Work Standards
Standard Work
Standardized Work

Breaking down the confusion

Webinar - March 24th (11:30 AM – 12:30 PM)

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Welcome…

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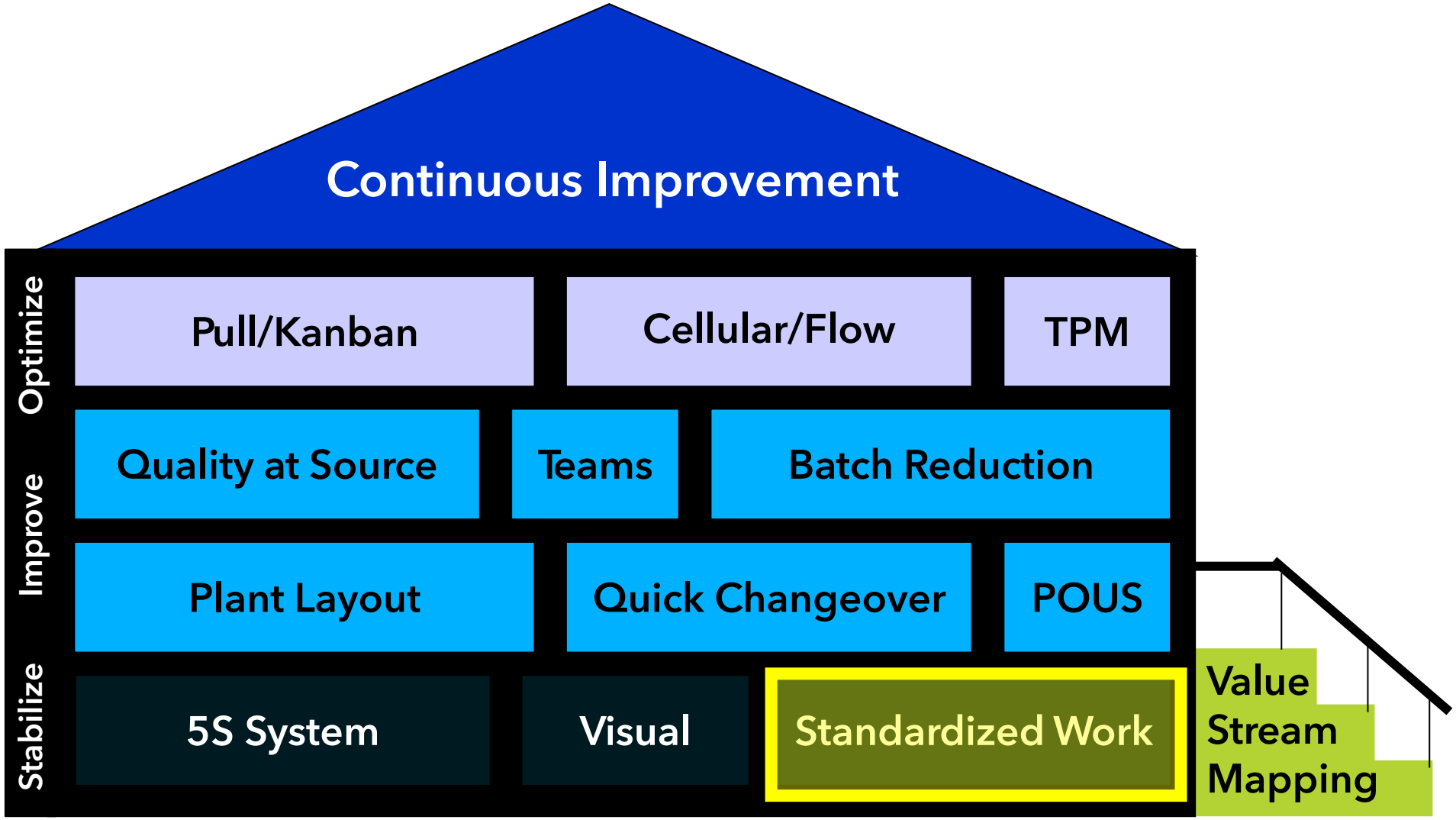
Lean Building Blocks



Work Standard

Standard Work

Standarized Work

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Standard

- regularly and widely used, available, or supplied
- well-established by usage and very familiar
- substantially uniform

"Standard." Merriam-Webster.com Dictionary, Merriam-Webster, https://www.merriam-webster.com/dictionary/standard. Accessed 3 Jun. 2025.

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Work Standards

One best way (standard) to do work safely and re-producing a quality outcome.

Work Standards can take several forms…

SOPs	Work Instructions	Job Aids
Standard Operating Procedures	**Job Breakdown Sheets (JBS)**	**What aids us – helps us!**

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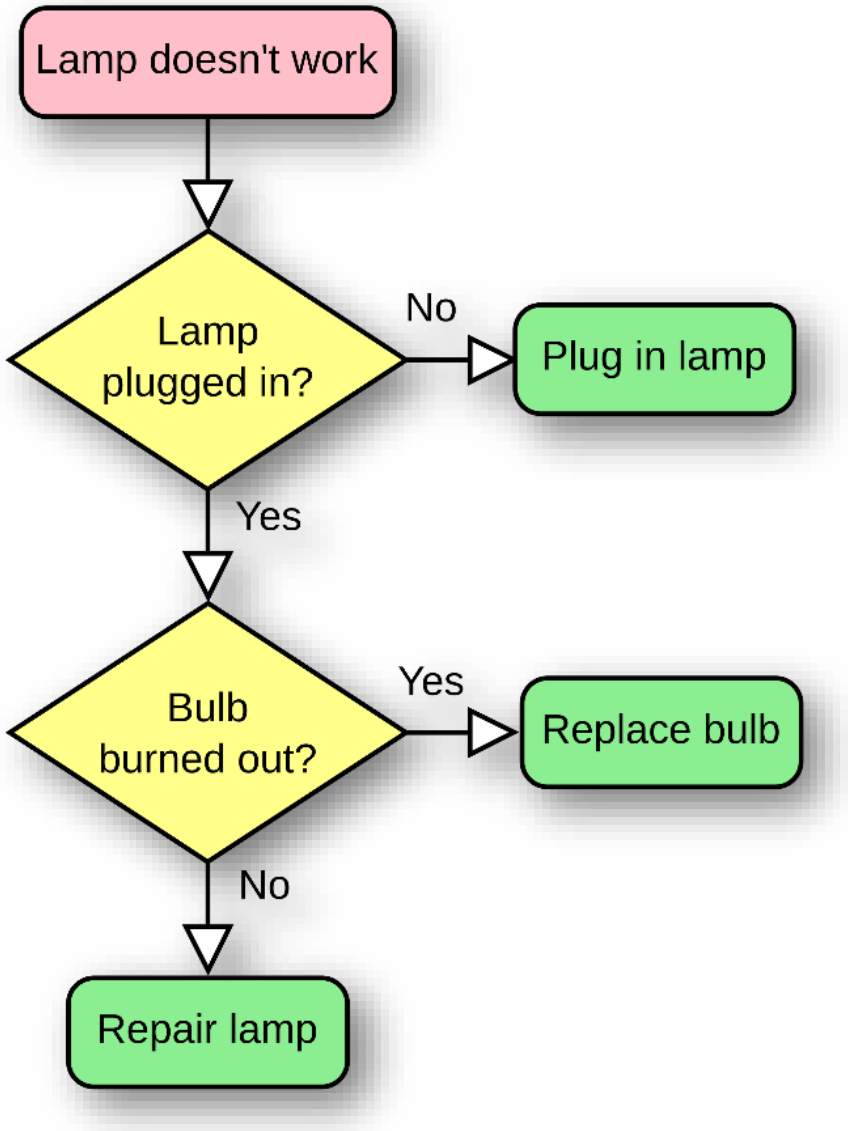
Work Standards

Standard Operating Procedures (SOPs)



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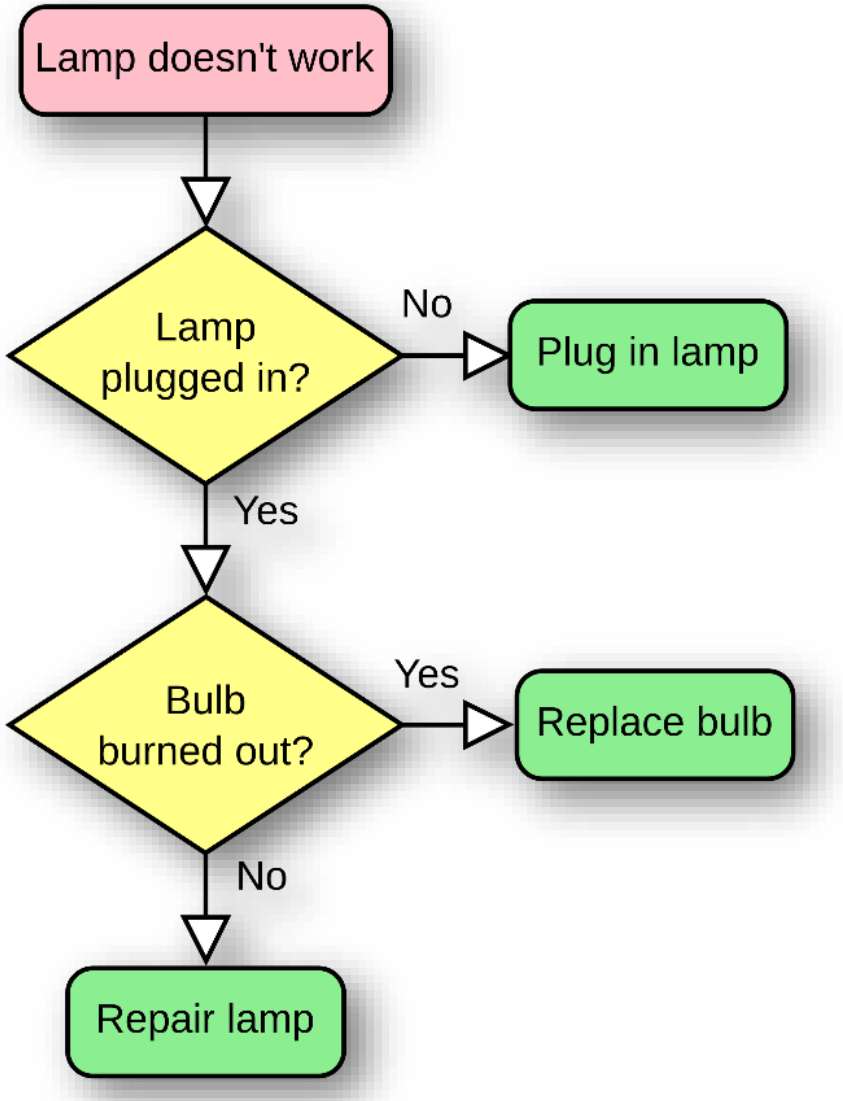
Work Standards

Standard Operating Procedures (SOPs)

- Sequential
- Standardized approach
- Controlled documents



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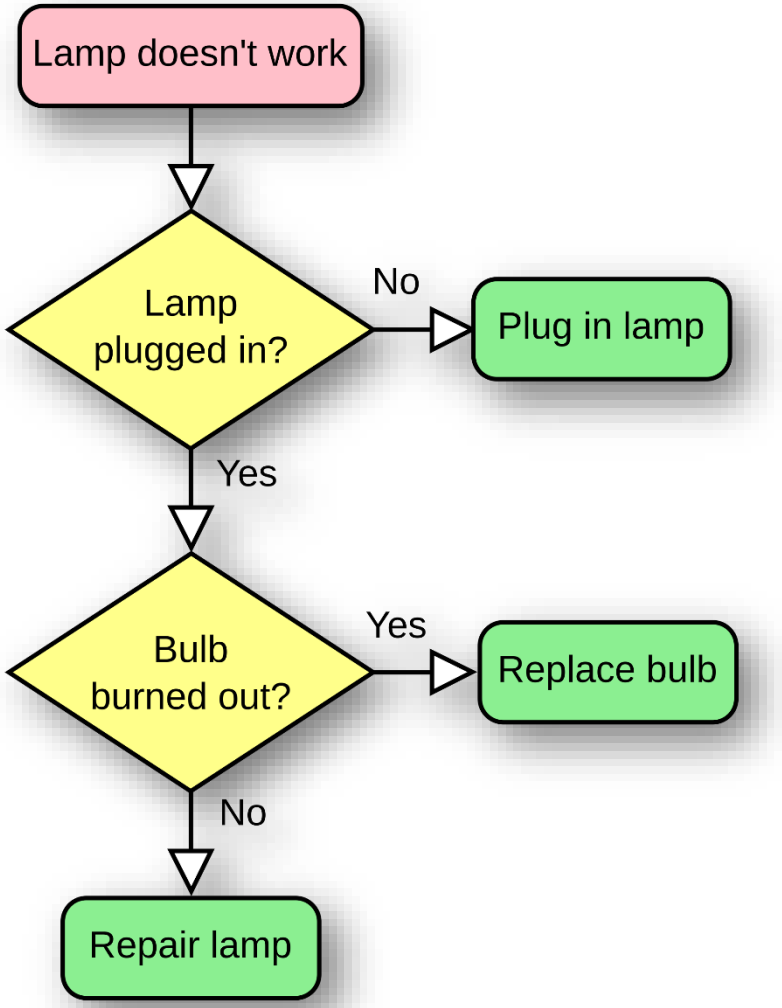
Standard Operating Procedures (SOPs)

- SOPs are informational more than they are instructional.
- SOPs provide a high-level summary of the workflow.
- Standard Operating Procedures typically don’t get to the instructional level of how to do the work, this level of detail is reserved for supplemental work instructions and job aids.



