

30 min

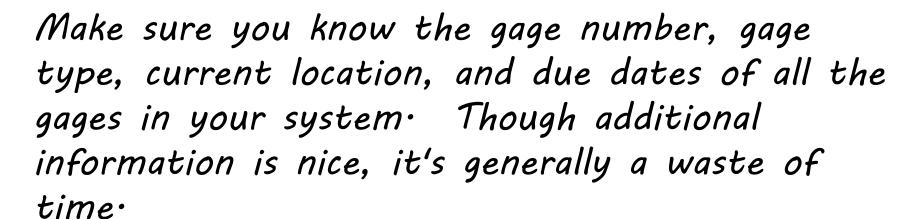
COOK TIME:

1 hour

SERVES:

Everyone





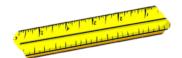


















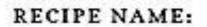












Gage Management

PREP TIME:

30 min

COOK TIME:

1 hour

SERVES:

Everyone



INGREDIENT 1:



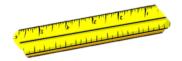
Make sure you know the gage number, gage type, current location, and due dates of all the gages in your system. Though additional information is nice, it's generally a waste of time.





MOZOVE









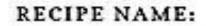








FROM THE KITCHEN OF PQ SYSTEMS



Gage Management

PREP TIME:

30 min

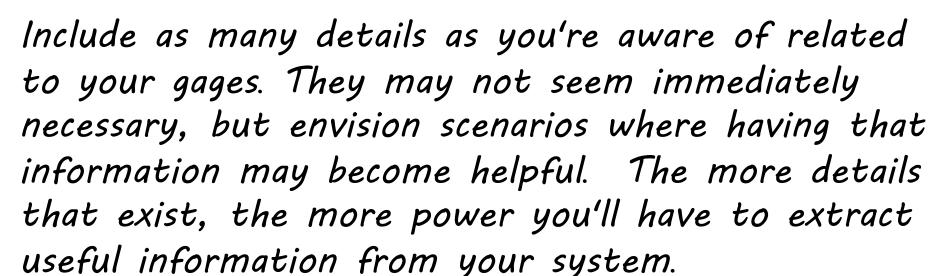
COOK TIME:

1 hour

SERVES:

Everyone















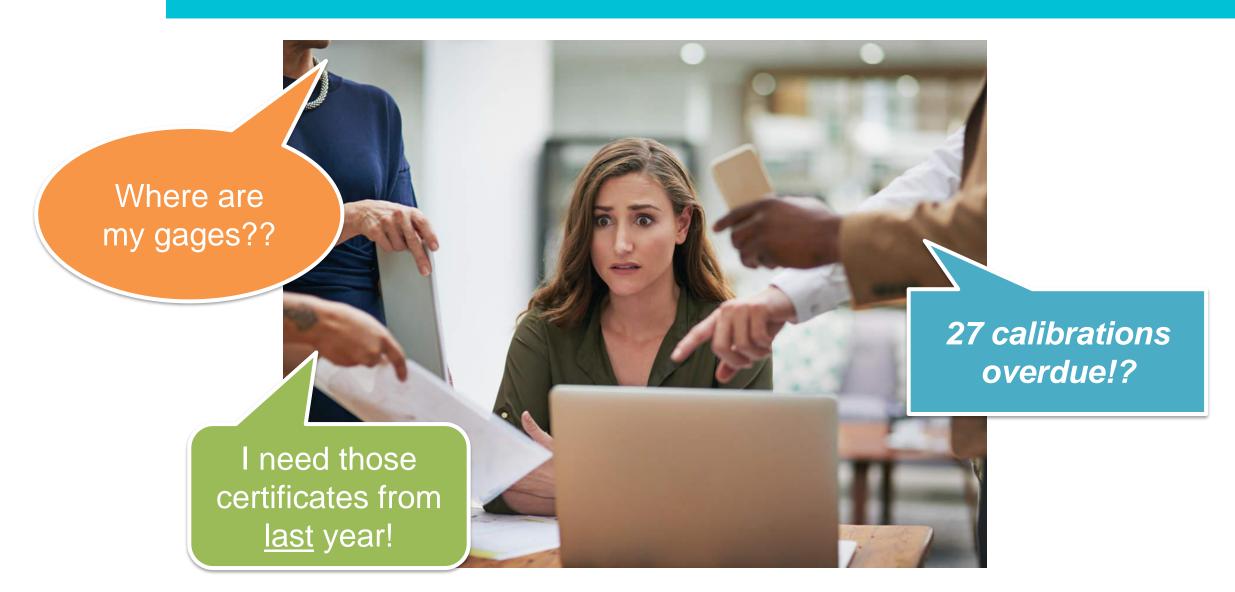


















- Managers
- Customers
- Auditors



- Managers
- Customers
- Auditors



Eric Gasper 1:41 PM

I need a list of the gages we have that we bought last year. Specifically, the digital calipers we got from Mitutoyo which were sent to production Line 7 and are now on a 4 month calibration cycle.



- Managers
- Customers
- Auditors



Eric Gasper 1:41 PM

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Derek Benson 1:50 PM

Not sure we've done the best job documenting all those details in GAGEpack. Let me ask around and try to come up with something for you.



- Managers
- Customers
- Auditors

Answers:



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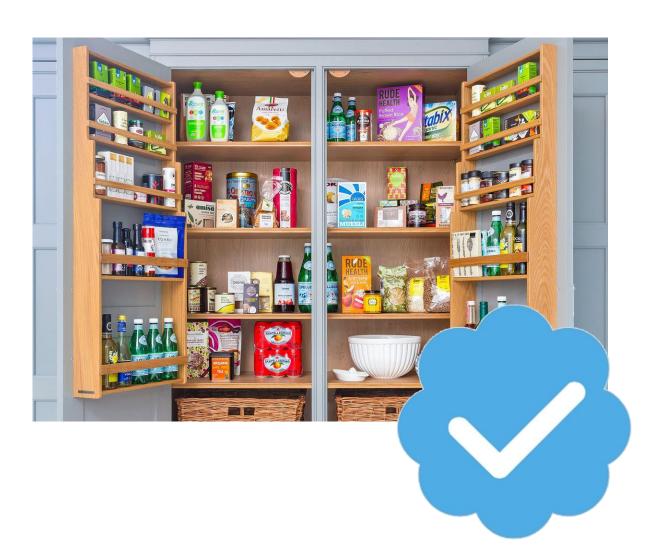
Answers:

Hopefully in your Gage Management System



Make a Meal





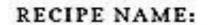












Gage Management

PREP TIME:

30 min

COOK TIME:

1 hour

SERVES:

Everyone





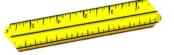
























FROM THE KITCHEN OF PQ SYSTEMS







Gage Management

PREP TIME:

30 min

COOK TIME:

1 hour

SERVES:

Everyone



INGREDIENT 2:



Maintain accurate and up-to-date gage labels that display the most vital details about each gage















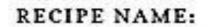








FROM THE KITCHEN OF PQ SYSTEMS



Gage Management

PREP TIME:

30 min

COOK TIME:

1 hour

SERVES:

Everyone





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FROM THE KITCHEN OF PQ SYSTEMS







Gage Management

PREP TIME:

30 min

COOK TIME:

1 hour

SERVES:

Everyone



INGREDIENT 2:



Maintain accurate and up-to-date gage labels that display the most vital details about each gage

















Why do we need labels?

