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TIPS for DETERMINING the OPTIMUM LEVEL of AUTOMATION

To assist our customers in justifying their projects, we will discuss some easily overlooked questions that should be answered before deciding to increase the level of automation. We will address costs and benefits hidden in the following areas:

- Frequency of use
- Reliability
- Simplicity
- Training
- Calibration
- Process knowledge
- Spare parts availability
- Suitability

While the significance of these items will vary by the nature of the project under consideration, we believe they are important factors in any project.

Frequency of use

To make automating a process cost effective, the procedure must need to be repeated frequently and provide enough savings to make the effort worthwhile. Automation can cost more to purchase and maintain than the savings can support. Too often, a process is automated because it can be, not because it should be.

Reliability

Unless the automated function performs reliably, the effort to maintain the equipment can exceed the effort to manually perform the function. Will the automatic equipment cause additional delays when a manual override becomes necessary? Will the failure of one automated function cause a whole manufacturing line to go down? Are there so many automated functions on one line that failures affecting the whole line are inevitable? Can you afford to shut the whole line down to make repairs/adjustments to an automated feature? Can the machine operate manually if the automatic function fails? Will the automation still produce a positive return after these outages are taken into consideration? Is reliability being sacrificed in the design to reduce purchase price in order to make the automation justifiable? Frequently, these question go unanswered in the rush to modernize and improve image.

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Simplicity

There is always a benefit to keeping it simple. Reliability is usually improved. Training costs go down. To be worthwhile, the automation must provide a benefit that significantly exceeds the obvious advantages of keeping it simple.

Training

Some managers look to automation to reduce the required skill level and lower their training needs. While this can still happen, automation today usually increases the required skill level and increases the need for training.

Calibration

Automated equipment often requires periodic re-calibration in order to work properly. Calibration errors develop gradually, thus the need for re-calibration is usually not discovered until significant productivity losses have occurred. For automation to produce its intended benefits, a more disciplined culture must be established to insure proper maintenance and calibration. Are you prepared to make the commitment?

Process knowledge

Automated processes must be thoroughly understood in order to be able to maintain and calibrate them. Modern equipment, especially electronic, requires much more than visual skills to understand, manage, operate and service. People with adequate analytical skills in mathematics, physics, and engineering are hard to recruit. Developing these skills takes experience, and time. Are you prepared to make the commitment?

Spare parts availability

Does the automated feature use specialized parts that are only available from one source at exorbitant prices? Will long lead times be necessary because the parts are not stocked, or because they are stocked only on another continent? Can you afford the cost of the inevitable work-around required to meet production schedules?

Suitability

Is the automation well suited to your particular needs? Often generic systems are supplied at favorable prices to increase sales volume to help recover engineering costs. Will the generic system work for you? Would a custom engineered system better fulfill your needs and provide a greater return?

These questions are given ample consideration in the design and marketing of our equipment. We use only generic, reliable components, and strive for the simplest, and most intuitive design possible.

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