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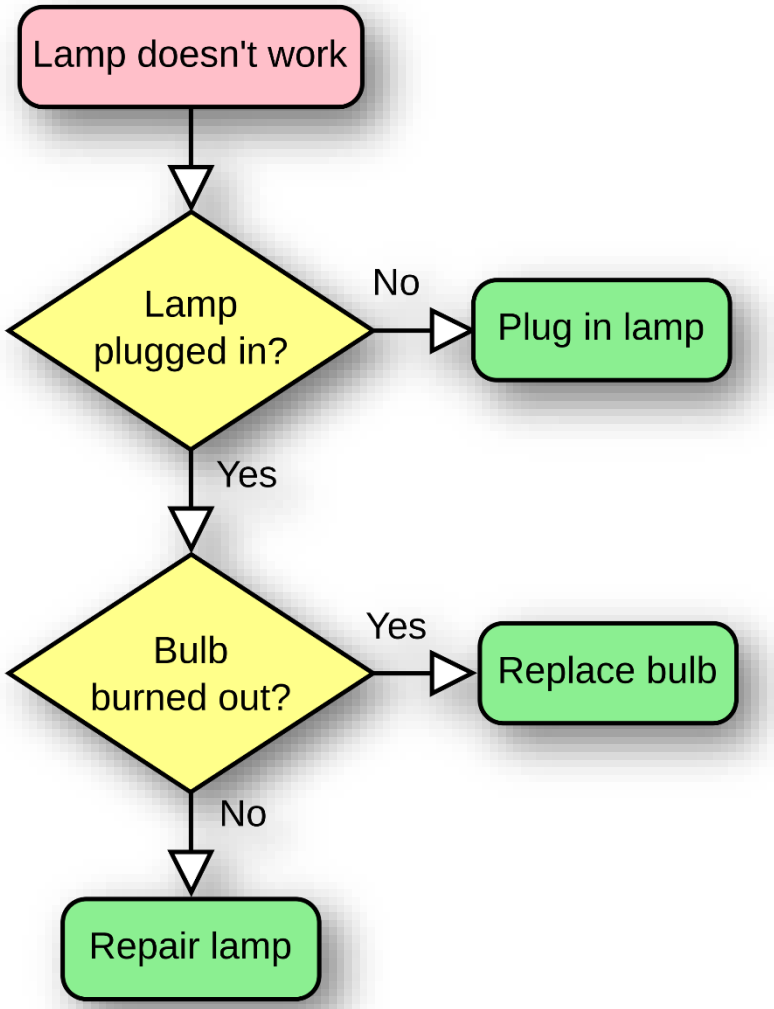
Standard Operating Procedures (SOPs)

In this SOP example, we would expect work instructions and job aids to supplement the "Fixing a Lamp" SOP for the following processes…

1) Plugging in the lamp
2) Replacing the bulb
3) Repairing the lamp



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Standard Operating Procedures (SOPs)

SOP Examples…

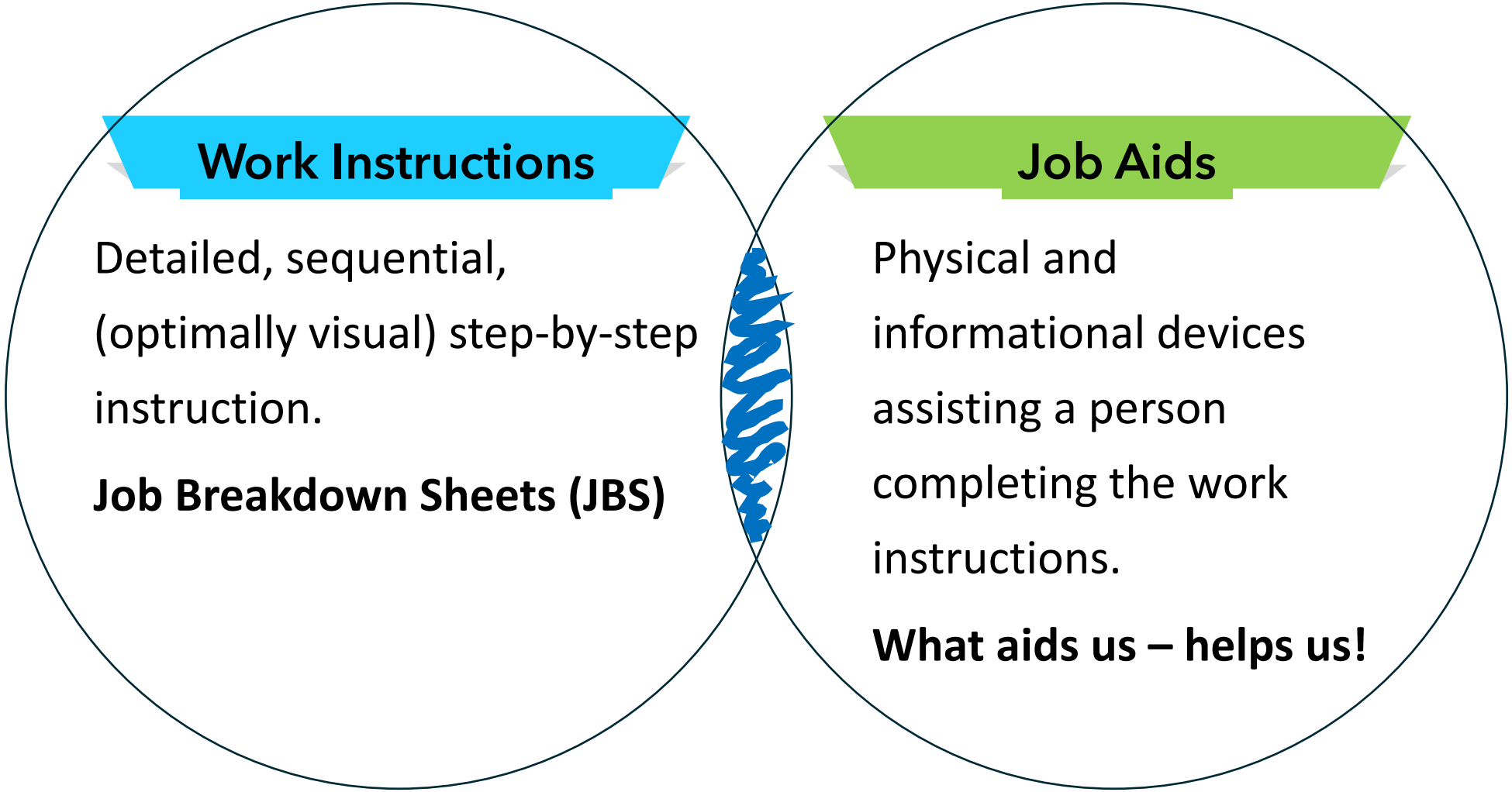
- Safety & Quality Procedures
- Lockout / Tagout procedure
- Control of Nonconforming Products Procedures
- Machine Operating & Maintenance Procedures
- Work Procedures
- Corrective and Preventive Action Procedures
- Design and Development procedures

Lockout / Tagout Procedure

Step 1: Notify affected employees.
Step 2: Identify procedure and hazards.
Step 3: Shut down the equipment.
Step 4: Isolate equipment from energy source.
Step 5: Apply lockout tagout devices.
Step 6: Check stored energy.
Step 7: Verify isolation, tryout and test.
Step 8: Service or repair equipment.
Step 9: Ensure equipment is fully reassembled Step 10: Verify no tools left behind.
Step 11: Survey the work area for people.
Step 12: Verify all controls are in neutral.
Step 13: Remove tags and lockout devices.
Step 14: Bring equipment back on-line.
Step 15: Notify affected employees.

Work Standards

Work Instructions and Job Aids



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Work Instructions and Job Aids

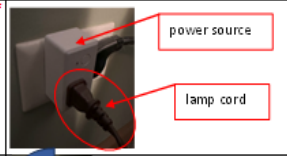
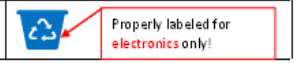
Features…

- WI header information
- Identifies required parts needed
- Identifies tools, other materials, equipment, tooling, and fixtures needed
- Job aids (annotated diagrams or video) show how the work is done.

Work Instruction (WI) - Job Breakdown Sheet (JBS)

Used by a trainee for learning & practicing the standard.

Work Instruction (WI) - Job Breakdown Sheet (JBS)

WI Number:	RL-100WI				Process Cycle Time (seconds)	Owner	Version / Last Revised
Name / Desc:	Repair Lamp - Replace Bulb				32	Tom Smith	2.0 / May 30, 2025
Item	**Parts**	**Major Step (What)**	**Cycle Time (sec)**	**Key Points (How)**	**Tools / Materials**	**Reasons (Why)**	**Job Aids (pictures, video, etc.)**
1	SAFETY	Unplug lamp	2	1 Unplug the lamp from power source		To eliminate the possibility of getting electrocuted	
2		Remove lamp shade	5	1 Locate the lamp shade finial (nut) and turn it counterclockwise (to the left) and remove it from the shade mount threaded stud		To remove the lamp shade, the finial must first be removed as it is securing the shade to the lamp	
				2 Lift shade from lamp and set in clean and safe location		To remove the shade from the lamp so the bulb can more easily be replaced. Placing the shade in a clean and safe location will prevent it getting dirty or damaged	
3	SAFETY	Remove old bulb	5	1 put on protective gloves	heat / cut resistant gloves	To protect the hands from burns / cuts	
				2 gently grasp bulb		Exerting too much pressure on the bulb could cause it to break	
				3 gently rotate bulb counterclockwise (to the left)		To unscrew the bulb from the lamp socket	
				4 remove bulb from socket		To prepare lamp for new bulb	
4		Discard old bulb	2	1 place old bulb aside to later be placed in the proper electronics recycling bin		To properly discard old bulb	

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Work Instructions and Job Aids

Features *(continued)*…

Based on best practices from Training Within Industry…

- Sequential list of steps (What) – 10% of text
- Key points for each step to assist (How) – 30% of text
- Reasons for key points (Why) – 60% of text

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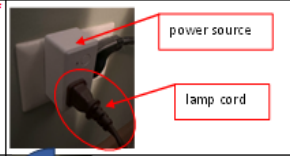
1	SAFETY	Unplug lamp	2	1 Unplug the lamp from power source		To eliminate the possibility of getting electrocuted	
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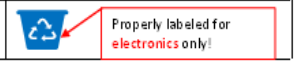
4		Discard old bulb	2	1 place old bulb aside to later be placed in the proper electronics recycling bin		To properly discard old bulb	

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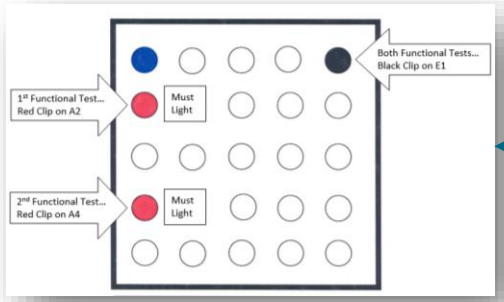
Work Standards

Job Aids

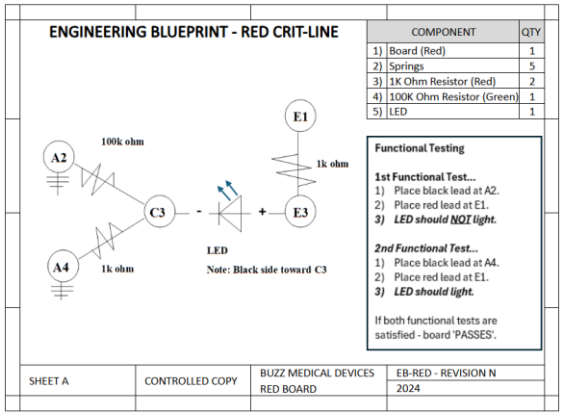
What aids us – helps us!