- Distinguishing between similar gages.
- Being aware of important dates.
- Organization and Traceability back to equipment history.









What's Important?





What's Important?

Gage Number

Description

Model #

Manufacturer

Storage Location

Last Calibration Date

Calibration Due Date

Calibration Interval

Current Location

Status

Last Calibration by

Assigned to

Barcode





What's Important?

Gage Number

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What's Important?

```
Gage Number
Description
Model#
Manufacturer
Storage Location
Last Calibration Date
Calibration Due Date
Calibration Interval
Current Location
Last Calibration by
Assigned to
Barcode
```



Which are good labels?





Gage #: C-01001
Gage type: Caliper
Assigned location: Spoiler Line
Last calib date: 5/5/2016
Next due date: 11/5/2016





Asset #: C-01001 Gage type: Caliper Purchase date: 7/15/2001

Purchase price: 350 Gage size: 1"

Manufacturer: Fowler Calib due date: 8/25/2009

Owner: Company











RECIPE NAME:

Gage Management

PREP TIME:

30 min

COOK TIME:

1 hour

SERVES:

Everyone



INGREDIENT 3:



















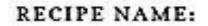












Gage Management

PREP TIME:

30 min

COOK TIME:

1 hour

SERVES:

Everyone



INGREDIENT 3:



Tracking gage location has never seemed to be very useful here.





















FROM THE KITCHEN OF PQ SYSTEMS

Gage Management

30 min

COOK TIME:

1 hour

SERVES:

Everyone

INGREDIENT 3:























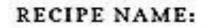












Gage Management

PREP TIME:

30 min

COOK TIME:

1 hour

SERVES:

Everyone



INGREDIENT 3:



At any given moment, you should be able to understand where each gage resides. Track movements of your equipment to save time spent hunting lost gages.



















The Impact of Lost Gages

In a given year, how much time does the average adult spend looking for lost belongings?



2.5 Days



In a given year, how much time does the average adult spend looking for lost belongings?



60 Hours



In a given year, how much time does the average adult spend looking for lost belongings?



\$1500



In a given year, how much time does the average adult spend looking for lost belongings?



\$30,000



Lost gages are easy targets for auditors.





- Lost gages are easy targets for auditors.
- A lost gage represents a risk because, if found, it could have potentially been used to measure a part on which it wasn't specified to be used.





- Lost gages are easy targets for auditors.
- A lost gage represents a risk because, if found, it could have potentially been used to measure a part on which it wasn't specified to be used.
- Lost gages are also an investment from which you are no longer getting value.





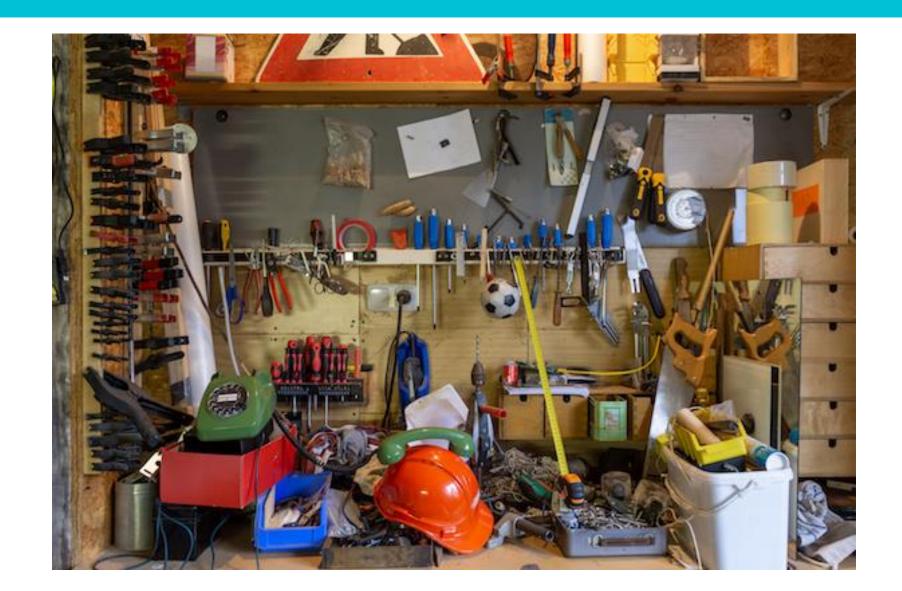
How do you store your gages?







How do you store your gages?







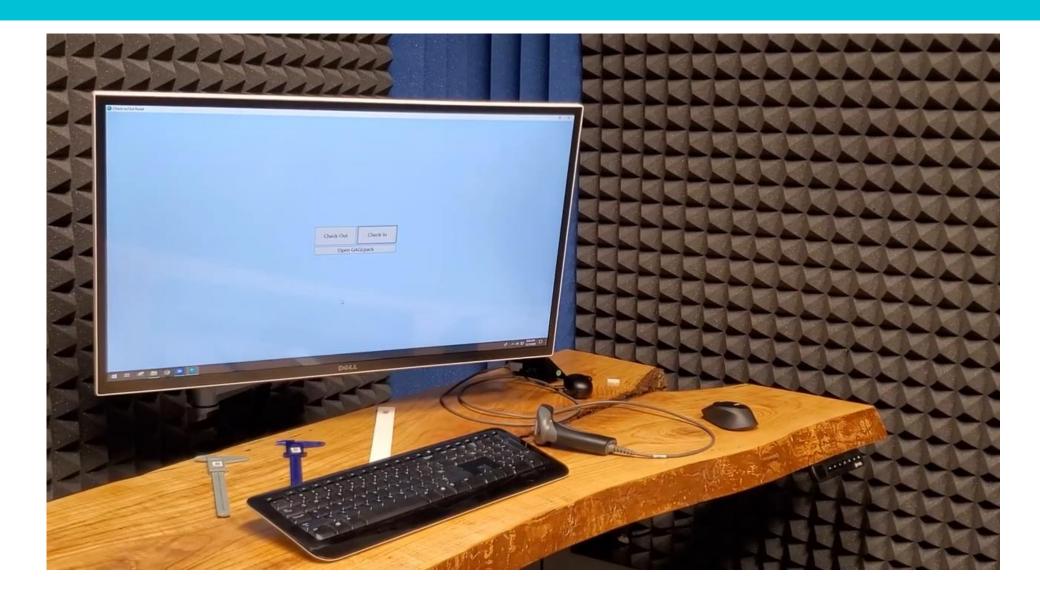


























RECIPE NAME:

