

# **Production Basics**

#### Examining the Basics of Collision Production

#### **Presented by:**

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### **Production Basics**

- This webinar will cover the basics of collision center production and the need to develop a comprehensive work plan that will allow for predictive production forecasting.
- It will walk through determining the capabilities of the staff and how to compare productivity output to meet the financials needs of the store.
- □ Included will be:
  - maximizing stall to tech ratios
  - floor plan capabilities
  - measuring and validation practices
  - capturing and communicating results using production floor visuals



- 1. Identifying production capabilities by Technician/Staffing
- 2. Technician ratings
- 3. Measuring technician efficiency
- 4. Billable hours per day
- 5. Stall to technician ratio
- 6. Staffing requirements
- 7. Setting production goals

If no management system is available, a process worksheet is used to identify what production is required to meet the financial needs of the store







- The staff level and competency will identify the level of production or billable hours that should be able to be accomplished
- This is information is important so that the production manager can gauge the vehicle count requirements that will be needed to meet the financial goals of the store



- The typical ranking or competency is based on the ability to perform certain tasks, training that has been completed and the quality of the technician's work product
- These levels will identify how many hours the technician should be able to produce daily, weekly and monthly
- Detailed task lists and job descriptions should reinforce the performance expectations and measurements that will be used





- □ The A rated technician is described as the most skilled labor in the production environment
- An A technician is identified as either structural or non-structural by most standards and the job can differ depending on the expectations set by production management
- These should be addressed in the job descriptions and also the detailed within the accountability measurements







- Each technician "grade" will have a specified efficiency percentage that they should be able to achieve
- □ That efficiency will translate into an hourly production value daily (flat rate hours produced)
- That daily production labor hourly value is then added for a weekly goal by technician which is multiplied by the shop rate to identify what the production dollar value should be



MANAGEMENT

The target hours are established by multiplying the daily clock hours X the efficiency percentage

Billed hou	ur requirement	Labor sales divided by hourly labor rate)
Technicia	n requirement	Eff/hours divided by # of techs
#	A Tech	Eff/Hours
#	B Tech	Eff/Hours
#	C Tech	Eff/Hours
#	Helper	Eff/Hours
Total Tec	h Hours	Eff/Hours
Technician efficiency target		Clocked hours divided by turned hours

#### **Production Requirements**







Technician Performance	and Efficiency					
"A" Structural o	r body technicia	r 175% ef	fficiency	14 daily	70 week	dy
"B" Body techni	cian	160% ef	fficiency	12.8 daily	64 week	dy
"C" Body techni	cian	150% ef	fficiency	12 daily	60 week	dy
"D" Body helper	r	110% ef	fficiency	8.8 daily	44 week	dy
"A" Paint techn	ician	200% ef	fficiency	16 daily	80 week	dy
"D" Paint helpe	r	100% ef	fficiency	8 daily	40 week	ly*
		(Add 40	% to the p	ainter requirer	nent or	
		an addi	tonal 32 ho	ours)		





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**If no management system is available**, a process worksheet is used to identify what production is required to meet the financial needs of the store

Production Process Worksheet		
Example		Actual/Goal
Hours Needed Per Week for Production	384	Hours Needed Per Week for Production
Daily Productivity Hours Actual	77	Daily Productivity Hours Actual
Inventoried Hours - Parking Lot	257	Inventoried Hours - Parking Lot
WIP Report minus Todays Closed	127	WIP Report minus Todays Closed
Daily Scheduled Hours (9 hrs. or less)	18	Daily Scheduled Hours
Billable Hours Per Week Avg.	384	Billable Hours Per Week Avg.
Plus or Minus Needed Daily Hours	0	Plus or Minus Needed Daily Hours
Technician Production Average	76.8/15	Technician Production Average
Number of technicians required	5	Number of technicians required
Daily production goal (car count) (21.5 Avg)	2.4	Daily production goal (car count)





# **Scheduling Production**

- □ There are various ways to schedule production
- The important fact is that unless you follow a scheduling process, it is likely that there will be production bottlenecks
- Establishing the production hours per day, deliveries per day and focusing on technician productivity will help to ensure that the maximum amount of production is accomplished
- Scheduling by hours is the preferred method



MANAGEMENT

# **Blending Your Production Hours**

- Work scheduled with an authorization of repair
- □ Speed lane or 9 hour or less work identified for "0" day production
- Work in progress more specifically, work that has been started and labor and parts have already been allocated against it







# **Balancing the Hours**

- Understanding scheduling
  - Does having work scheduled out 6-8 weeks put the work at risk?
- Scheduling throughout the week
  - **D** Keeping the flow of work consistent and helping improve efficiency and closure rate
- Daily closure requirements
  - **D** How will identifying daily closure requirements help keep focus on productivity?