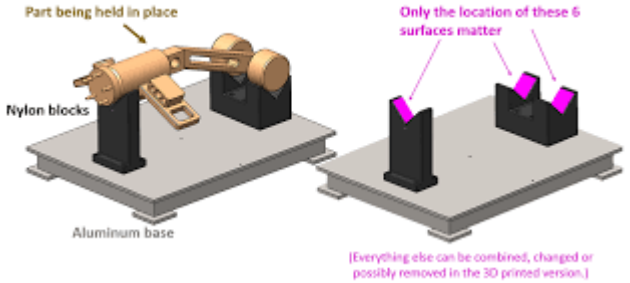
Physical and informational devices assisting the person completing the work instructions.



Examples…

- Laminated cards or templates detailing certain steps or quality check points
- Engineering Drawings
- Tablets or displays detailing / highlighting the work instruction steps / key points / reasons
- Augmented / Virtual Reality devices
- Pick by light devices indicating what tool, what part, what fixture, etc.
- Fixtures and other assistive devices





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☑ Work Standards

Standard Work

Standardized Work

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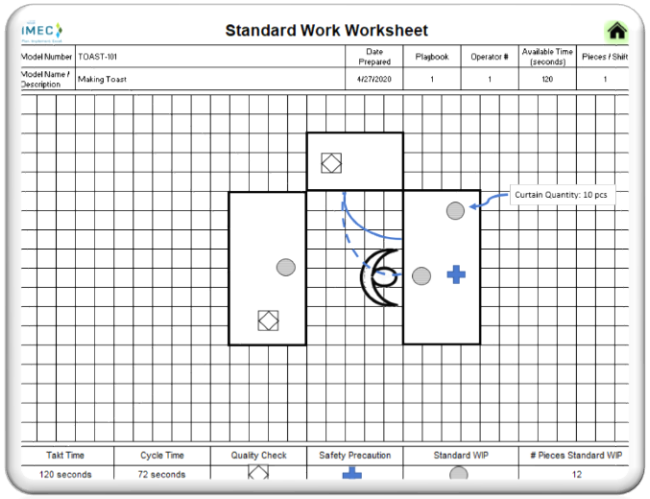

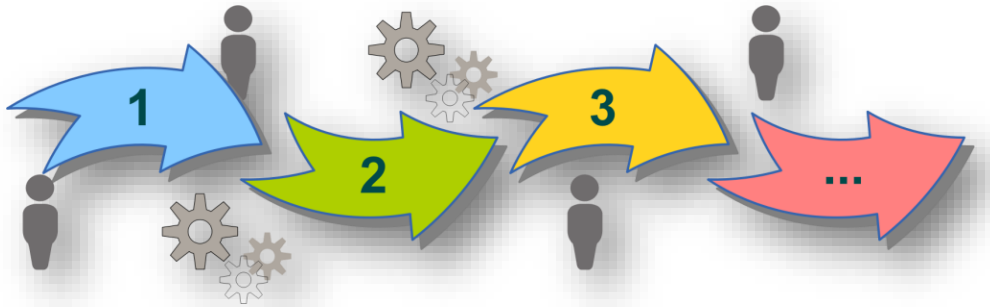

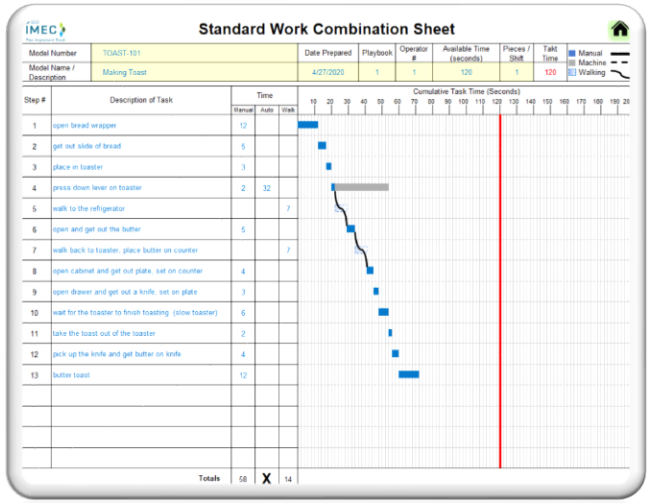

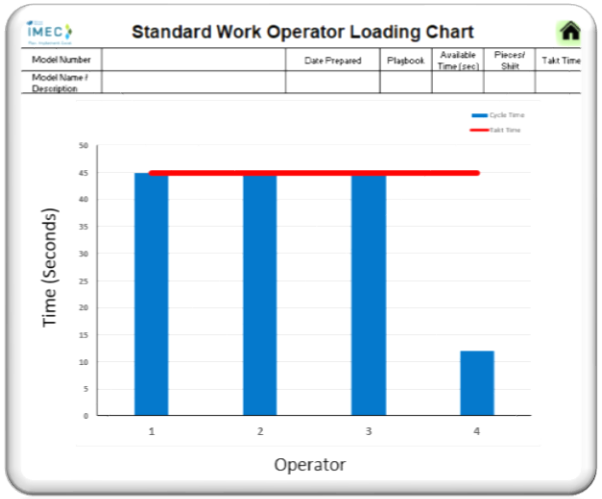

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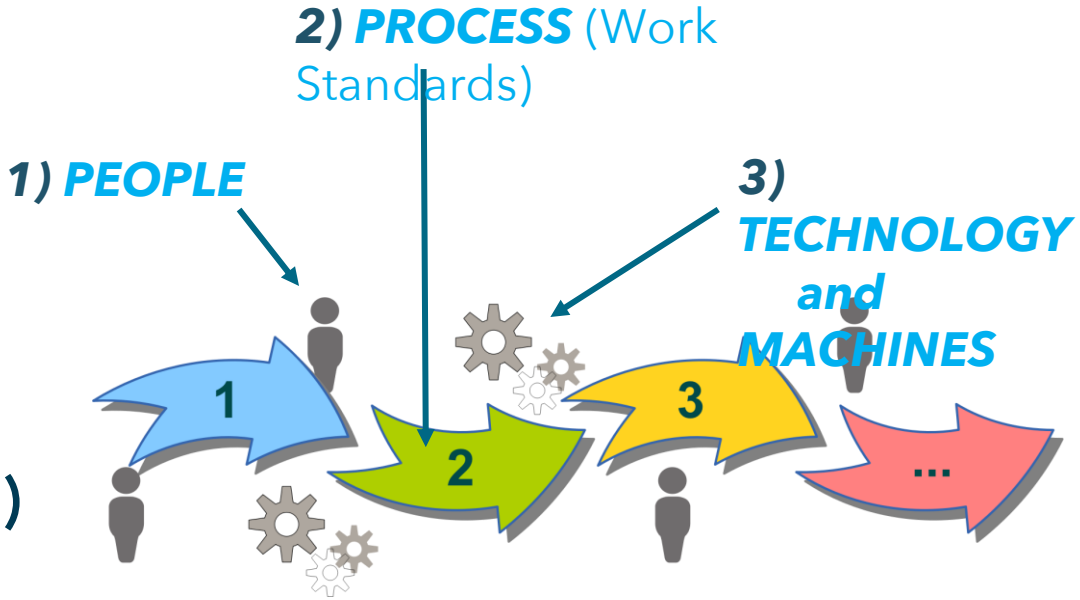
Standard Work

Standard Work is the best combination of…

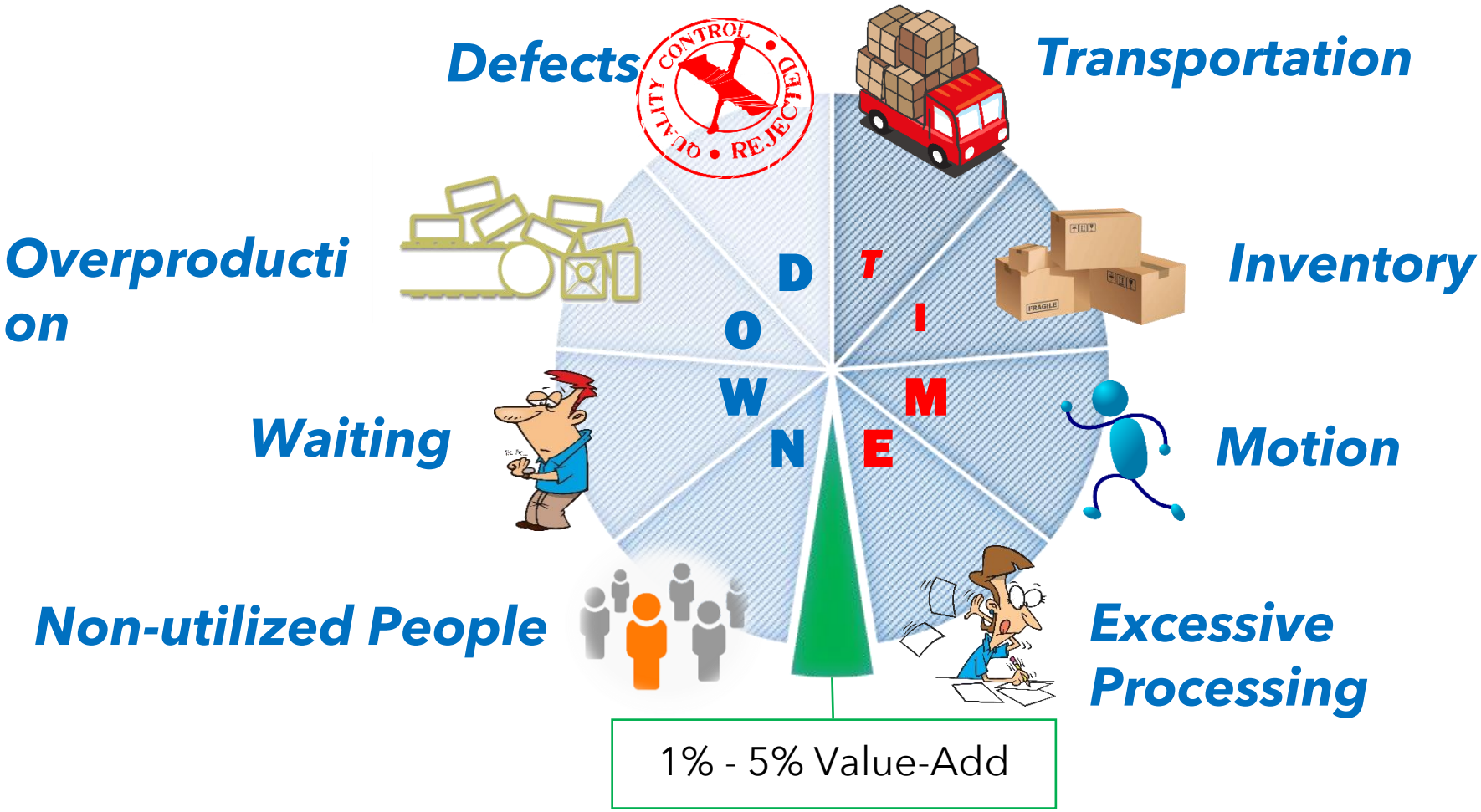
1) PEOPLE
2) PROCESS
3) TECHNOLOGY and MACHINES



to maximize performance (eliminating waste) by establishing good routines / habits (Kata) and patterns for work to be performed.

Standard Work

8 Lean Wastes…



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Standard Work

Elements of Standard Work…

1) Takt time
2) Work Sequence
3) Standard Work in Process (SWIP)
4) Cycle Time

Standard Work

Elements of Standard Work…

1) Takt time

Takt time is the frequency we must produce a quality part or service to meet the customer's expectations and demand.

$$\text{Takt Time} = \text{Demand Rate}$$

$$\text{Takt Time} = \frac{\text{Work Time Available}}{\text{Number of Units Sold}}$$

$$\text{Takt Time} = \frac{1{,}200 \text{ Seconds}}{117 \text{ Boards}} = 10.3 \text{ Sec/Board}$$

GOAL: Produce to Demand

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Elements of Standard Work…

2) Work Sequence

The specific order in which the operator performs the manual steps of the process.