Gage Management

PREP TIME:

30 min

COOK TIME:

1 hour

SERVES:

Everyone

INGREDIENT 4:





























FROM THE KITCHEN OF PQ SYSTEMS

RECIPE NAME:

Gage Management

PREP TIME:

30 min

COOK TIME:

1 hour

SERVES:

Everyone



INGREDIENT 4:



Ensure you have a system in place which captures the "who, what, when, and why" for changes happening with your inventory.





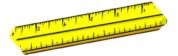














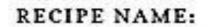








FROM THE KITCHEN OF PQ SYSTEMS



Gage Management

PREP TIME:

30 min

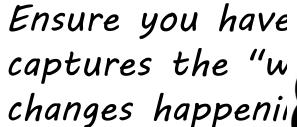
COOK TIME:

1 hour

SERVES:

Everyone







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FROM THE KITCHEN OF PQ SYSTEMS

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Everyone



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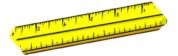














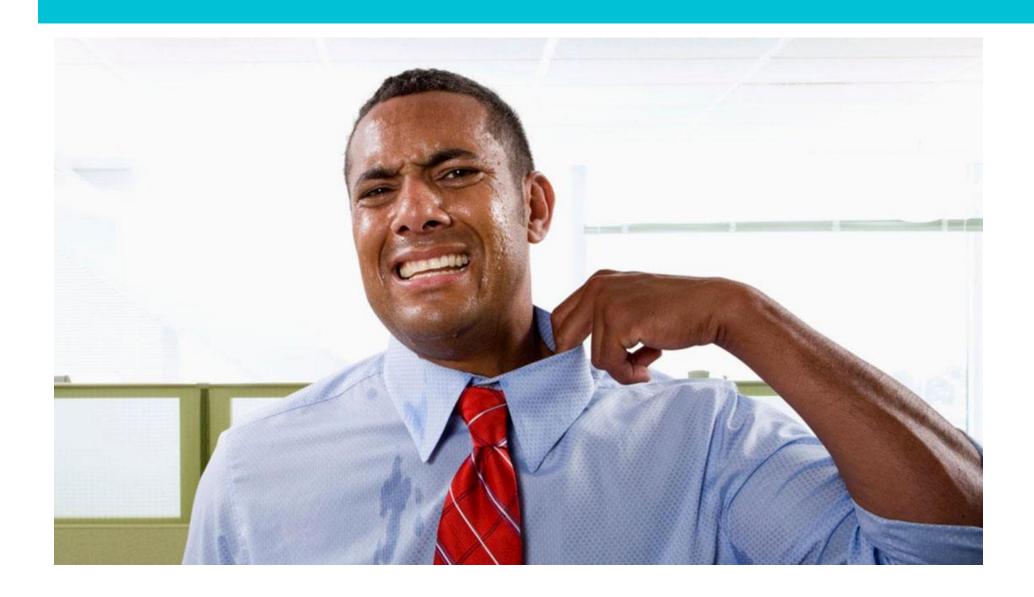


What's she going to ask me?



- Are you using any overdue gages?
- Can you show me the calibration history for this gage?
- Why does this record look the way it does?
- Why did you do that?
- What is the evidence to support that?
- Can you explain that to me?
- Who else performs this function?





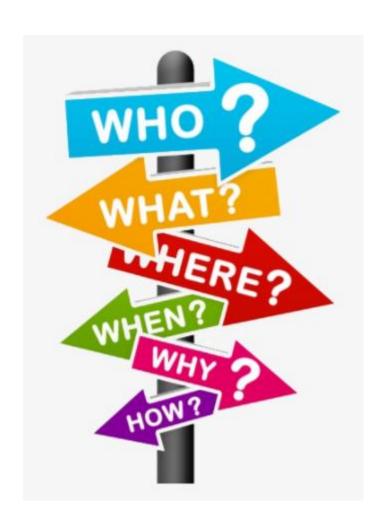






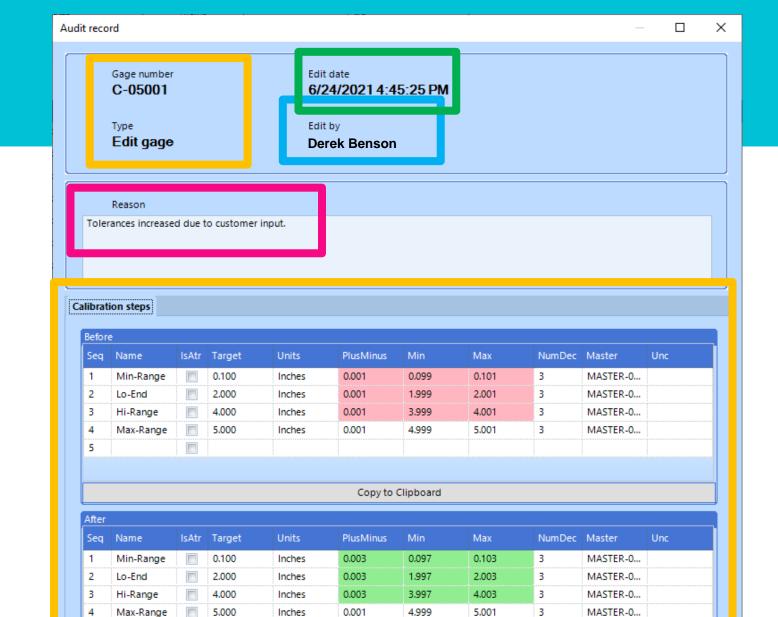






















RECIPE NAME:

Gage Management

PREP TIME:

30 min

COOK TIME:

1 hour

SERVES:

Everyone



INGREDIENT 5:



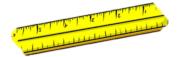














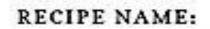








FROM THE KITCHEN OF PQ SYSTEMS



Gage Management

PREP TIME:

30 min

COOK TIME:

1 hour

SERVES:

Everyone



INGREDIENT 5:



Schedule all service events on all of our tools for October of each year to reduce the interruption caused by down time.





