DOWN TIME TIPS

Down Time is the largest source of lost production time for most manufacturers. Here are some practical tips for reducing Down Time that don't require a lot of outside support.

OVERVIEW

Why Down Time Tips?

Down Time is the largest source of lost productivity for most manufacturers, and it is often the place where the fastest gains can be made. Although **TPM**[†] (Total Productive Maintenance) is a clear best practice for sustainably reducing Down Time, not every company is ready to invest the time and resources to create an effective TPM program. If Down Time is having a significant impact on production, here are 10 practical tips for reducing it using your existing resources.

10 Practical Down Time Tips

Capture Reasons
It is essential to capture a reason and duration for each Down Time incident to enable the team to effectively prioritize and focus. Start simple, with no more than 25 reasons, one of which should be 'All Other Losses'. Make sure every reason is clear (when compared with other reasons) and describes symptoms (as opposed to attempting to diagnose root causes). Remove reasons that aren't regularly used and add reasons as needed to ensure that 'All Other Losses' is not in the top ten losses.

Focus on the Constraint
Every manufacturing process has a constraint, which is the fulcrum (i.e., point of leverage) for the entire process. Measure Down Time at the constraint and **IMPROVE THE CONSTRAINT**[†] to ensure that resources are focused where they will have the strongest impact on throughput and profitability.

Select Metrics to Drive Desired Behaviors
Metrics that are emphasized and shared are very powerful drivers of behavior. Treat Down Time as a KPI (Key Performance Indicator) and continually reinforce its importance. People love an opportunity to win, so set SMART targets (Specific, Measurable, Achievable, Relevant and Time-Specific) and reward success, even if it's by simple recognition.

Make Down Time Visual
Provide clear visuals to indicate when the line is down, and escalate those visuals if the line remains down for an extended period of time. Train team members to react quickly, and provide multiple levels of escalation response (e.g., operator, supervisor, manager). The goal is to prevent small issues from becoming large incidents.

Quick Fix Immediately; Escalate 100-Year Fixes
Look at resolving each Down Time loss in one of two ways:

- Quick Fix (move forward with an immediate fix that can be implemented without outside resources)
- 100-Year Fix (escalate a problem that needs outside resources to engineering or management for a permanent fix)

Perform a 3S Blitz
A clean and organized work environment creates better conditions for well-running equipment, which is why **5S**[†] is the foundation of TPM. A 3S blitz applies the same principles in the form of a one-off exercise: Sort (eliminate what is not needed), Set in Order (organize what remains), and Shine (clean and inspect equipment).

Perform a Maintenance Blitz
Most equipment has wear parts (e.g., seals, gaskets, bearings, belts, and rollers) that can cause breakdowns as they reach the end of their operational life. Check that all wear parts are in good condition and replace any parts that are suboptimal.

Mark Optimum Settings
When equipment settings are continually tweaked by operators, supervisors, and engineers they are less likely to be optimal and more likely to create conditions for Down Time. Decide and mark optimal settings.

Perform Hourly Reviews
Set up a whiteboard next to the production area. Every hour, hold a three-minute stand-up meeting at the whiteboard to update performance, identify the largest Down Time incident from the last hour, and agree on one improvement action for the next hour. This is a simplified version of **SHORT INTERVAL CONTROL**[†].

Only Change One Thing at a Time
When fixing a Down Time issue, make one change at a time. Often, multiple changes are made at the same time, without individually checking their impact on the equipment. This makes it much harder to diagnose problems and evaluate the effectiveness of solutions.

BENEFITS

In the **short term**, Down Time Tips provides practical and proven ways to reduce Down Time using existing resources.

In the **long term**, Down Time Tips should be replaced with a structured approach to reducing Down Time, such as TPM.

ROLES

Down Time Tips involves the following roles:

Role	Description
Manager	Initiate program. Identify constraint. Select metrics. Decide when to switch focus to a more structured approach, such as TPM.
Supervisor	Maintain reasons. Create visuals. Escalate 100-year fixes. Mark optimal settings. Lead 3S and maintenance blitzes. Lead hourly reviews. Control change.
Operator	Capture reasons. Respond to visuals. Implement quick fixes and corrective actions. Verify settings are optimal.

KEY INSIGHTS

Keep an Eye on the Big Picture
Down Time is the largest source of lost productivity for most manufacturers. It is also the most observable, involving highly visible unplanned stops. Consequently, other types of losses sometimes slip below the radar. For example:

- Frequent product changes may result in significant lost production time due to changeovers.
- Frequent small stops or slow cycles may result in significant lost production time that isn't measured.