Key Points…

- May be different than the process sequence.
- Focus on the work sequence helps us spot waste and stabilize the process.
- Requires cross-trained and multi-skilled operator.

Standard Work

Elements of Standard Work…

3) Standard Work in Process (SWIP)

The minimum amount of work in process that will allow the operators to flow the product efficiently without waiting.

Key Points…

- Standard is the key.
- Allows work to continue without operators waiting for work.
- May include Curtain Quantities of parts.

Standard Work

Elements of Standard Work…

4) Cycle Time

The time it takes an operator or the time it takes a machine to complete once cycle or complete their process.

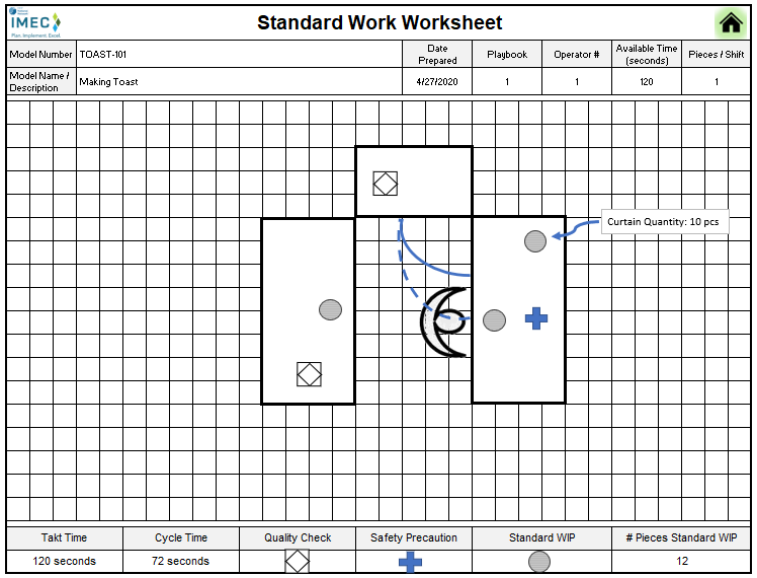
Types of Cycle Time…

- Operator Cycle Time – including walking, load / unload, inspections, etc.
- Machine Cycle Time – measured from the time the start button is pressed, and the machine returns to its start position after completing one cycle.

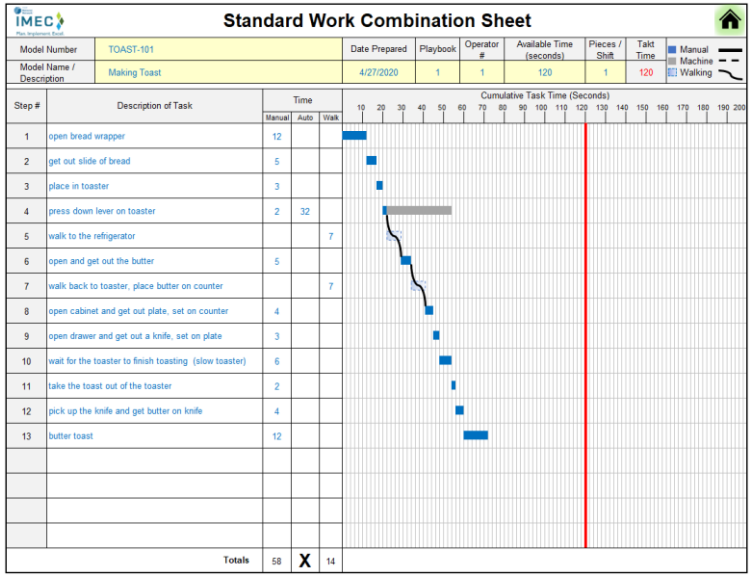
Standard Work

3 Key Tools of Standard Work…

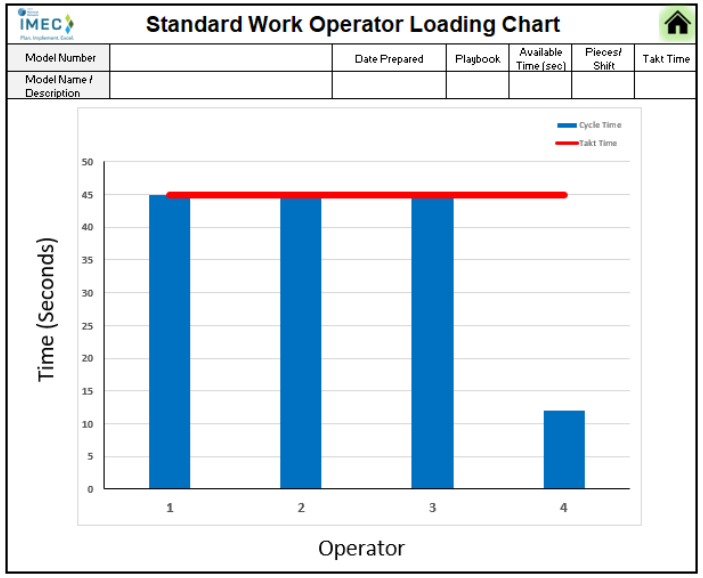
Standard Work Worksheet



Standard Work Combination



Operator Loading Chart



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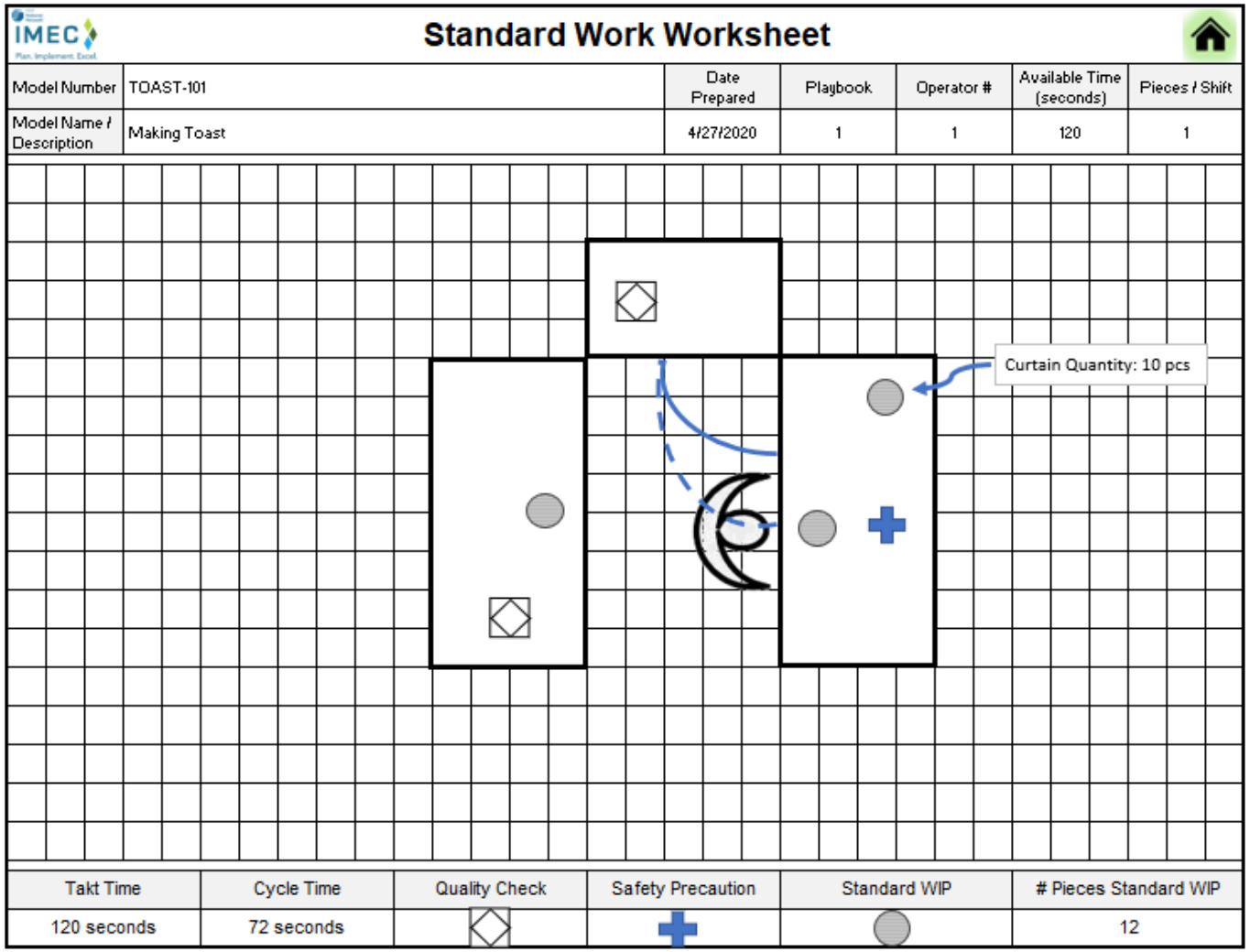

Key Features…

- Shows how the work area is to be set up
- Shows an operator's movements
- Standard Work In Process (SWIP) [*both qty & location]*
- Quality check points & safety precautions
- Takt Time
- Which playbook
- Which operator

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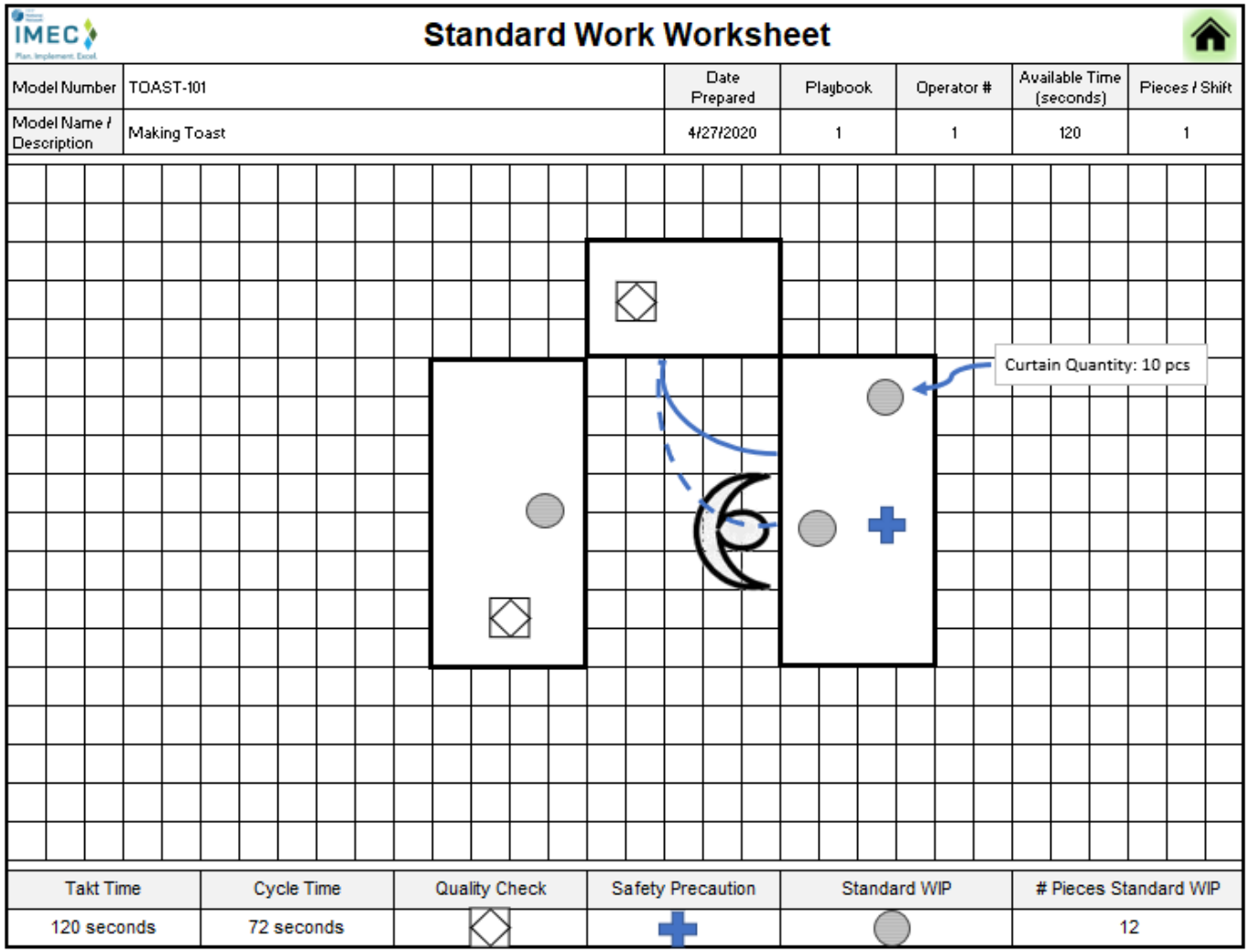

A visual layout of the work area.

