Welding Robot Stopped

Conventional 5-Whys
Sentences written down the page. (81 words)

1. "Why did the robot stop?"
The circuit was overloaded, causing a fuse to blow.
2. "Why is the circuit overloaded?"
There was insufficient lubrication on the bearings, so they locked up.
3. "Why was there insufficient lubrication on the bearings?"
The oil pump on the robot is not circulating sufficient oil.
4. "Why is the pump not circulating sufficient oil?"
The pump intake is clogged with metal shavings.
5. "Why is the intake clogged with metal shavings?"
Because there is no filter on the pump.

Cause Map 17-Why
Four causal paths
Mid-level Analysis with Parallel Cause-and-Effect Relationships (70 words)

Lesson: There are solutions in the 17-Why that are unavailable in the 5-Why. Limiting the analysis limits your ability to mitigate risk.

For information about developing and refining problem analysis skills in your company contact our office or visit our website. We provide solid training, consulting and facilitation services.

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Start with any one of these 5-Whys
A quick way to start and improve a problem analysis.

These (3) Different 5-Whys combine into a more thorough explanation.

5-Why Cause Map
Oil flow, pressure, not monitored

5-Why Cause Map
Fuse blew on robot

5-Why Cause Map
Metal shavings in the oil system...from where?

Improve Your Problem Solving Skills
People don’t always see problems the same way. Each person can give a different explanation as to why a problem happened, yet each explanation may be accurate.

The three 5-Whys to the left provide only part of the bigger picture. When these three 5-Whys are combined, a more complete explanation is provided.

This more detailed analysis (the 17-Why Cause Map) provides the group with a better understanding of the issue as well as different solutions options to prevent it in the future.

Bring the 5-Why Cause Mapping Workshop to your site.
Improve the way your people analyze, document, communicate and prevent problems. Our 5-Why Cause Mapping Workshops develop people’s cause-and-effect thinking skills.

Attendees will be able to dissect any issue by starting with a quick and simple 3 to 5-Why then expanding it as needed into a more detailed explanation of what happened and why. Visit www.thinkreliability.com to learn more.

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