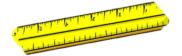


















FROM THE KITCHEN OF PQ SYSTEMS

RECIPE NAME:

Gage Management

PREP TIME:

30 min

COOK TIME:

1 hour

SERVES:

Everyone

INGREDIENT 5:

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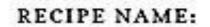








FROM THE KITCHEN OF PQ SYSTEMS



Gage Management

PREP TIME:

30 min

COOK TIME:

1 hour

SERVES:

Everyone

INGREDIENT 5:



Spread out the servicing events on tools at appropriate intervals throughout the year in order to reduce or eliminate downtime associated with these events.





















Why Calibrate?

- Don't assume your gages are accurate.
- Never use a gage that's behind on calibration.
 - Implement systems that prevent it from happening, where possible.
- Calibrate routinely per gage manufacturer recommendations.

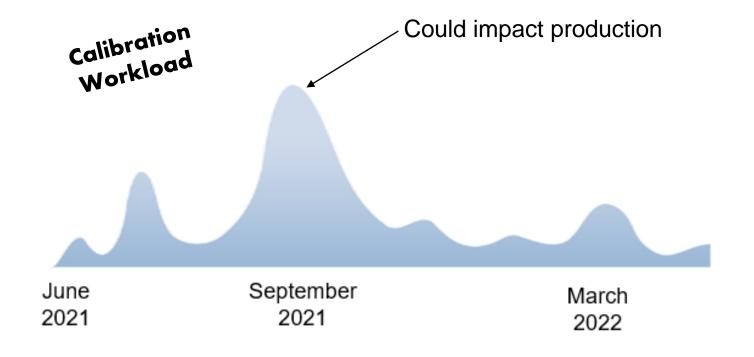
BONUS

 VERIFY gage is holding accurate throughout calibration interval.





Examine your Workload



- Be aware of peaks and valleys in your calibration scheduling so you can prepare.
- Work on calibration schedule to limit the peaks and valleys
- Calibrate early, if possible, to flatten the curve.



Calibration Intervals

Gages need to be checked at regular intervals to ensure they are accurate. But what is the right interval? How often should the technicians calibrate the gage?

Too often – waste of time and money!

Not often enough – possibly using a bad gage to check your parts!



Stability Study

A Stability study can be done to determine if your measurement system is stable (in control).

Checking to see if a gage is consistent and predictable between calibration cycles.



Stability Study

Results



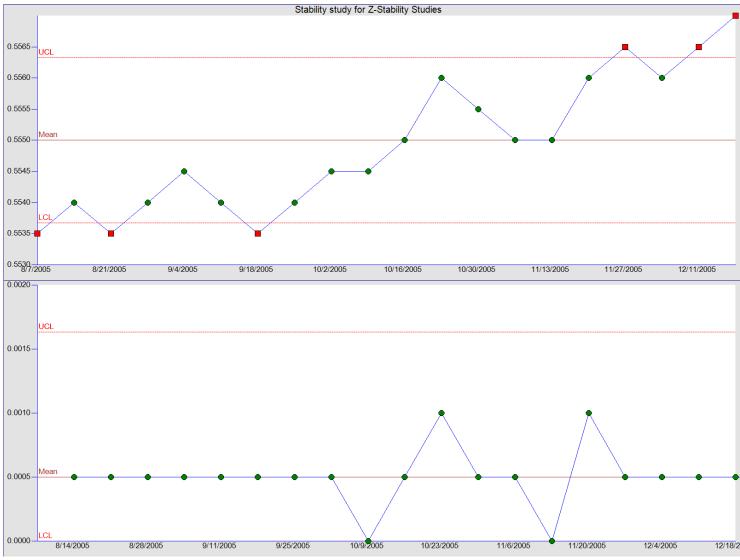




Stability Study

Results















RECIPE NAME:

Gage Management

PREP TIME:

30 min

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SERVES:

Everyone



INGREDIENT 6:









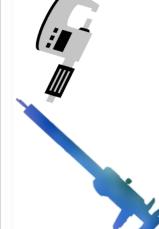












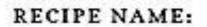












Gage Management

PREP TIME:

30 min

COOK TIME:

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SERVES:

Everyone



INGREDIENT 6:



Set a reminder for yourself to review the inventory every so often for upcoming service events.















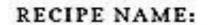








FROM THE KITCHEN OF PQ SYSTEMS



Gage Management

PREP TIME:

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SERVES:

Everyone

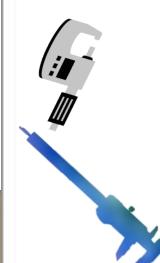


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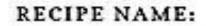












Gage Management

PREP TIME:

30 min

COOK TIME:

1 hour

SERVES:

Everyone



INGREDIENT 6:



Leverage technology to notify you of upcoming work to be completed on your gages so you don't find yourself using overdue gages.















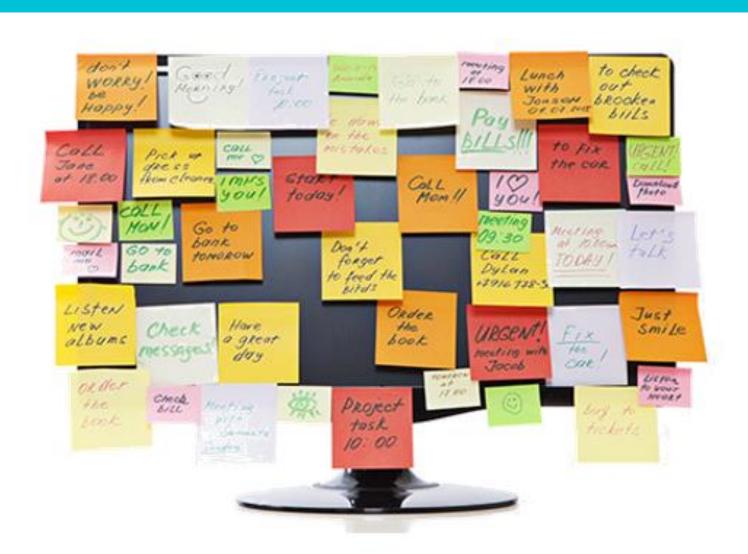








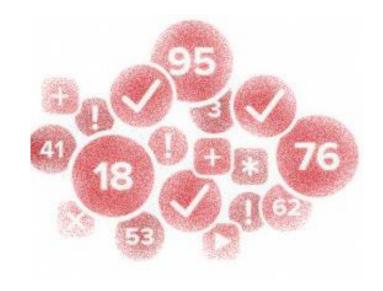








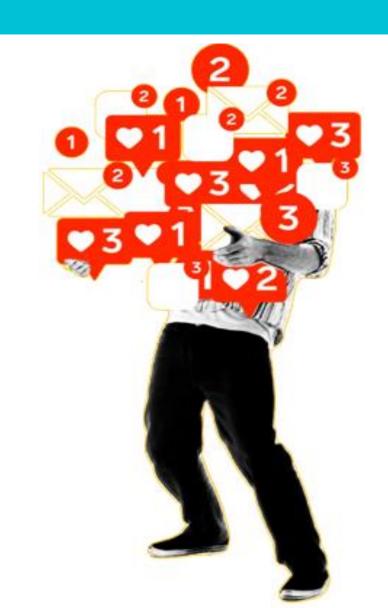
















Strings too loose? Won't play

Stings too tight? Will snap

Strings tuned just right can play beautiful music!