## **Potential Loss of Repair Work**

- Statistically it is a fact that the further out the work is scheduled the more likely it is that the potential to lose the work to competitors increases
- There is comfort in knowing that work is scheduled out that far, but the risk of losing it increases significantly
- □ Typically customers are comfortable in scheduling out no more than 4 weeks



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## **Potential Loss of Repair Work**

- Capacity can be improved by developing a schedule that includes bringing in vehicles throughout the week versus "in on Monday and out of Friday" which was mandated by insurers to avoid weekend rentals
- Being creative in the timing may include arranging for weekend rentals to be paid by the store to maintain a full Monday schedule for the paint shop (some markets \$9.99 per day)







# **Driving Production Behavior**

- Using production SOPs (Standard Operating Procedures)
- Creating and communicating measurements and use of production visuals
- Conducting effective release meetings
- Communicating effectively
- Technician efficiency worksheets
- Production floor status boards







Production Process Step SOP #1

1	Administrative Processes	Complete all preproduction administrative processes – repair order creation	Be sure that all preproduction forms are signed and in file
2	Team meeting at vehicle	Team leads at vehicle to review damage prior to assessment	Record damage, paint codes, VIN, option plate, model identifiers and options. ALLDATA or other repair information identified
3	Painter	Use variant chips to identify the variant that will be used in painting the parts	Complete spray out panel
4	Lead Technician	Identify structural and non- structural damage that will be repaired	Estimator blue/printer to establish the times to be assigned to the repair areas
5	Estimator/blue printer	Begin the estimating process open estimating software and begin the documentation process	Begin the parts identification process while supervising the meticulous disassembly process
6	Disassembly technician	Disassemble vehicle following instructions from blue printer	Red Dot Green Dot all parts for easy identification and stack in separate piles for count and documentation
7	Parts Order List	Create the part order as disassembly is taking place	Be sure that all red dot parts are counted and identified on the estimate and count is verified
8	Create parts order and order parts	Vendor contacts and identification of the appropriate parts for the repair	Verify delivery times and receiving process
9	Receive Parts	Vendor delivery – receive parts and mirror match against all red dotted parts for replacement	Verify all parts are received and any missing parts are reordered
10	Parts Carts	Part cart should be RO numbered and parts placed	Small parts in totes large parts on shelves

11	Pre-paint applicable parts	Any parts that can be cut in or pre-painted	Place parts back on cart after painting/cut in
12	Assign repair to the technician	Once vehicle is assigned to the technician, car is placed in stall and part cart moved to the repair bay behind the vehicle	Repair process should be reviewed between the repair tech and the blue printer too ensure that all repairs are identified and any variations discussed
13	Log hours on status board	Log technician assigned hours on to status board to allow for technician to review assigned hours, close date and status	<ol> <li>Assigned hours</li> <li>Assignment date</li> <li>Total hours</li> <li>Target Completion Date</li> </ol>
14	Follow up	During daily meetings update from technicians by repair order	