Why…

1) To set up a work area and operate to standard work.
2) To quickly ascertain if standard work is being followed.

Note: A Standard Work Worksheet is required for each operator.

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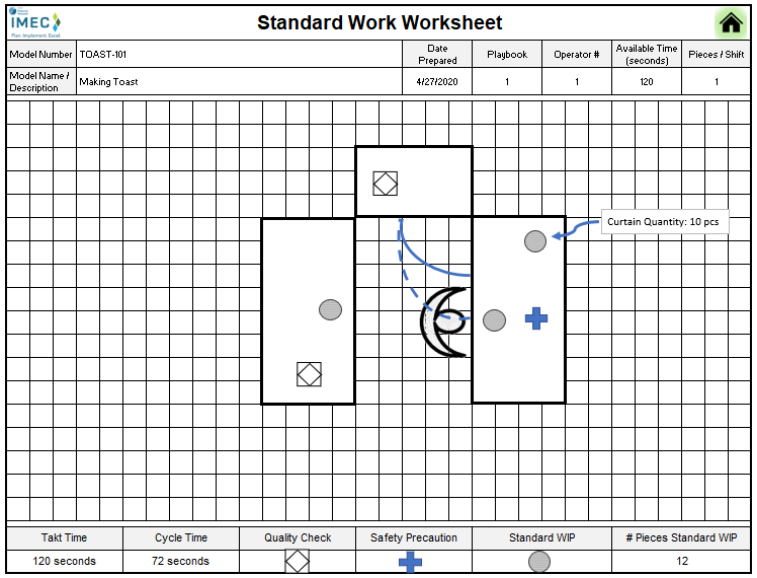
Standard Work

3 Key Tools of Standard Work…

Standard Work Worksheet



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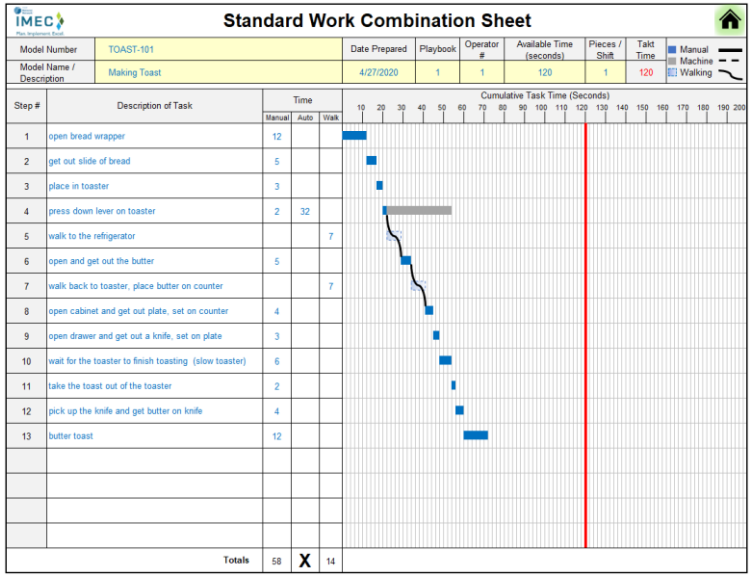

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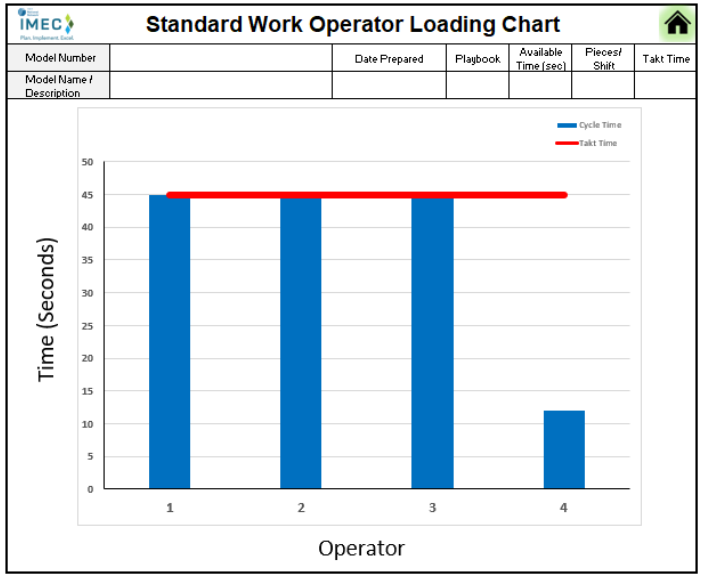

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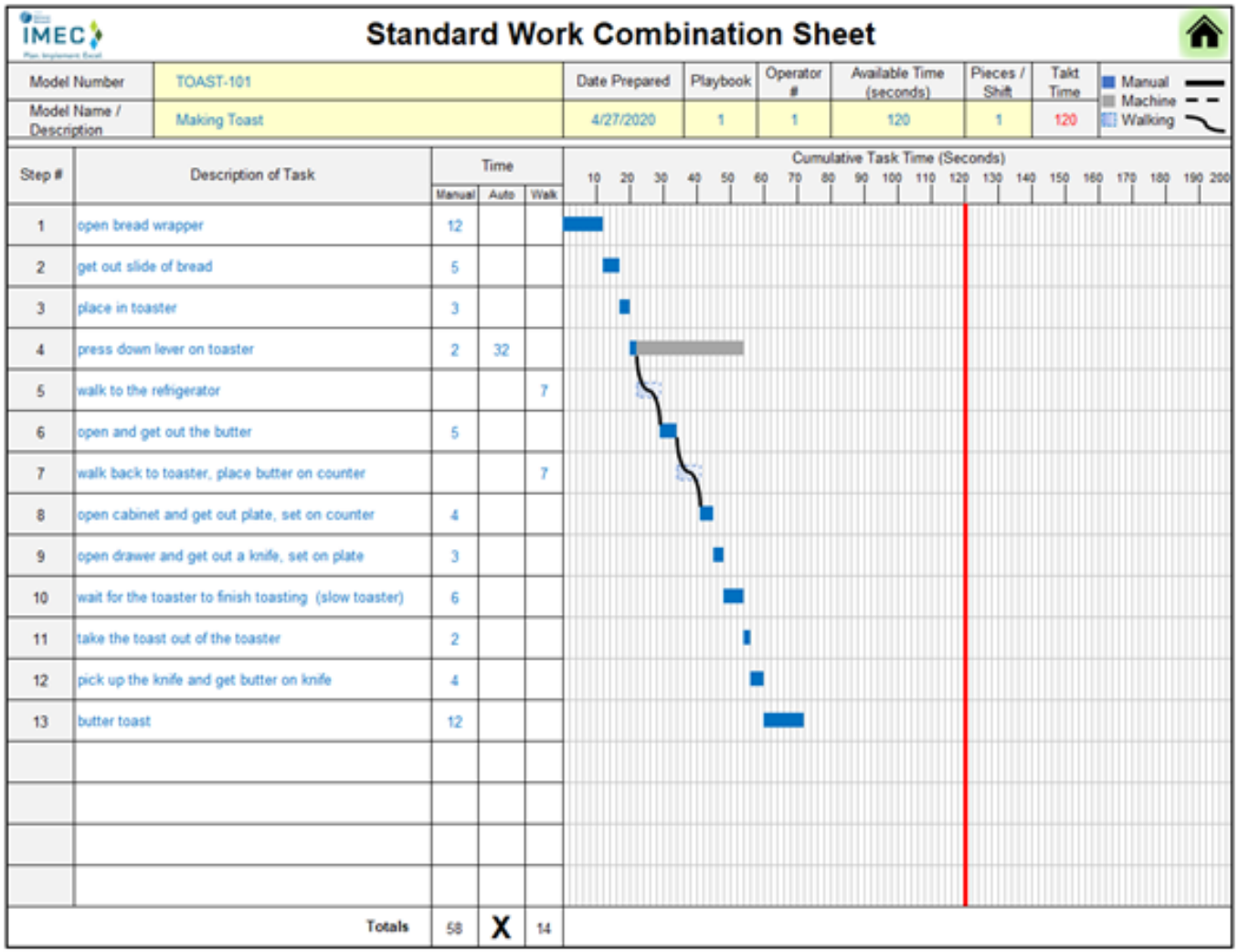

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Standard Work Combination Sheet

Model Number	TOAST-101	Date Prepared	Playbook	Operator #	Available Time (seconds)	Pieces / Shift	Takt Time
Model Name / Description	Making Toast	4/27/2020	1	1	120	1	120

Manual
Machine
Walking

Step #	Description of Task	Time		
		Manual	Auto	Walk
1	open bread wrapper	12		
2	get out slide of bread	5		
3	place in toaster	3		
4	press down lever on toaster	2	32	
5	walk to the refrigerator			7
6	open and get out the butter	5		
7	walk back to toaster, place butter on counter			7
8	open cabinet and get out plate, set on counter	4		
9	open drawer and get out a knife, set on plate	3		
10	wait for the toaster to finish toasting (slow toaster)	6		
11	take the toast out of the toaster	2		
12	pick up the knife and get butter on knife	4		
13	butter toast	12		
	Totals	58	X	14

Cumulative Task Time (Seconds)

10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200

Key Features…

- List / Description of the tasks to be performed
- Cycle times (manual, automatic, walking)
- Gannt chart showing cumulative cycle time
- Takt Time
- Which operator
- Which playbook

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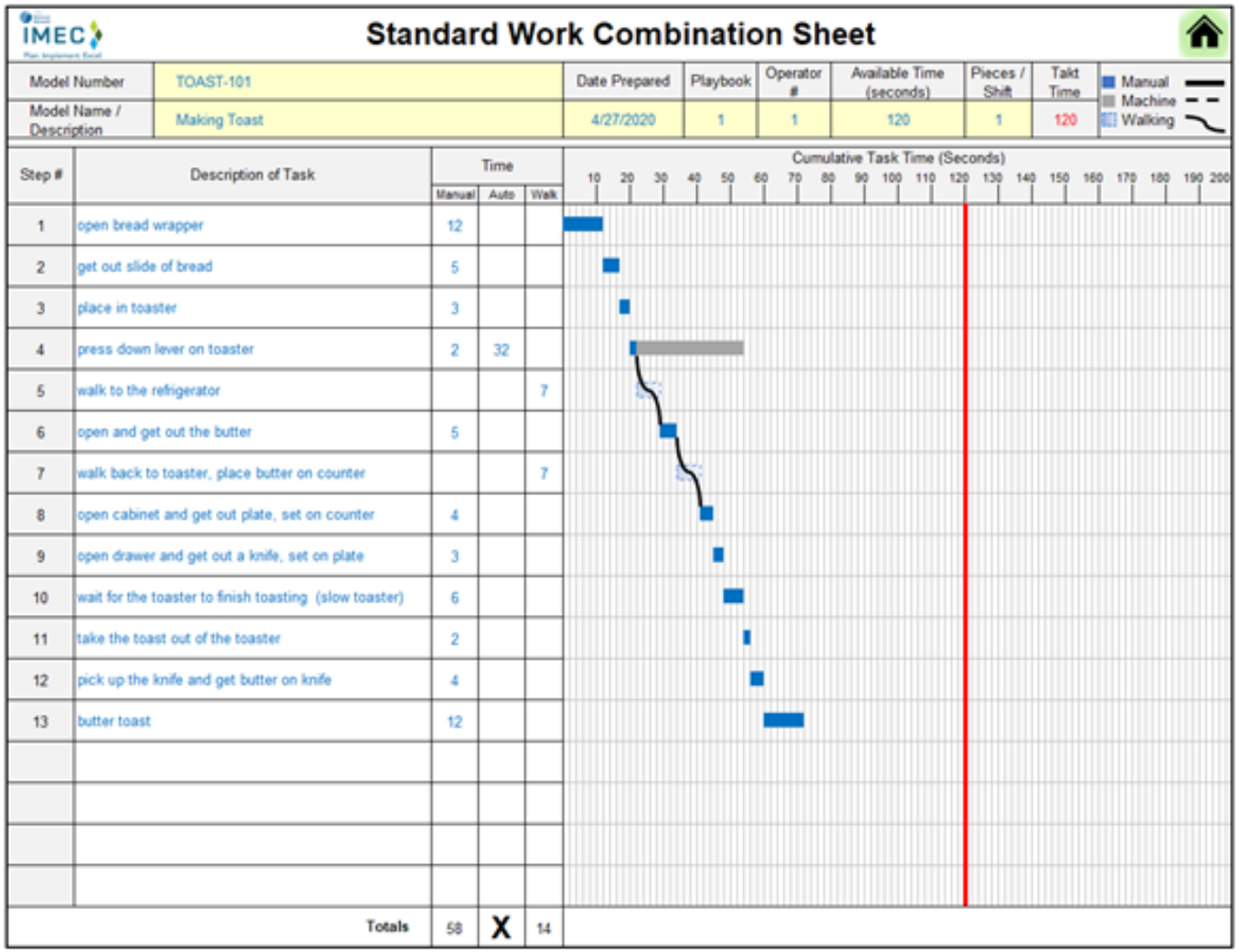

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Cumulative Task Time (Seconds)
10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200

Shows…

- What process steps or tasks are being performed
- By what operator
- Operators are loaded to Takt Time.

