Fideltronik

The problem solving 8D methodology

8D Methodology

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Introduction

In any company or other organization some problems may appear, sometimes they are easy to remove and sometimes it seems that the solution is not possible

In case problems occur, one should run the appropriate action to eliminate the problem. Often however it turns out that the same problem appears again and usually in the most difficult moments - shipments to the customer ☹

If the problem appears again it indicates that the real cause is not resolved but has only "healed" the problem temporarily, and it's crux "cause" has not been resolved ☹.

Sometimes the reason is that the problem is defined incorrectly, and sometimes a lack of consequence in implementing such corrective action to prevent the same problem appearing again.

8D Methodology

Introduction

To ensure a systematic and orderly way of solving problems and recording them easily, recommended is a widely known in the automobile market

Method of solving problems using 8D methodology

Advantages:

1. Easy and logical method, clearly shows the next steps in solving the problem
2. Often this is method required for documenting corrective actions for the Customer
3. An ideal method of reporting nonconformances to suppliers
4. Method known and applied by all companies in the automotive industry.

1D Establishing the team

The first step is to establish the team consisting of a few people from various departments (2-10), who will be responsible for realizing particular 8D steps and choosing a leader. The size of this group and it's composition depends on the character of the problem and undertaken actions.

The team should fulfill the following steps:

- Have good knowledge of the product and the processes to realise it
- Multidisciplinal – meaning people from various areas:
  - Engineers (designers)
  - Technologists (production)
  - Rework operator, production staff (often have the biggest experience)
  - Quality Engineers
  - Buyers
  - Other
- Have appropriate knowledge to implement relevant solutions to the problem.
- The group should have a leader, who supervises and closes the 8D

2D Describing the problem

This is a step in which you need to describe the problem as clearly as possible. A problem which is correctly described is a starting point for further analysis steps and proper understanding of the nature of the problem for the team and for people from the outside.

It's recommended for the description of the problem to include:

- Properly described phenomenon. Do not restrict to laconic statements.
- Place problem was detected (process, step, post) – it is important to correctly undertake preventative actions.
- Scale of the problem, eg. % rejected or qty of pcs / range deviation out of tolerance etc.

It's very important for the problem to be „measureable" that is how many % or ppm or in another unit of measurement.

This later allows for proper assessment whether the implemented corrective actions are effective or not.

3D Immediate actions

This is a step in which the appropriate immediate actions are undertaken in order to prevent escalation/growth of the problem (further production of nonconformant items) or what is worse delivering nonconformant products to the Customer. Containment actions should include a **correction, meaning the removal of the effects of the problem.**

Example actions :

- Stoppage of production / shipment
- Segregation of products
- Rework or repair of products returned from the Customer and/or at the supplier
- Informing the subsupplier about the detected problem
- Informing operators about the problem

Check if in similar products or processes, there is a similar risk (if yes – appropriate immediate actions should be implemented)

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4D Root Cause

To really eliminate the problem the real cause of it should be identified, the so-called „root cause". This is not a easy task. This is why team work is important to look at the problem from various points of view. Often many of the actual causes of many of the problems lie deep in management of the company. Often in production processes the cause of the problem is put to „operator error".

This is a mistake. The causes are very much deeper:

- Lack of correct tools
- Lack of training or the training is not effective.
- Work in overtime is hurried (effect of wrong decisions of management)
- Production process is not matched to quality requirements.
- Many others

The root cause of the problem can be determined using forinstance a **Ishikawa diagram** which entails 5 main components: *Manpower*, *Methods*, *Machinery* , *Materials* , *Management* and for the most probable process of the examined nonconformance **5-WHY** methodology should be applied.

5D Corrective actions

A corrective action leads to **removing the ROOT CAUSE** of the nonconformance which occurred and preventing it's reoccurrence in the future. That's why corrective actions are realized in reference to the cause of the resulting nonconformance or undesirable situation in the past. Corrective actions should be chosen and implemented, to which exist the biggest probability in eliminating the problem and preventing it's future reoccurrence.

Example: Problem – nonconformant dimension of item

Root cause - worn tool

Corrective actions:

- Exchange of the worn tool
- Defining the lifecycle of the tool
- Updating the maintenance instruction – adding a record about the method of verification of the tools lifecycle and reaction plan
- Implementing a measurement card of the amount produced with the aim of controlling the lifecycle

6D Validating the corrective action

The undertaken corrective actions should be verified in whether they had an effect and are effective. It should be based on the „raw data" from the processes. The evaluation of actions should not be based only on the opinion of the persons interested.

Examples:

- Decreased rejected % (ppm) in the process
- Results of tests/process control showing improvement
- Engineering measurements (dimensions, appearance of products) are proper (in tolerance)
- Other proof showing introduction of corrective actions
- The supplier supplies products of higher quality.

7D Preventive Actions

A following step is describing what actions should be undertaken to prevent reoccurrence of the nonconformance not only in claimed products but also in all products/ in the entire process. Here we define system actions.

Example (relating to the example from point 5D):

- Preparing systematic and complete training for staff
- Introducing internal audits of the maintenance process and/or verification of actions undertaken after the last maintenance process audit.
- Cyclic review and analysis of the life time of all tools
- Changing procedures (organizational change)

8D Verify and congratulate team

The last step is evaluating whether the undertaken actions in step 7D are effective. It is recommended for the evaluation to be done by comparing the scale of the problem (as described in step 2D) with results gained from subsequent deliveries or from rejection results from following production batches.

The evaluation must be based on measureable data.

During the evaluation it is worth to draw conclusions as to how the team worked, what individual team members learnt and what the conclusions are for the future – what can be improved in solving problems etc.

The evaluation is performed by the leader of the team.

Thank you for your attention