#### Incoming Work Schedule Process SOP #2

- Establish goals
- Identify WIP
- Identify daily production requirements

**Collision Repair Facility Production SOP II** 

#### Incoming Work Scheduling Process

1	Establish daily/weekly hourly intake goal	Using the forecast for financial requirements, identify the number of billed hours required per day
2	Identify daily/weekly efficiency and productivity goal by technician	<ol> <li>Technician proficiency/efficiency goal by day/week</li> <li>Identify</li> </ol>
3	Verify intake and delivery goals by day/week	Goals should be consistent with intake and delivery being equal
4	Identify WIP to be sure that the store is capable of producing new hours without sacrificing in process hours	In management system complete a WIP report and compare it to vehicles on the floor – Floor walks each day will help in validating the list
5	Create and use the scheduling board to ensure clear communication of scheduled hours	<ol> <li>Scheduled hours</li> <li>Production per day requirement</li> <li>End of day production report</li> <li>WIP production</li> </ol>
6	Place scheduling board on production floor and in office	<ol> <li>Update board in office</li> <li>Production board on production floor</li> </ol>
7	Don't schedule more than 10% additional hours if your technicians are producing less than 160% efficiency	Over scheduling will lead to increased work WIP and reduce floor plan efficiency
8	Schedule hours MONDAY THROUGH FRIDAY	Make arrangements to have vehicles over the weekend with the insurer
9	IF THE SCHEDULE IS FULL SCHEDULE FOR THE NEXT AVAILABLE DAY	Do not over schedule!





#### Incoming Work Schedule Process SOP #3

- Disassembly and repair planning processes
- Use of part carts and organizational steps
- Developing long-term strategies for identifying everything required for the repair

1	On all applicable vehicles complete scan code diagnostics in accordance with the manufacturer specifications	Be able to provide OEM position statements to insurers, customers and the file
2	Complete and total disassembly of damage areas	Each component must be broken down to its component parts to identify any possible damage
3	Blue printer should identify areas of the vehicle that will be totally disassembled prior to the disassembly tech processes	Identify areas to be disassembled by using color coded dot to identify part to be repaired or replaced
4	Use dedicated parts carts and totes numbered for the vehicle repair order so that the parts remain together during disassembly and build back	Be sure that the part cart and tote have the damaged vehicle repair order affixed to them so that part aren't lost or damaged
5	Be sure that all splash shields, inner shields and other plastic parts are removed for observation	Transfer all removed parts to the parts cart for reinstallation or replacement
6	Be sure that all clips, rivets and other fasteners are included in the part counts and the ordering processes to be sure that they are included on the estimate and most importantly charged out in the estimate and the parts order	Verify fastener and part procurement orders with the vendor especially in areas of aftermarket parts to ensure that they will meet the fit and finish requirements of the vehicle
7	Develop and document the pull plan for the damage and complete any pre-pulls that may be necessary to access damage areas for diagnosis or replacement	Measurements should be taken in three steps: 1. Pre-pull 2. During pull 3. Post pull
8	If vehicle is immobile, make sure that it is able to be rolled from location to location within the production area whenever possible	Remember that any repairs needed to make the vehicle more accessible are chargeable as operations during the repair

**Collision Repair Facility Production SOP III** 

Collision Repair Facility Production SOP III Be sure that all mechanical parts Perform steering and suspension 9 are checked to ensure that they quick checks whenever possible are properly identified for repair to verify need for mechanical or replacement parts If available for use, check Up front research will help in 10 ALLDATA \$3500 for repair avoiding delays in part ordering procedures to ensure that any and potential issues with changes in the vehicle design or structural sectioning or parts that parts are properly identified to are heated during the repair avoid mis-ordering of parts process Be sure that everything that is Use quick codes whenever 11 identified is documented possible to help in identifying thoroughly avoid missing any repair opportunities repair, part or time opportunity on the vehicle When parts arrive completed the This must be a combination of 12 check in process including tech and blue printer involvement invoice review, invoice part to make sure that everything is number count and mirror aligned for the repair processes matching the parts against the damaged parts that will be replaced Once everything is identified as Place car in repair line up 13 proper, car is ready for production





#### Incoming Work Schedule Process SOP #4

- Administrative processes
- □ Vehicle review
- Repair planning
- Parts order processes