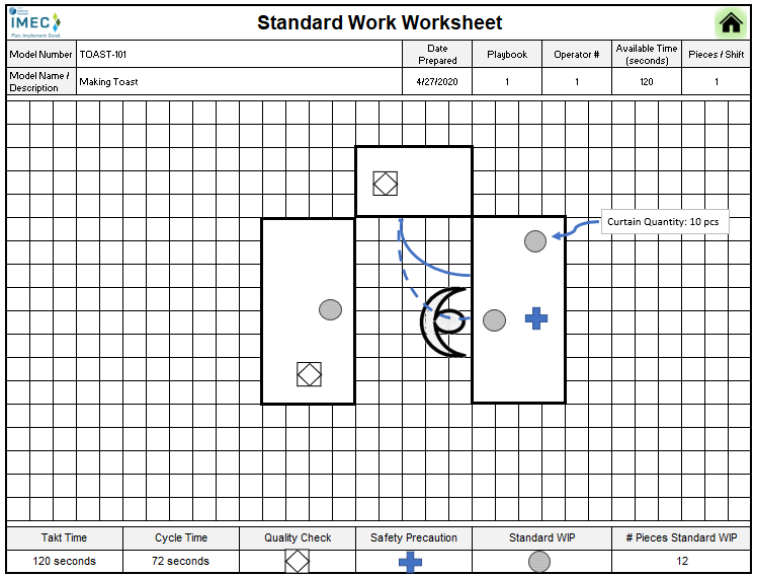
  Note: Cumulative process cycle times loaded up to, or slightly less than Takt Time, identify the work for an operator.

Note: A Standard Work Combination Sheet is required for each operator.

Standard Work

3 Key Tools of Standard Work…

Standard Work Worksheet



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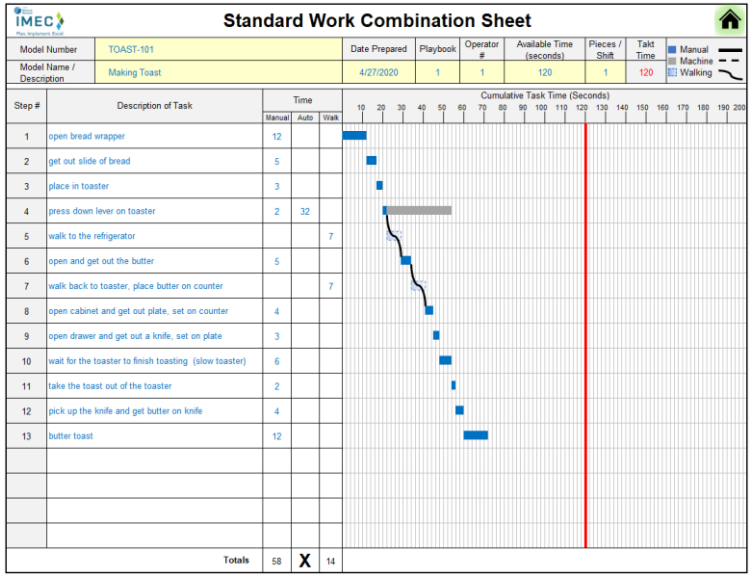
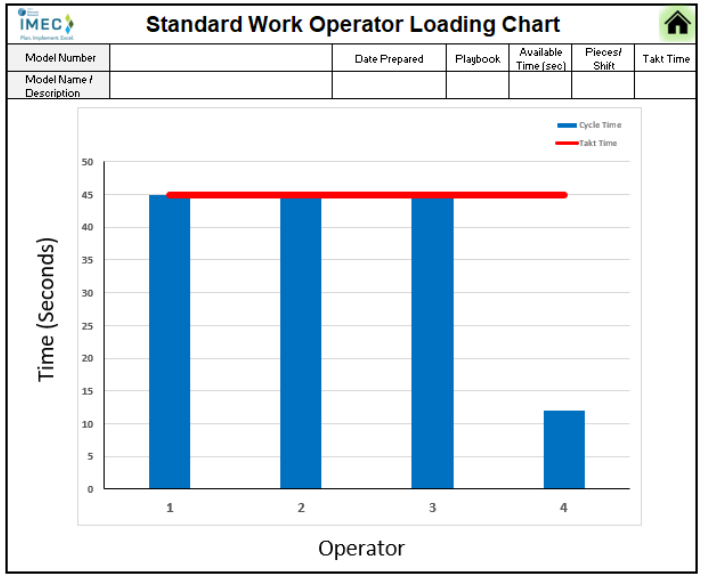


Operator Loading Chart



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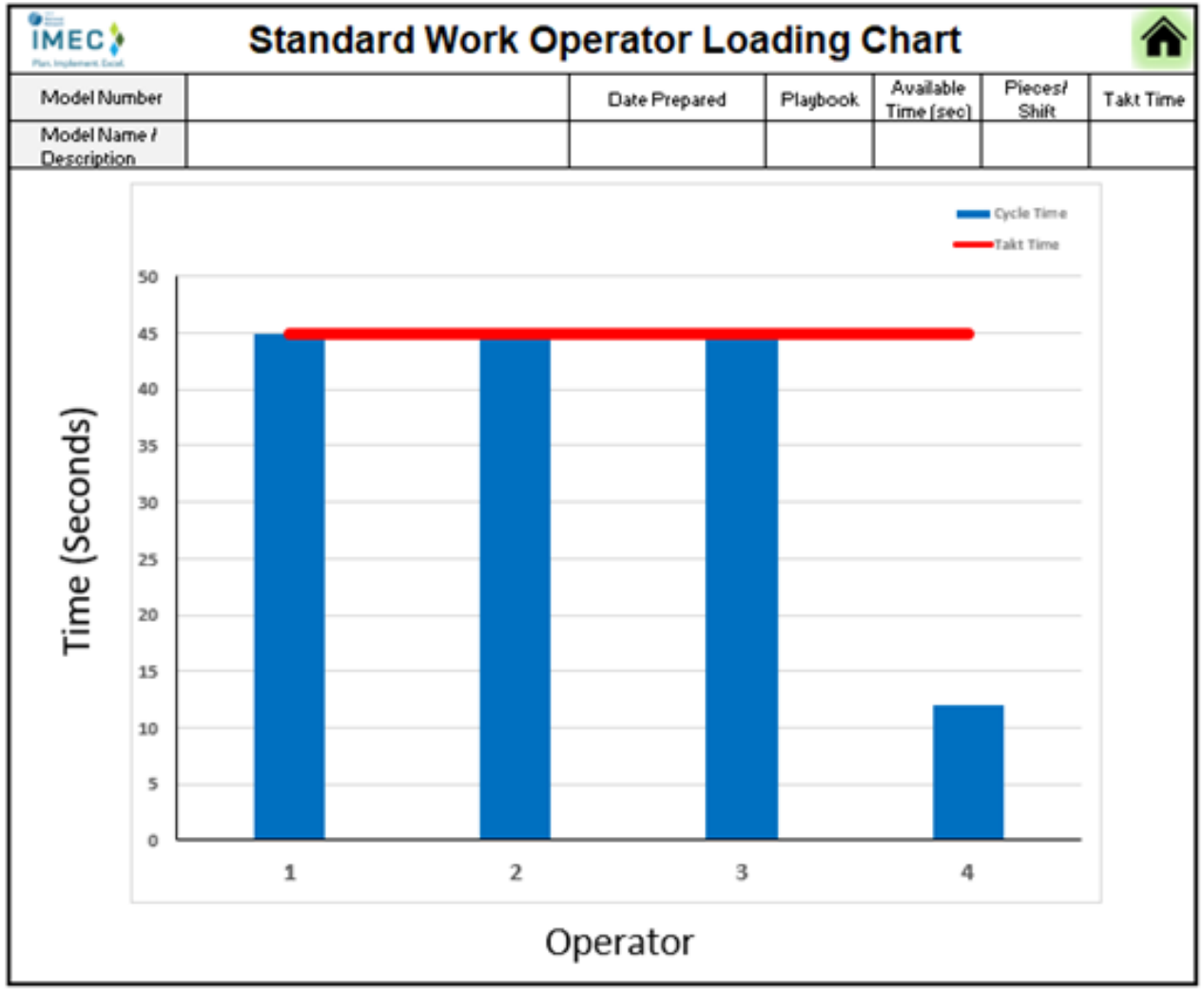
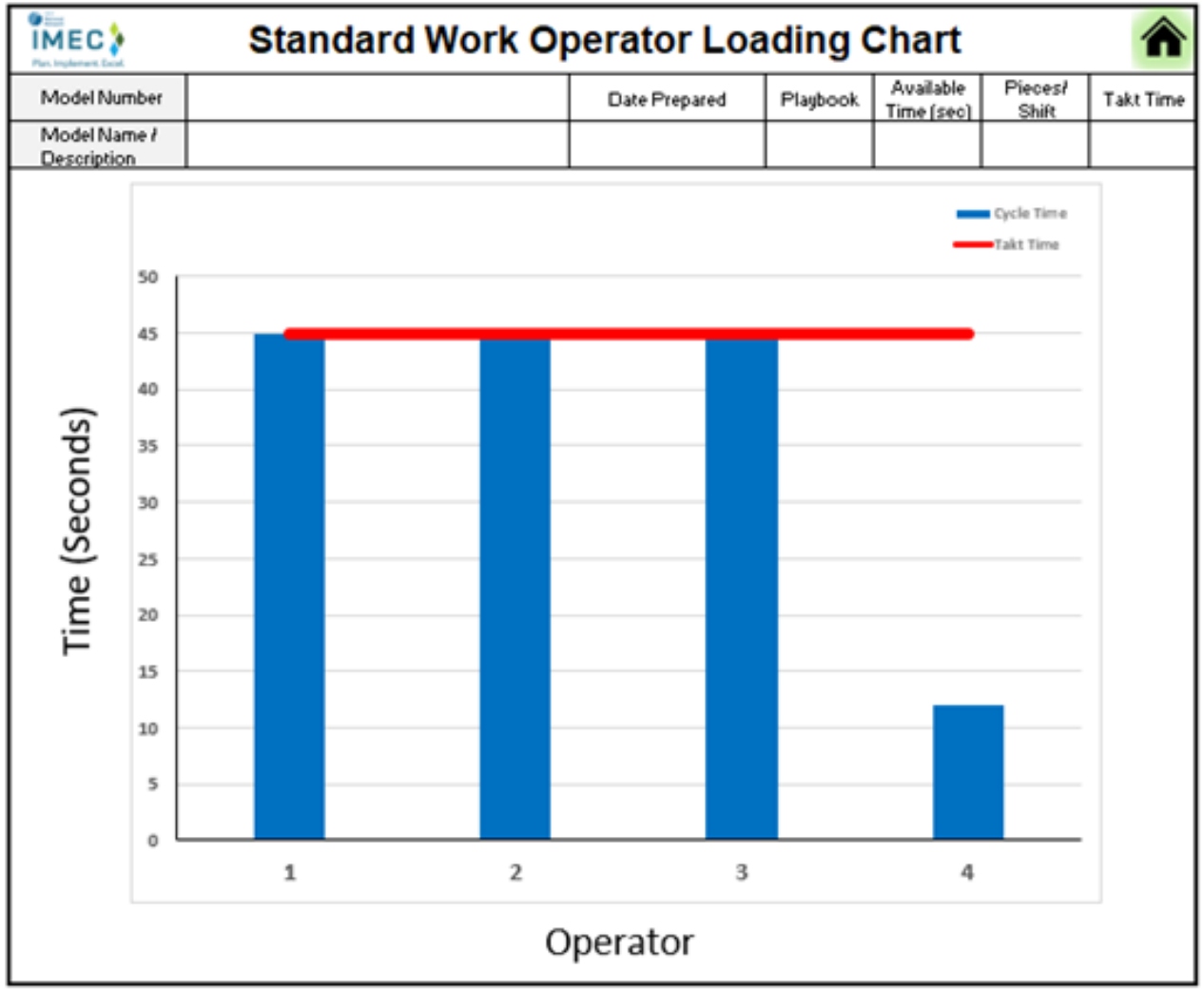


Key Features…

- Shows how many operators are needed
- Shows how well operators are loaded to Takt Time and that the line is balanced
- Takt Time
- Which playbook

Note: The Least Loaded Operator Concept is shown here.

