LEAN | TPM | Autonomous Maintenance Steps | Step 0: Education

Autonomous Maintenance Steps?

Step 0: Education: *Understanding functions of equipment & Maintenance*

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Step 1: Cleaning: *Initial cleaning*
Step 2: Sources: *Eliminate sources of contamination*
Step 3: Standards: *Establish standard inspections, cleaning and lubrication*
Step 4: Inspection: *Check levels, leaks, tighten, damage and wear.*
Step 5: AM Standards: *Operator performs small maintenance tasks on equipment.*
Step 6: Quality: *Constant improvements (Kaizens) to spot & reduce variability.*
Step 7: Supervision: *of operators implementing AM (Steps 1-6) and continuous education (Step 0).*

(Notice AM requires continuous operator education of equipment-maintenance.)

You may know the **Autonomous Maintenance steps**, but did you know there is a step 0 **before Autonomous Maintenance step 1**? This article explains and has a **free Autonomous Maintenance PDF** to help you share Step 0 with others.

With the growing demand for manufacturing facilities, authorities took many actions to escalate the efficiency of production processes. Many formal methods were implemented for a longer period of time without acquiring significant growth in the field. But with the introduction of Autonomous Maintenance (AM) to the modern manufacturing facilities they achieved an increment in efficiency and productivity in a historical brisk pace.

Total Productive Maintenance (TPM) which was initially practiced in a subsidiary company related to Toyota and it concerns about improving Overall Equipment Effectiveness (OEE) of machineries used in the production facility. LEAN and TPM are commonly addressed when it comes to modern manufacturing facilities while TPM within LEAN tries to increment the productivity of a facility, ultimately LEAN philosophy targets to reduce waste. Autonomous maintenance is listed first in the 8 pillars of TPM and it's considered as a key concept of total productive maintenance.

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Most of the machines used in modern facilities are a result of sophisticated technology and technicians with a versed knowledge are responsible for the health of such machines. When compared to technicians, machine operators spend considerable amount of time with the machine throughout their working hours. With the repetitive actions performed in the same machine for a prolonged period of time, machine operators gain an experience about the working patterns of the machine. Those experiences can be used to perform small kinds of maintenance actions on the machine. Hence dedicated technicians are no longer needed to perform such

maintenance activities like General Visual Inspection (GVI), lubrication, bolt tightening, monitoring and cleaning.

Term: "
Autonomous Maintenance Step 0
"

Definition: "
Educating machine operators on the basic knowledge of machine components and functions.
"

Autonomous Maintenance Step 0:

Autonomous maintenance is achieved by undergoing 7 simple steps and the initial step being, Step 0: Operator Autonomous Training. In the step zero of autonomous maintenance, the goal is to increase basic understanding about machine components and train machine operators to perform maintenance activities to a certain level. If the maintenance action is too complex for a machine operator, technicians can be called upon for the assistance. With the relief from ordinary maintenance activities technicians can be detailed for specific improvement and preventative tasks which requires technical expertise. Autonomous maintenance directly impacts on the Overall Equipment Effectiveness and OEE can be raised by adopting autonomous maintenance actions which are outlined under autonomous maintenance as described above.

An approved training is mandatory to train machine operators to perform such maintenance tasks to achieve planned effectiveness and to reduce accidents that may encounter during newly incumbent tasks. A proper training program can standardize the tasks and assists machine operators to comply with the correct standards. Technical experts within the company are good assets that can be utilized to conduct training programs for the operators. Machine one point lessons, instructional videos and machine component sheets can be utilized to enhance the effectively of the training program.
Nowadays courses which are offered through internet has become the prime concern in trainings due to their high quality and readily availability. Most of such courses contains instructional videos to make the learning experience more interesting and effective.

Print Equipment & Maintenance Training Newsletters

Why Autonomous Maintenance Step 0 and not Step7? *With operators first understanding how equipment works and maintenance programs, they will more likely develop a vested interest in your autonomous maintenance program, understanding and accepting the need for Step 1 (cleaning) more. It will greatly increase the success or your entire autonomous maintenance program.*

TIP: Educating all your machine operators on equipment and maintenance operations doesn't have to be expensive to time consuming, even if you have hundreds or even thousands. BIN95 has an in-house AM2 training program consisting of educational newsletters and articles in PDF format you can print and distribute to all your employees for just $99-$299 per facility! Same low price whether you have 5 or 5000 employees at that physical location!

Being trained under the Step 0: *Operator Autonomous Training*, operators can proceed a step forward by commencing some autonomous maintenance activities. The actions to be performed next is explicitly stated in the Autonomous Maintenance Step 1: Thoroughly clean equipment and its surroundings. When the machine operator arrived to the Autonomous Maintenance Step one, they are equipped with necessary information which were taught in the step zero to perform needed maintenance tasks. Hence going through the step zero is mandatory before the step one to ensure the safety of machine operator and integrity of the task performed.

Already started your Autonomous Maintenance Program? Remember Step 7: Continuous Improvement! So, don't let that stop you from educating your operators about the equipment and maintenance practices.

References:

1) https://bin95.com/reliability_training.htm
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3) https://www.industryforum.co.uk/resources/articles/autonomous-maintenance/
4) http://leanmanufacturingtools.org/438/autonomous-maintenance/
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