

Machine Retrofits

Retrofits

Brown & Sharpe Upgrades and retrofits virtually all makes and models of CMMs. So if you have an older CMM or can't get spare parts, or your software is outdated, this site will help you decide if an upgrade or retrofit is appropriate.

Calculate the Payback

Payback on upgrading your present CMM can be broken down into the following categories:

- Reduced inspection time and increased productivity
- Reduced downtime
- Reduced scrap and rework
- Intangible benefits

Just follow the steps below and use the interactive CMM Upgrade Justification form to calculate your payback.

Reduce Inspection Time, Increase Productivity

Average time to inspect a part is X minutes. You average Y parts per month. Operators wage is \$Z per hour including benefits. This individual can spend up to 15 hours analyzing and compiling data after it is measured.

With an upgrade you will utilize faster inspection because of more powerful software/hardware and also perform electronic evaluation (utilizing database tools and CAD data) than manual therefore you can get monthly labor savings utilizing the upgrade.

Reduced Downtime

Since electronic evaluation is possible you will reduce the first article inspection downtime as the manual evaluation of the piece is eliminated.

A simple way to evaluate the cost is to calculate your idle labor cost by seeing how many hour is spent every month on first article analysis. This prolonged analysis will also affect the production. In a typical upgrade you can reduce both the analysis and production cost by at least 25%. Add that to the savings in part a).

Reduced Scrap and Rework

Average monthly scrap rate is R%. This is equal to B pieces/month. The cost of raw material is \$C. Because of this additional time is required for inspection of pieces lost to scrap. These pieces take B*X minutes to inspect. Current rework rate is RW%. Roughly it is D pieces/month which takes D*X minutes to inspect.

By upgrading we can reduce the scrap by at least 5% and rework by 20% due to faster and more accurate analysis.

Using these guidelines we can easily calculate the saved cost.

Intangible Benefits of Upgrading the Existing CMM

- Statistical analysis can be performed at the CMM in real time for both customer and internal use and it can be integrated into internal databases.
- All of the electronics are now guaranteed for one year (in case of controller upgrade), therefore reducing service costs.
- Showing your existing or potential customers commitment to latest technology
- Operator has easier software for use. Company can now train additional people to use the software.
- You can utilize CAD data for inspection and therefore further reduce inspection time by generating programs before parts are made and also utilizing the nominal data from CAD and eliminate any manual entry errors.
- Finally you have extended the life and ROI of the existing CMM.