Standard Work

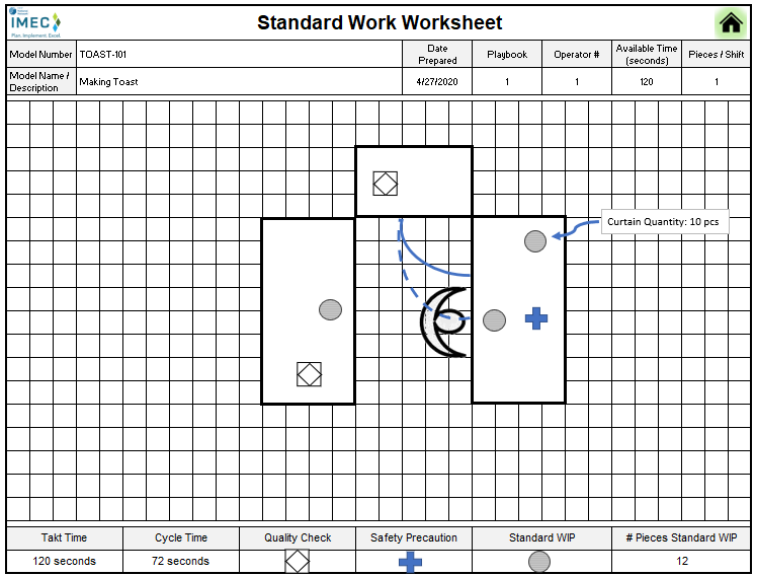


- Posted at the cell or work center to identify how many operators should be present and that their individual workload is balanced and to Takt Time.
- One (1) per cell or work center

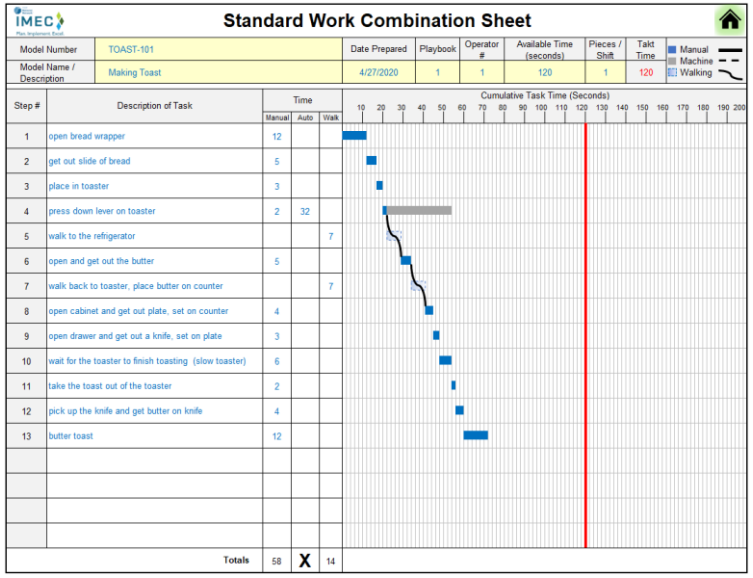
Standard Work

3 Key Tools of Standard Work…

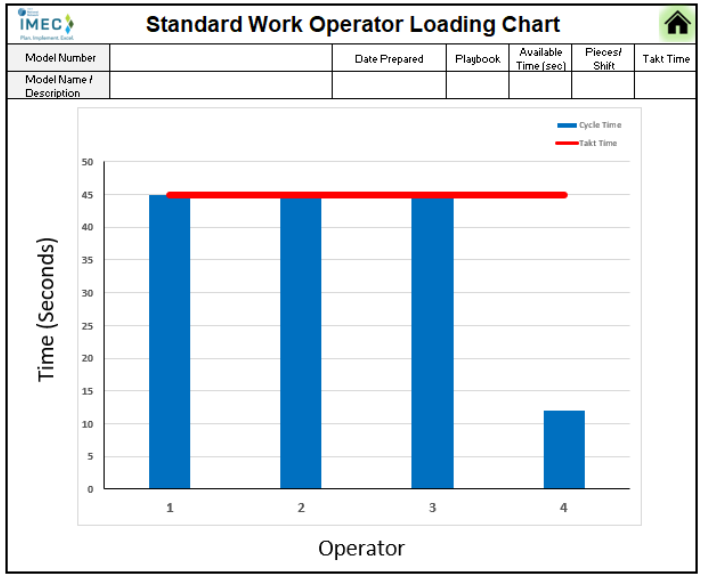
Standard Work Worksheet



Standard Work Combination



Operator Loading Chart



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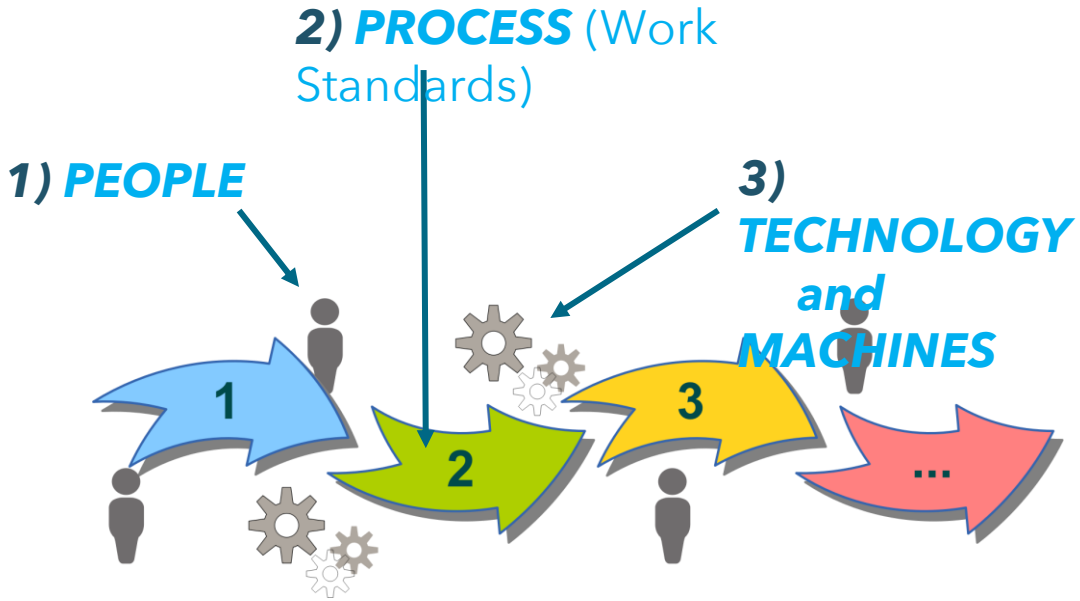
Standard Work

Standard Work – Why?

- Establishes a routine / habit / pattern or standard for work to be performed so that we get the same result each time.
- Makes managing and scheduling resources easier.
- Establishes a relationship between the operator, the machine, and the material flow.



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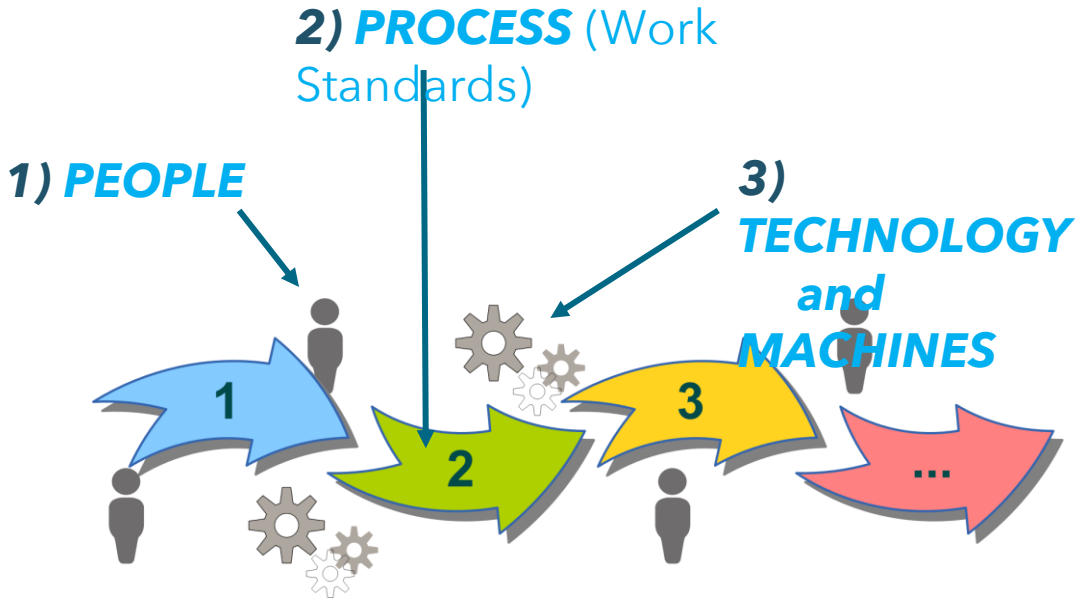
Standard Work

Standard Work – Why?

- Allows the team to better solve problems because the problems become more visual when the standard is not being / cannot be followed.
- Helps prevent backsliding – sustaining the improvements made.



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- ☑ Work
- ☑ Standards

Standardized Work

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Standardized Work

Standardized Work is the outcome of having…

1) Work Standards
2) Standard Work
3) Job Instruction / Training
4) Sustaining Results

- regularly and widely used, available, or supplied
- well-established by usage and very familiar
- substantially uniform

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Standardized Work

Standardized Work is the outcome of having…

1) Work Standards = Standardize the one best way to work
2) Standard Work = People + Process + Tech / Tools
3) Job Instruction / Training = Training to the standard
4) Sustaining Results = The standard is now routine

Standardized Work

Standardized Work is the outcome of having…

1) Work Standards
2) Lean Standard Work
3) Job Instruction / Training
4) Sustaining Results

- regularly and widely used, available, or supplied
- well-established by usage and very familiar
- substantially uniform

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Job Instruction / Training

Training Within Industry (TWI)

Job Relations (JR)

Job Relations (JR) teaches the essentials of leadership and positive employee interactions by emphasizing "Respect for People."

- Training and coaching of supervisors how to best handle problems and how to prevent them from occurring.
- Aids in developing a logical, common-sense approach to handling issues with a people-centric view.

Job Instruction (JI)

Job Instruction (JI) teaches the team how to establish stability in processes, ensuring consistency and reliability.

- Teaching the subject matter experts (the true value adders - those who do the work) how to break down a given job and develop the "one best way" to do it.
- Training others to perform that "one best way" consistently and repeatedly.
- Process stability or sustainability is generated across the team, at all times, and lays a solid foundation for continuous improvement.

Job Methods (JM)

Job Methods (JM) trains supervisors, team leaders and workers to discover and develop new ways for improving how work gets done.