It's important to keep an eye on the big picture. For most companies, this means implementing the gold standard for measuring manufacturing performance: **OEE**[†] with a breakdown of OEE losses into the **SIX BIG LOSSES**[†], and a further breakdown of OEE Availability losses into Down Time Reasons. Add **TEEP**[†] (Total Effective Equipment Performance) as a metric for insights on capacity.

Plant Not Open	**Capacity Losses**	**TEEP** is the ratio of Fully Productive Time to All Time. It takes into account Capacity Losses and the Six Big Losses.
Production Not Scheduled		
Setup & Adjustments	**Six Big Losses**	**OEE** is the ratio of Fully Productive Time to Planned Production Time. It takes into account the Six Big Losses. **Six Big Losses** are the most common forms of lost productive time. Each loss has specific countermeasures.
Breakdowns		
Reduced Speed		
Small Stops		
Production Rejects		
Startup Rejects		
Fully Productive Time	**Perfect Production**	**Perfect Production** is manufacturing only good parts, as fast as possible, with no downtime.

Make sure you have an accurate and comprehensive view of lost production time. Start by measuring OEE. Next, record Down Time Reasons for OEE Availability Loss (shown above in orange). Next, track all of the Six Big Losses. Finally, calculate TEEP (for insights on capacity).

Capture Improvements
Whenever an improvement is made, ask two simple questions:

- Has a new best practice been created?
- Will other teams benefit from this improvement?

If the answer to either question is yes, consider capturing the improvement as **STANDARDIZED WORK**[†]. This will lock in gains and ratchet up performance over time.

Shift from Reactive to Proactive
There is a big difference between working reactively (fixing problems as they occur) and working proactively (putting in long-term fixes and improvements). If most of your time is spent reactively fixing problems your progress will be limited. Reserve time for proactive improvements, and strive, over time, to shift the balance from reactive to proactive.

Consider TPM
For a comprehensive and proactive approach to reducing Down Time consider **TPM**[†] (Total Productive Maintenance). TPM blurs the distinction between production and maintenance by empowering and training operators to maintain their equipment.

The scope of TPM goes far beyond Down Time. It includes a rich set of tools and processes for eliminating waste, including addressing all of the Six Big Losses. Because of its depth and complexity, a complete TPM implementation can take years, and requires strong continuing support from top management.
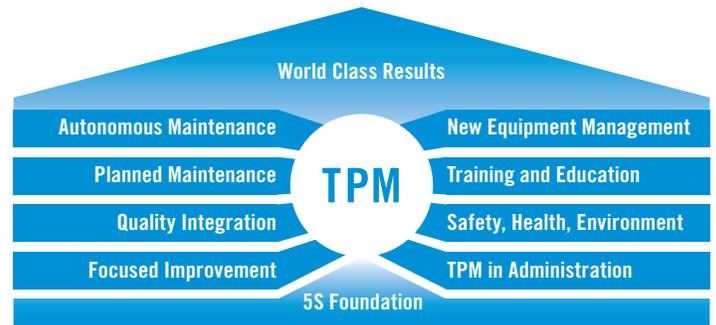
The traditional TPM model consists of a 5S foundation (Sort, Set in Order, Shine, Standardize, and Sustain) and eight supporting activities.

LEVEL AND DIFFICULTY

The Level is Foundation. Reducing Down Time is a fundamental imperative for most manufacturers.

The Difficulty is Easy. Each Down Time Tip is designed to be straightforward to implement using existing resources.

RATE YOURSELF

How comprehensively is your site applying Down Time Tips? Answer ten simple questions to see how close you are to a model implementation.

Question	✔
1. Is a reason and duration captured for each Down Time incident?	
2. Is the constraint the primary focus of improvement?	
3. Is Down Time treated as a KPI (with associated SMART targets)?	
4. Are Down Time incidents highly visible and escalated over time?	
5. Is each Down Time incident evaluated for quick or 100-year fix?	
6. Are 3S blitzes periodically organized for the work area?	
7. Are maintenance blitzes periodically organized for equipment?	
8. Are optimum settings decided and marked on equipment?	
9. Are hourly reviews used to drive immediate improvement actions?	
10. When fixing issues is one change implemented at a time?	

[†]*This topic is also available as part of the XL Improvement Framework.*