	Initial	Production St	eps SOP
1	Administrative Processes	Using the ATI vehicle check in sheet, be sure that the following has been completed and documented with signature prior to the vehicle being sent to production	Photos completed     All safety systems checked for function (dash code check)     All accessory systems work (door locks, windows, trunk lock, ALL lamps etc.)     Any exterior issues are documented     Auv interior issues documented
2	Vehicle Review	When hand off is completed from administrative to repair planning:	<ol> <li>Review the check in sheet against the vehicle</li> <li>Verify that systems are functioning</li> <li>Verify that all owner requests have been identified in file and on vehicle</li> <li>Identify any issues found at check in</li> </ol>
3	Repair Planner	Prior to completing estimate: –	<ol> <li>Complete measuring when applicable</li> <li>Identify any structural replacement and or realignment where heat will be used</li> <li>Obtain and print off ALLDATA or other OEM repair requirements</li> <li>Perform pre scan to check for unseen electronic or electrical issues</li> <li>Conduct safety system check i.e. seat belts, pre tensioners, steering column length in air bag deployments</li> </ol>
4	Lead Technician	Assist repair planner in reviewing vehicle damage	<ol> <li>Conduct review of the vehicle with the repair planner</li> <li>Assist in developing repair plan</li> <li>Identify repair processes with repair planner (not times)</li> <li>Identify parts needs and best part solutions for vehicle</li> </ol>
5	Pre- disassembly	Repair planner and lead tech and identify what will need to be removed to expose all the damage	<ol> <li>Identify all components that will have to be removed for refinishing</li> <li>Acknowledge refinish steps that will be performed to bring vehicle to pre-loss including blends, texture and multi-color</li> </ol>

Collision Repair Facility Production SOP IV

-	Disassembly	As vehicle is being	1. As components are removed u
6	technician	disassembled, complete micro-bagging processes	zip lock bags to place fastener in to keep them together by component I.E. bumper group core support, fender and label each bag using a Sharpie
			<ol> <li>If damaged fasteners are identified, relay that informati- to the repair planner. If it is a stocked item add the part to th list and then place the new par in the bag</li> </ol>
			<ol> <li>Make sure that all parts are added to the estimate/repair plants</li> </ol>
7	Parts Order List	As the disassembly technician removes the parts using the red dot green dot processing will provide the visual indicator relative to what will be replaced	Each part that receives a red dot should appear on the repair plan as well as the part order. This will validate the amount of parts that will be ordered by providing the number of red dots aligning with the number of parts required
8	Create parts order and order parts	MOVE TO PRODUCTION PROCESS SOP	MOVE TO PRODUCTION PROCESS SOP





#### **Operational Process Steps SOP #5**

- Parts
- Technician
- Repair planning
- Operational direction

	Parts	/Production St	eŗ	os SOP
1	Parts	Parts are validated by parts receiver for count and invoice comparison	1. 2. 3.	Receiver reviews parts invoice and part count Parts are matched by part number to estimate Parts are gathered into tub or to cart for transfer to the repair technician
2	Technician Parts Review	Parts receiver brings parts to technician bay for mirror matching with the damaged parts	1. 2. 3.	This step ensures that the part that was identified for the car matches the part that came off the car Verification that the part count, part type and quality of the part are adequate for the repair of the vehicle If the part is deficient in match or quality, the receiver can then immediately reorder with the assistance of the technician
3	REORDER	If a part is identified as being deficient in any way, they part will immediately be reordered and expedited to ensure on time repair processing	1. 2. 3.	Identify why the part had an issue, what will resolve the issue Contact vendor if it is an order issue Contact the insurer if it a part issue resulting from their programs if used
4	Initiate Repair Processing	Technician begins repair processing verifying any additional areas that weren't identified in the initial blue printing. This should be drastically minimized by proper disassembly processes	1.	In the event that additional damage is identified or during a pulling process a part is determined to now require replacement versus repair, immediate part order, supplement handling and authorization must occur This will reduce down time as a result of the supplementing process
5	Technician Standard Work	The repair technician in each area of repair will be required to repair the vehicle to the industry standard of repair	1.	All clearly identifiable repair processes and procedures are to be followed to the OEM specification Any documentation that provides repair detail should be printed and accompany the vehicle through the repair process
6	Operational SOP 1	The repair technician will follow all vendor/supplier SOPs for use of materials	1.	Some materials may require specific drying instructions/times, installation instructions and specific widths and heights of adhesives