Results for successful JM practice include…

- improved safety
- higher quality
- improved on-time delivery to customers
- higher productivity
- streamlined processes
- waste and error reduction.

Reference: TWI Institute https://www.twi-institute.com/twi-training/

Job Instruction / Training

Training Within Industry (TWI)

Job Instruction (JI)

Job Instruction (JI) teaches the team how to establish stability in processes, ensuring consistency and reliability.

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Job Instruction / Training

Training Within Industry (TWI)

Job Instruction (JI)

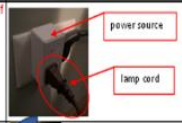
- Teaching the subject matter experts (the true value adders - those who do the work) how to break down a given job and develop the “one best way” to do it.
- Training others to perform that “one best way” consistently and repeatedly.
- Process stability or sustainability is generated across the team, at all times, and lays a solid foundation for continuous improvement.

Reference: TWI Institute https://www.twi-institute.com/twi-training/

Job Instruction / Training

Work Instruction (WI) - Job Breakdown Sheet (JBS)

WI Number:	RL-100WI			Process Cycle Time (seconds)	Owner	Version / Last Revised
Name / Desc:	Repair Lamp - Replace Bulb			32	Tom Smith	2.0 / May 30, 2025

Item	Parts	Major Step (What)	Cycle Time (sec)		Key Points (How)	Tools / Materials	Reasons (Why)	Job Aids (pictures, video, etc.)
1	SAFETY	Unplug lamp	2	1	Unplug the lamp from power source		To eliminate the possibility of getting electrocuted	
2		Remove lamp shade	5	1	Locate the lamp shade finial (nut) and turn it counterclockwise (to the left) and remove it from the shade mount threaded stud		To remove the lamp shade, the finial must first be removed as it is securing the shade to the lamp	
				2	Lift shade from lamp and set in clean and safe location		To remove the shade from the lamp so the bulb can more easily be replaced. Placing the shade in a clean and safe location will prevent it getting dirty or damaged	
3	SAFETY	Remove old bulb	5	1	put on protective gloves	heat / cut resistant gloves	To protect the hands from burns / cuts	
				2	gently grasp bulb		Exerting too much pressure on the bulb could cause it to break	
				3	gently rotate bulb counterclockwise (to the left)		To unscrew the bulb from the lamp socket	
				4	remove bulb from socket		To prepare lamp for new bulb	
4		Discard old bulb	2	1	place old bulb aside to later be placed in the proper electronics recycling bin		To properly discard old bulb	

Job Instruction Breakdown (JIB)

JIB Number:	RL-100JIB	Version / Last Revised / Owner / Testified by
Name / Desc:	Repair Lamp - Replace Bulb	2.0 / May 30, 2025 / Tom Smith / Alex Jones
Preparing the Worker...	*Key Points to Emphasize : Identify anything that might.. 1) be a hazard to people or machine; 2) impact quality; and 3) make the work easier to do (tips to working smarter, not harder)*	*Highlighting "Reasons Why" : Identify any "Reasons Why" which might require special emphasis based on prior instructional and learner experiences... 1) reasons why the order of operations is the way it is; 2) reasons why following safety instructions is important and revisit reporting safety incidences; 3) reasons why quality at the source is vital to product integrity and the success of downstream processes / customers.*
	1) Verify trainee has a copy of RL-100WI "Repair Lamp - Replace Bulb" 2) Review proper method for unplugging a plug from a receptacle (where to grab) 3) Ensure protective gloves are in good condition and what to look for 4) Review what to look for in possible cross-threading occurrences 5) Placing finial in a container prevents it from rolling away	1) Safety is always #1: Verify lock-out tag-out procedure for devices with an electrical plug 2) Assuming a new light bulb will light without testing is taking a chance it won't perform when needed 3) Removing protective work gloves before handling the lamp shade keeps the lamp shade cleaner and provides better, more consistent, lighting. Disposable nitrile gloves may be worn if hands are not clean to keep the lamp shade clean
Parts, Tools & Materials Needed	Parts	Tools / Materials
	40W-LED Light Bulb	heat / cut resistant gloves

Item	Major Step (What) *[10% Text]*		Key Points (How) *[30% Text]*	Reasons (Why) *[60% Text]*
1	Unplug lamp	1	Ensure hands are dry and clean Grab the plug and not the cord	To eliminate the possibility of getting electrocuted To minimize strain on the wires inside the cord
2	Remove lamp shade	1	Turn finial counterclockwise (to the left) to remove it	Righty tighty, lefty loosy - Counterclockwise is the opposite direction the hands on a clock move
		2	Set shade in clean and safe location	Placing the shade in a clean and safe location will prevent it getting dirty or damaged
3	Remove old bulb	1	Put on protective gloves	To protect the hands from burns / cuts
		2	Gently grasp bulb	Exerting too much pressure on the bulb could cause it to break
		3	Turn bulb counterclockwise (to the left)	Righty tighty, lefty loosy - Counterclockwise is the opposite direction the hands on a clock move
		4	Remove bulb from socket	To prepare lamp for new bulb
4	Discard old bulb	1	Place old bulb aside for proper electronics recycling	Properly discarding old bulbs as some bulbs can be environmentally hazardous or can cause personal injury if broken
5	Insert new bulb	1	Remove new bulb from packaging and discard packaging in recycling	Recycle packaging in the moment to keep the workplace neat, clean, clutter free and safe - 3S of 5S Workplace Organziation
		2	Screw new bulb in socket rotating bulb clockwise (to the right) until bulb is secure in socket, being careful not to overtighten bulb. Discuss cross-threading risk.	Righty tighty, lefty loosy - Clockwise is the same directions the hands on a clock move Cross-threading or Overtightening the bulb may cause it to break or make removing difficult.
6	Test lamp	1	Plug in lamp	So the lamp is energized to power or light the light bulb
		2	Turn the switch clockwise (to the right) one (1) click and verify the light bulb lights	Turning the switch counterclockwise will not turn on the light and unscrew the knob from the switch. We need to verify the new bulb lights before considering the process complete. Righty tighty, lefty loosy - Clockwise is the same directions the hands on a clock move
		3	Turn the switch clockwise (to the right) one (1) click and verify the light bulb turns off	To conserve energy if the lamp won't be immediately used Righty tighty, lefty loosy - Clockwise is the same directions the hands on a clock move

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Job Instruction / Training

Job Instruction Breakdowns (JIBs)

A guide used by a trainer for training / teaching.

Features…

- JIB Header information
- Trainer's notes for preparing trainee
- Identifies parts, tools and materials needed

Job Instruction Breakdown (JIB)

JIB Number:	RL-100JIB	Version / Last Revised / Owner / Testified by
Name / Desc:	Repair Lamp - Replace Bulb	2.0 / May 30, 2025 / Tom Smith / Alex Jones
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Job Instruction / Training

Job Instruction Breakdowns (JIBs)

A guide used by a trainer for training / teaching.

Features…

- Sequential list of steps (What) – 10% of text
- Key points for each step to assist (How) – 30% of text
- Reasons for key points (Why) – 60% of text

Job Instruction Breakdown (JIB)

JIB Number:	RL-100JIB			Version / Last Revised / Owner / Testified by
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Job Instruction / Training

A guide to instruction…

The teacher has not taught unless the student has learned and is demonstrating proficiently!

Preparing to Instruct

Have a Time Table...

- Skills you expect each person to have by what date

Break Down the Job...

- List the IMPORTANT STEPS first
- Pick out the KEY POINTS and REASONS
- SAFETY IS ALWAYS A KEY POINT
- Have a complete JOB BREAKDOWN SHEET

Have Everything Ready...

- The right equipment, materials, and supplies

Properly Arrange The Workplace...

- Just as the worker will be expected to keep it referencing 5S Workplace Organization standards

How to Instruct

Step 1 – Prepare The Person

- Put the person at ease
- Describe the job and find out what they already know
- Get the person interested in learning the job
- Place the person in the correct position

Step 2 – Present The Operation

- Tell, show, and illustrate one IMPORTANT STEP at a time
- Stress each KEY POINT & REASON
- Instruct clearly, completely, and patiently
- Do not give more information than the person can master at one time

Step 3 – Try Out Performance

- Have the person do the job - Correct errors
- Have the person explain each IMPORTANT STEP, KEY POINT & REASON as they do the job again
- Make sure the person understands
- Continue until YOU know THE PERSON knows; whereby, the trainee can successfully complete the Job Instruction Breakdown without intervention from the trainer

Step 4 – Follow Up

- Put the person on their own
- Designate to whom they go for help
- Check frequently - Encourage questions
- Taper off extra coaching and close follow up

If the Person Hasn't Learned,
the Instructor Hasn't Taught!

Standardized Work

Standardized Work is the outcome of having…

1) Work Standards
2) Lean Standard Work
3) Job Instruction / Training
4) Sustaining Results

- regularly and widely used, available, or supplied
- well-established by usage and very familiar
- substantially uniform

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Sustaining Results

What systems help us sustain our results and get better?

Kaizen

Kaizen is change for the better or continuous improvement.

Daily Management

Going to Gemba (the “real” place where the value is created / where the work is done) to see, to listen, and learn… ensuring we are working on the “right problems” and supporting the team in realizing our targets / goals.

Strategy Deployment

Aligning strategies and targets, throughout the organization, with the organizational vision.

Sustaining Results

What systems help us sustain our results and get better?

Kaizen

Kaizen is change for the better or continuous improvement.

"If we continue to do what we always did, we will continue to get what we always got!"

2 Types of Kaizen…

1)Daily Kaizen (small simple improvements, daily)

2)Kaizen Events (team-based problem solving)

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Sustaining Results

What systems help us sustain our results and get better?

Daily Management

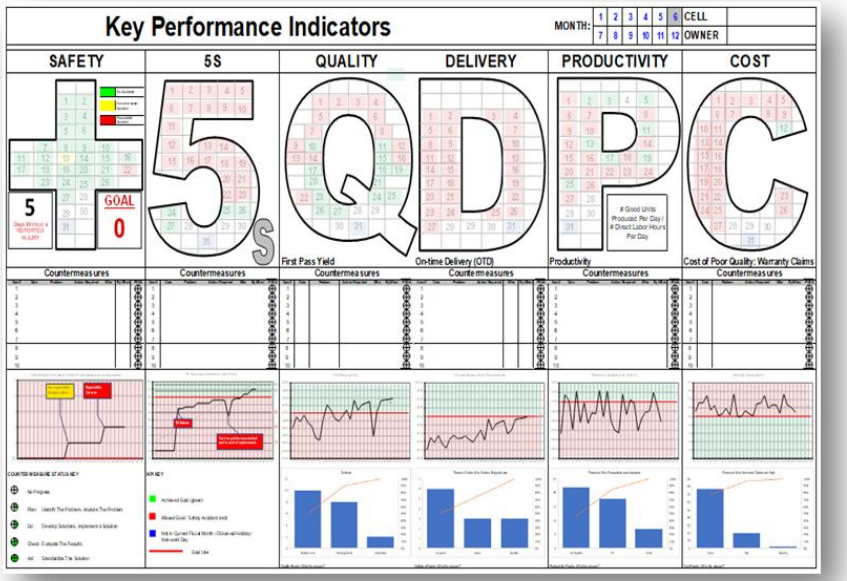
Going to Gemba (the “real” place where the value is created / where the work is done) to see, to listen, and learn… ensuring we are working on the “right problems” and supporting the team in realizing our targets / goals.

Three (3) elements of Daily Management…

1) Daily Accountability – Huddles

2) Visual (performance) Management

3) Gemba Walks



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Sustaining Results

What systems help us sustain our results and get better?

Strategy Deployment

Aligning strategies and targets, throughout the organization, with the organizational vision.

Strategy Deployment involves a critical thinking process which addresses: What (what breakthrough thinking), How far (determining annual breakthroughs), How (identifying key driver processes), How much and when (determining key performance measures and tracking), and Who (identifying key resources / owners and deploy).

THIS IS YOUR "TRUE NORTH!"

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Sustaining Results

What is at the core of sustaining results and getting better?

Problem Solving

A structured investigation that aims to identify…

1) What problem we're solving

2) Understanding the problem

3) Getting to the true root cause(s) of a problem

4) Developing, implementing, and testing actions / solutions (both physical and systematic) necessary to eliminate the root cause(s) and solve the problem - producing sustaining results.

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Work Standard

Standard Work

Standarized Work

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Thank You!

Share your feedback

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