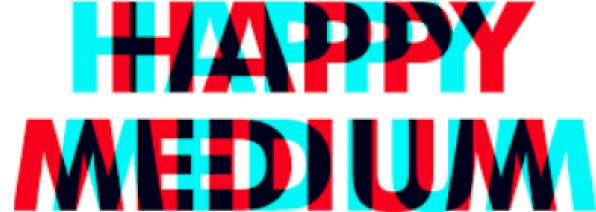




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1 hour

SERVES:

Everyone



INGREDIENT 7:





















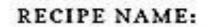












Gage Management

PREP TIME:

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COOK TIME:

1 hour

SERVES:

Everyone



INGREDIENT 7:



Remember to perform Measurement Systems Analysis on your gages to confirm they are measuring accurately.















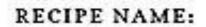












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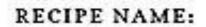












Gage Management

PREP TIME:

30 min

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1 hour

SERVES:

Everyone



INGREDIENT 7:



Remember to perform Measurement Systems Analysis to build trust and consistency in your measurement processes





















What are MSA Studies?

Everybody has a "junk drawer" in their kitchen, right?

Measuring cups are used every day!



It is like a calibration – checking to see if your gage is measuring correctly against a known reference value.





What are MSA Studies?



The "Specialty" Pampered Chef gadgets.













What are MSA Studies?



The "Specialty" Pampered Chef gadgets.

Variable R&R Study





Uncertainty Study



Linearity Study



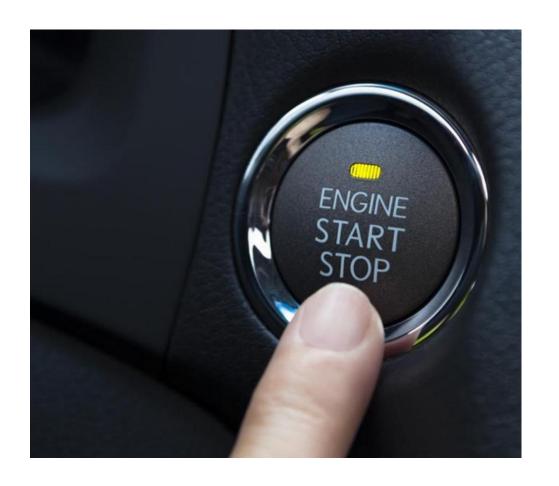
Stability Study





Calibration vs MSA

Checking for Accuracy – Within Tolerances





Calibration vs MSA

An analysis of my ENTIRE measurement system







Calibration vs MSA

An analysis of my ENTIRE measurement system





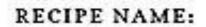












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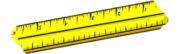


















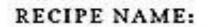












Gage Management

PREP TIME:

30 min

COOK TIME:

1 hour

SERVES:

Everyone



INGREDIENT 8:



As long as you get all the calibrations done ontime, there's no need to document each time a gage is used to measure specific parts.





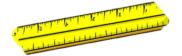




















FROM THE KITCHEN OF PQ SYSTEMS

RECIPE NAME:

Gage Management

PREP TIME:

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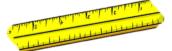












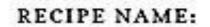








FROM THE KITCHEN OF PQ SYSTEMS



Gage Management

PREP TIME:

30 min

COOK TIME:

1 hour

SERVES:

Everyone

INGREDIENT 8:



Making a logical connection between the gages and the things they are measuring is, at some point, going to pay off big time!











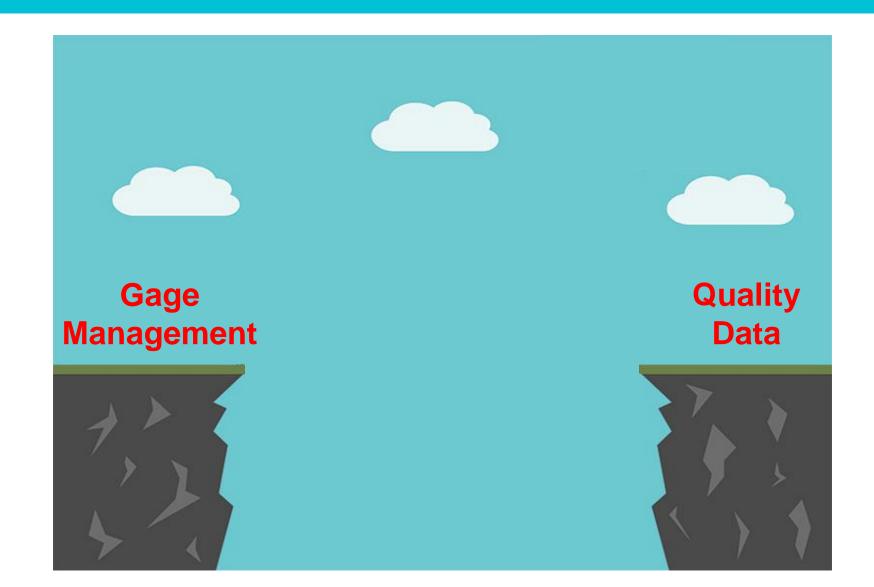






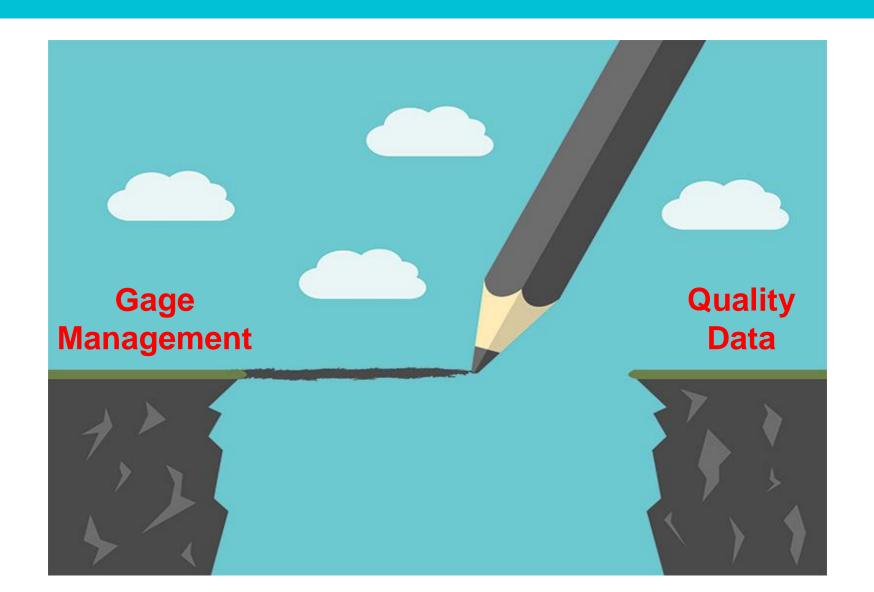


Build a Bridge!