**Collision Repair Facility Production SOP V** 

	Collision	Repair Facility Pro	duction SOP V
			<ol> <li>All appropriate material SOPS provided by the material manufacturers must be followe especially in areas where FMV standards are identified</li> </ol>
7	Operational SOP 2	Grinding and abrasive requirements	<ol> <li>There are specific requirements by base metal of plastic for substrate preparation. It is expected that these will be followed by the repair technicic to avoid situations where the ba material thickness is affected</li> <li>The use of heavy grit grinding discs has been identified as a ke concern area by vehicle manufacturers. Technicians should reference these by manufacturer</li> </ol>
8	Operational SOP 3	Sanding and final sanding prior to paint preparation	<ol> <li>Final sanding by the repair technician of body plastic ends 150 grit abrasives</li> <li>All work should be checked to ensure that prior to the vehicle going to paint prep that the repa area is straight and conforms to the operational standard</li> </ol>
9	Operational SOP 4	Featheredge Block and Priming	<ol> <li>The point at which the repair er and the featheredge block and prime begins is at 150 grit and ends with the repair areas considered finished at 220 grit.</li> <li>This process needs to be noted the repair plan as a not include operation and should be calculated at refinish time to receive compensation for materials</li> <li>This operation can be performe by repair tech or prep tech</li> </ol>
10	Refer to next process step	Refinish Preparation SOP	oy repair teelt of prep teelt





#### **Paint Preparation Steps SOP #6**

- Repair SOP defined
- □ Where paint begins
- Preparation steps
- Reference to OEM/Paint manufacturer installation steps

**Collision Repair Facility Production SOP VI** 

#### Paint Preparation Steps SOP

1	Paint Prep	Depending on the approach by the production team paint preparation may begin at 150 grit or 180 grit depending on the delegation of the mid process step of featheredge block and prime (FBP)	1. 2. 3.	Depending on the in store SOPs that are predetermined by the store management, the FBP activities can be handled by either the body tech or the paint tech. A being the paint tech B being identified as the body tech in the following steps
2	A	If the paint team handles the FBP, that process will begin at 150 grit.	1.	Prepper or painter will level the repair area with appropriate grit abrasives to a point where primer can be applied to final block This process makes the repaired panel area equal to "new OEM" As outlined in the P page logic so that sealer can be applied
3	В	Body technician takes the repair to 150 and then begins the process as described in 2, A 1 and 2 above	1. 2. 3.	Body tech is responsible for bringing the panel to a point where the mid-level repair FBP is completed. In this scenario the technician will now bring the damage to "final prep" where the painter begins refinishing operations This would be paid to the technician as a separate operation which will take the primed area to 220 grit making it equal to OEM e coat
4	Paint Prep	Once the repair area has been FBP processes completed, the panel is ready for final prep, sealer and final masking for the refinish processes	1.	Panel is final cleaned and scuffed according to your paint manufacturers specifications and their operational SOPS All items required to get the panel to this point are to be not included items as they are predetermined by all estimating systems to be not included refinish operations
5		Refer to Paint Manufacturer Refinish SOPs	Re Re	efer to Paint Manufacturer efinish SOPs







# **Release Meetings**

- Conducting the release meetings is essential in developing a culture that is production oriented
- Build a culture of inclusion
- Be consistent, and build repeatable processes
- Deliver the message on time

# **Daily Release Meetings**

Daily Release or Progress Meetings are a vital ingredient of a successful collision center. These meetings should be held precisely at the designated times, brief and focused only on the suggested topics.

Key feedback from participants is a must.

Encourage all employees to "speak-up" if they see a vehicle that could be delivered earlier than expected. Consider rewarding this type of behavior publically by commending the employee at a meeting or even a small \$5.00 - \$10.00 monetary reward or lunch gift certificate. Stress that the vehicles to be delivered each day are to be completed "First" before any other repairs are started or completed.

It is strongly advised that the shop management conduct these meetings daily as suggested to improve communication between staff and technicians as well as increasing shop productivity and decreasing repair cycle times.

Repair planners/estimators should leave the 1<sup>st</sup> daily meeting and immediately update their customers.

If all repair goals are not being met after these meetings are implemented, a 4<sup>th</sup> meeting can be held at 3:00 following the 3<sup>rd</sup> meeting format for a temporary period can increase the attainment of production goals.