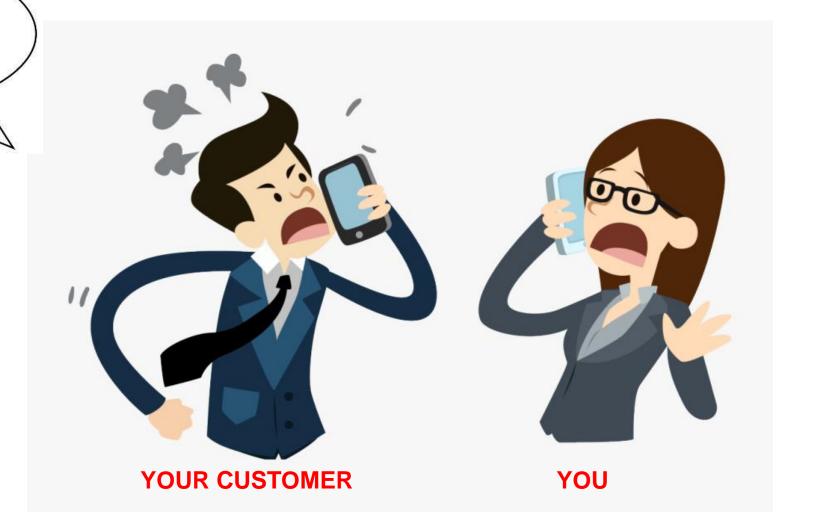
Build a Bridge!





What do you do?

The parts you sent me are the wrong size!





What do you do?





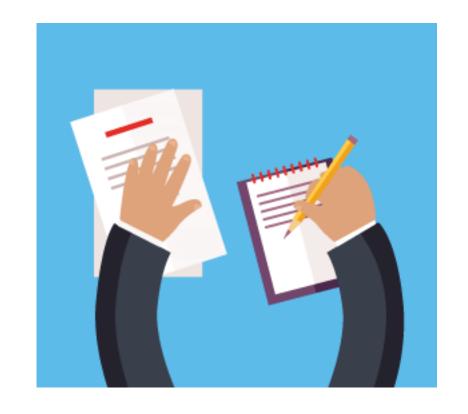
Build a Bridge!

• Document "Part-Usage" in your gage management system.

Allows you to extract all suspect parts following calibration failure.

 Document "Gage-Usage" in your quality data collection system.

Allows you to extract all involved gages following returned product.





Parts associated with gages PQ Systems

11/8/2020

All Gages

Gage number: DX-34585

Part name Description

Part 2 Brake cylinder - Pontiac

Part 3 Brake cylinder - Chrysler

Part 5 Brake hose fitting - Pontiac

---- Parts: 3

Gage number: M-01002

Part name Description
Part 4 Brake hose fitting - Ford

---- Parts: 1

Gage number: MASTER-06001

Part name Description

Part 2 Brake cylinder - Pontiac

---- Parts: 1

Gage number: MASTER-06002

Part name Description
Part 2 Brake cylinder - Pontiac

---- Parts: 1



Gages associated with parts PQ Systems

11/8/2020

All Parts

Name: Part 1						
Gage number	Gage type	Current lo cation	Last calib date	Calib due date		
PQS CAL 0001	Caliper	GageRoom				
PQS CAL 001	Caliper	GageRoom	4/13/2020	1/10/2020		
PQS CAL 02	Caliper	GageRoom	11/12/2019	1/10/2020		
PQS CAL 03	Caliper	GageRoom	11/12/2019	1/10/2020		
PQS CAL 04	Caliper	GageRoom	11/12/2019	1/10/2020		
PQS CAL 05	Caliper	GageRoom	11/12/2019	1/10/2020		
PQS CAL 06	Caliper	GageRoom	11/12/2019	1/10/2020		
PQS CAL 07	Caliper	GageRoom	11/12/2019	1/10/2020		
PQS CAL 08	Caliper	GageRoom	11/12/2019	1/10/2020		
PQS CAL 09	Caliper	GageRoom	11/12/2019	1/10/2020		
PQS CAL 10	Caliper	GageRoom	11/12/2019	1/10/2020		
PQS CAL 11	Caliper	GageRoom	11/12/2019	1/10/2020		
PQS CAL 12	Caliper	GageRoom	11/12/2019	1/10/2020		

---- Gages: 13

Name: Part 2

Gage number	Gage type	Current location	Last calib date	Calib due date
DX-34585	Micrometer	Quality Lab	8/26/2019	6/26/2020
MASTER-06001	Master Blocks	Quality Lab	7/4/2019	7/3/2020
MASTER-06002	Master Blocks	GageRoom	7/18/2019	7/17/2020
PM-Cal-0001	Caliper	Plant Floor	5/3/2019	11/1/2019
Gages: 4				

Name: Part 3

Gage number	Gage type	Current location	Last calib date	Calib due date
DX-34585	Micrometer	Quality Lab	8/26/2019	6/26/2020
PM-Cal-0002	Caliper	Plant Floor	5/6/2019	11/4/2019











RECIPE NAME:

Gage Management

PREP TIME:

30 min

COOK TIME:

1 hour

SERVES:

Everyone



INGREDIENT 9:





















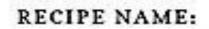












Gage Management

PREP TIME:

30 min

COOK TIME:

1 hour

SERVES:

Everyone



INGREDIENT 9:





The record retention requirement for our industry is 5 years. Purge the gage management system annually to remove things greater than 5 years old.

