# **Release Meetings**

- Administrative Staff meeting should be completed prior to the production meeting
- Determine the order of repairs
- Identify any special circumstances
- Then handle the production staff identifying if repair deadlines will be met and any potential barriers

2<sup>nd</sup> meeting suggested: Time: 8:00 AM Attendees:

Manager or Production Manager, Parts employee, Technicians, Detailer

1st meeting suggested:	
<b>Time:</b> 7:30 AM	
Attendees:	
Manager, Production Manager, Estimators, Parts employee	vnectation
Meeting Time Expectation:	xpectation
15-20 minutes	
Subjects Discussed:	
Vehicles expected to arrive that day for repairs	
Each vehicle at shop	
Each vehicle's body repair out time	
Vehicles to be painted that day	
Vehicles to be painted the next day	
Vehicles to be delivered that day	
Any 1 day repairs scheduled	
Vehicles to be delivered the next day	
Parts problems/delays	
Sales/Vehicle Delivered Daily Goal Update	





- Administrative Staff meeting should be completed prior to the production meeting
- Determine the order of repairs

- □ Identify any special circumstances
- Then handle the production staff identifying if repair deadlines will be met and any potential barriers

Collision	n Center						
					\$44.00		
	Job Accountability	Efficiency Req	Daily	Weekly	Labor Sales		
	Painter #1 F/R	200%	16	80	3520		
	Painter #2 Hourly	115%	9	45	1980		
	Body #1 F/R	163%	13.04	65.2	2868.8		
	Body #2 F/R	163%	13.04	65.2	2868.8		
	Body #3 F/R	163%	13.04	65.2	2868.8		
	Mechanical	Full Service?					
			Daily hrs	Weekly hrs	Tech labor	Weekly sales	Average Tech
			64.12	320.6	\$14,106.40	\$28,212.80	\$2,821.80







Directions	for use								
	1. Goal hours are essentually are what is determined by the grade of technician and what they should produce								
	given the established efficiency for their grade 2. These are the hours that are assigned daily to the technician for production. They will be cumulative as t								
									s the
	week prog	gresses.							
	3. Repair orders will be listed for which the hours have been assigned								
	4. Daily hours that the floor is available and the technician is on site to take production hours								
	5. These are the daily hours that have been flagged or completed by the technician. These hours are to be							e	
	subtracted from the assigned hours with the remaining time to be moved to WIP hours yet to be completed 6. WIP work in process hours. If hours have been completed, they should be included in the tally for the flagged								
	hours for purposes of identifying the technicians effeciency numbers. These hours will not clode however until							er until	
	the job is completed even though they are counted for efficiency.								
	-	-	_						



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- Using visuals such as this tool from AKZONobel's production tracking system are very effective in showing where in the production process the vehicle is
- Color coated dots show where the vehicle is in the progression





- Each area of the store is represented in the vertical line
- It's easy using this type of production tool to identify when a vehicle is ready to move to the next stage in the repair process







## **Production Variables**

- Location of production area in relation to other repair areas in the store
- Targeting the number of vehicles that can be produced per day/week moving them into production at the proper rates so that bottlenecks aren't created





# **Avoiding Production Bottlenecks**

- □ Stall to tech ratio control to help ensure that maximum productivity can be reached
- □ A ratio of 2.5 to 1 allows maximum productivity by vehicle and throughput
- Adding new technology in the repair area i.e. tools and equipment can also improve productivity









# **Avoiding Production Bottlenecks**

- □ Identifying the rate at which vehicles can proceed through the spray booth
- Targeting the number of vehicles that can be produced per day/week moving them into production at the proper rates so that bottlenecks aren't created









## **Avoiding Production Bottlenecks**

- Regulating the hours into production so that WIP work is cycled through daily production activity
- Production management is essential to ensuring the throughout is regulated





AUTOMOTIVE MANAGEMENT

### **Production "DOs"**

- □ Schedule work so that it is able to be processed efficiently and completely
- Be sure that the capacity matches the output. The technician count must match the necessary throughput requirements
- Set production targets which will allow technicians to be productive without spreading them out among to many jabs that none get completed
- **5**S your store to ensure a production environment that supports maximum throughput



### **Production "DON'Ts"**

- Don't over schedule work which will result in vehicles sitting waiting to get into the store
- Don't continue to assign work when technicians aren't meeting their efficiency requirements
- □ Manage the production environment, don't let the "I need another job" manage it for you
- Don't put so many cars on the production floor that time is lost in moving them to get things done



MANAGEMENT

## **Create a Quality System**

- Document your daily processes
- Create job descriptions and communicate responsibilities and expectations
- Put measurements in place and meet with your staff to ensure compliance
- Complete quality control measurements
- Audit/review for compliance
- Reward excellence







### **Production Basics Closing Statement**

Thank you for attending and don't forget to take your test!

#### Keith Manich

ATI Collison Director Automotive Training Institute