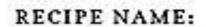








FROM THE KITCHEN OF PQ SYSTEMS



Gage Management

PREP TIME:

30 min

COOK TIME:

1 hour

SERVES:

Everyone



The record industry is 5 management greater than 5

t for our remove things

















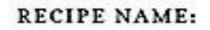












Gage Management

PREP TIME:

30 min

COOK TIME:

1 hour

SERVES:

Everyone



INGREDIENT 9:



Though the record retention requirement for our industry is 5 years, there's really no need to purge aging records from your gage management system unless space becomes an issue:











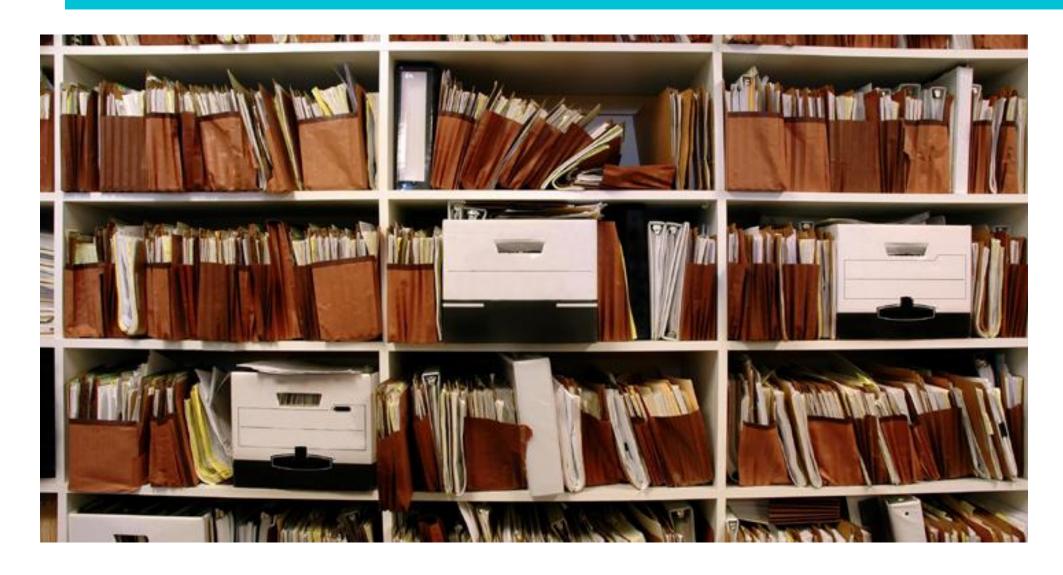




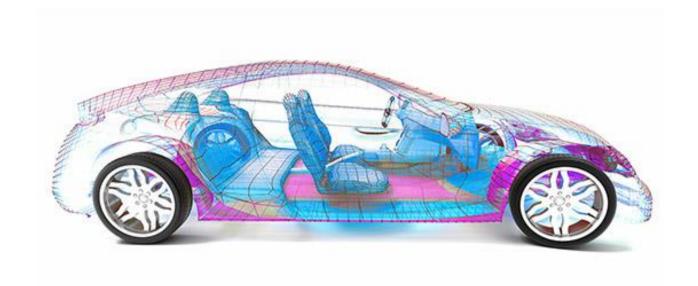












5 Years





10 Years





2 Years



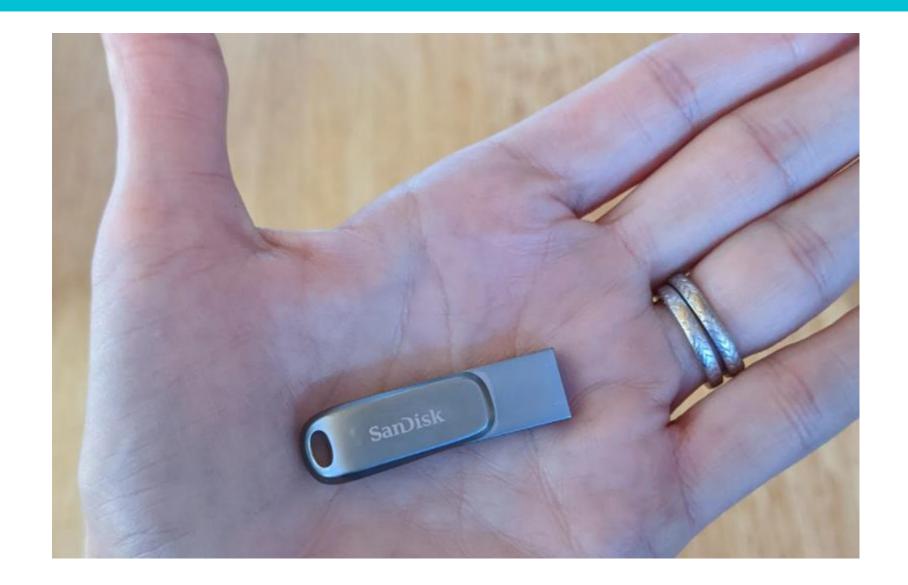
What's Required of Me?



6 Years



Reality...





What if...

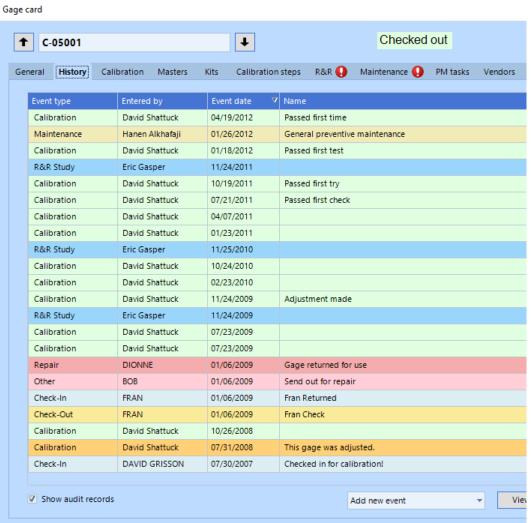


the doctor only sees
the past 5 year's
worth of your medical
history before
deciding how to treat
you?



What if...















RECIPE NAME:

Gage Management

PREP TIME:

30 min

COOK TIME:

1 hour

SERVES:

Everyone



INGREDIENT 10:



























RECIPE NAME:

Gage Management

PREP TIME:

30 min

COOK TIME:

1 hour

SERVES:

Everyone



INGREDIENT 10:



Employee buy-in is critical for the success of any quality process. Engage your teammates and make sure everyone understands why their roles in gage management matter.

















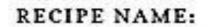


RECIPE









Gage Management

PREP TIME:

30 min

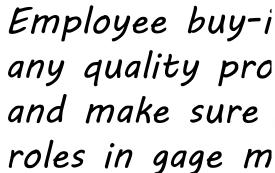
COOK TIME:

1 hour

SERVES:

Everyone

INGREDIENT 10:





the success of ur teammates tands why their er





























RECIPE NAME:

Gage Management

PREP TIME:

30 min

COOK TIME:

1 hour

SERVES:

Everyone



INGREDIENT 10:



Employee buy-in is critical for the success of any quality process. Engage your teammates and make sure everyone understands why their roles in gage management matter.









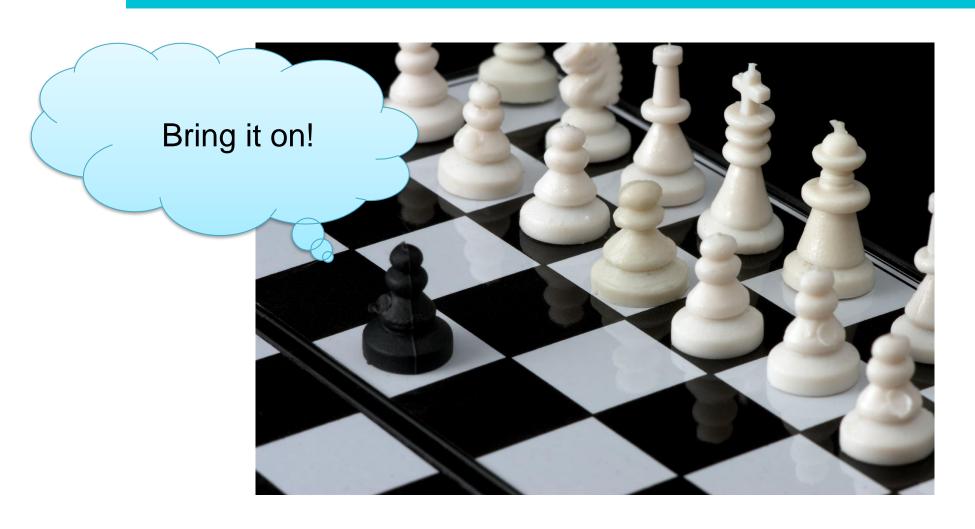








Creating a Real Team





Creating a Real Team





Motivation

If you wish to motivate others, you must **Captivate** them





Motivation

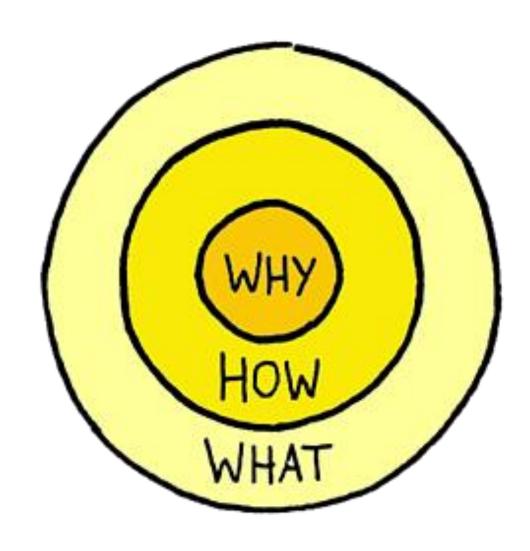
If you wish to motivate others, you must inspire
them





The Golden Circle

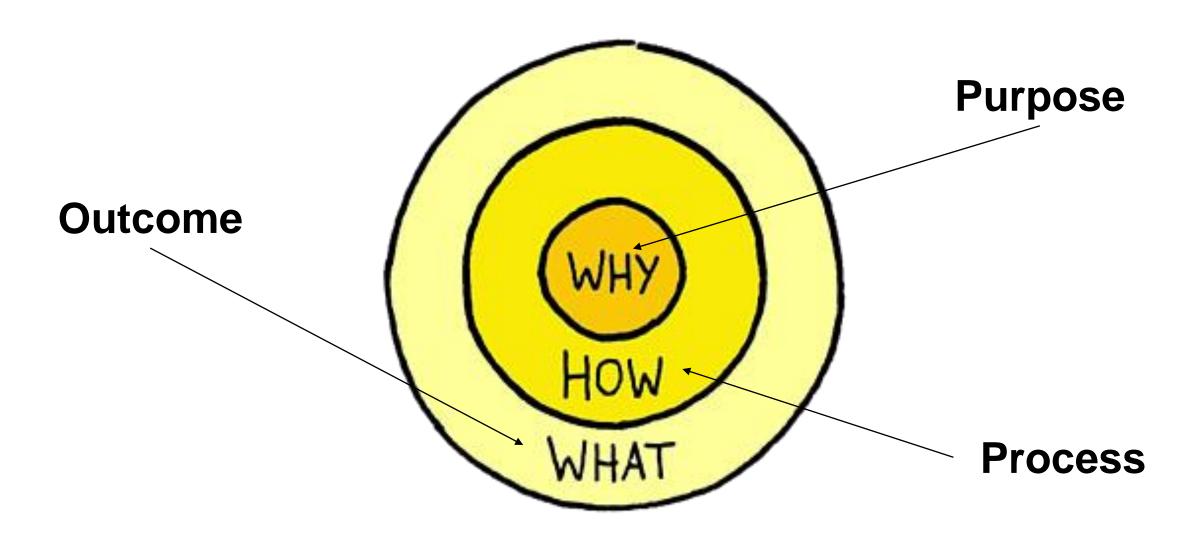
Simon Sinek





The Golden Circle

Simon Sinek





The Golden Circle

Simon Sinek

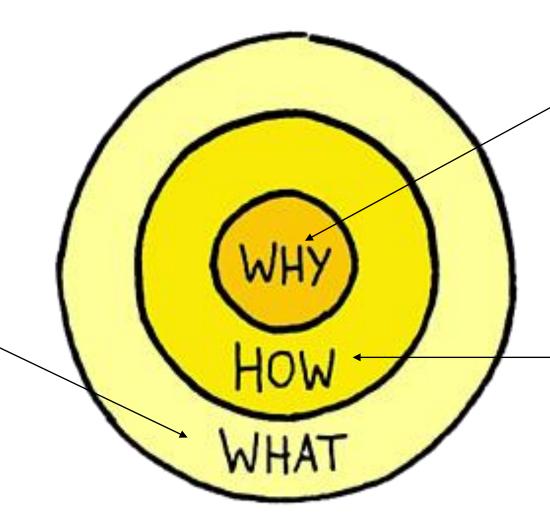




How about Gage Management?

Outcome

We know where all our gages are located, we know their history and we know they're accurate!



Purpose

We believe in delighting our customers with 100% acceptable products – exactly as we've promised.

Process

We've done all the things in this presentation to implement a sound, easy-to-use gage management system.











Thank you, Quality Digest



https://community.pqsystems.com/