

How GD&T Saves Money at Each Stage of Product Development

by Alex Krulikowski (ETImail, Vol. 2, Issue 2)

Have you considered how much time and money your company wastes in design and manufacturing? Here are specific improvements that using GD&T correctly can provide your company.

Process/Costs	How GD&T Improves the Process and Reduces Costs
Drawing creation and interpretation	ETI's GD&T training typically results in a 50% skills improvement in the understanding of GD&T. This should translate into a 30-50% reduction in the cost to create and interpret drawings. <i>(Common improvement range: 30-50%)</i>
Drawing changes	Using GD&T correctly on drawings can decrease drawing changes by 50% through: 1. Proper tolerance analysis 2. Creating proper drawings 3. Understanding how to correctly determine tolerance values <i>(Common improvement range: 40-60%)</i>
Communicating design requirements to suppliers & mfg (meetings, trips, etc.)	Drawing specifications are often misinterpreted after release. If companies, suppliers, and manufacturing possessed the same skill levels as the people creating the drawings, your company could eliminate up to 50% of the meetings needed to re-explain drawing intent. <i>(Common improvement range: 30-50%)</i>
Gage design, gage cost, software, and inspection equipment	A better understanding of GD&T can decrease gage costs: 1. Larger tolerances cost less to gage 2. Clear, concise drawings result in the creation of proper gages 3. Using the correct modifier results in less expensive gages (i.e. using the MMC modifier saves 80% over using the RFS modifier) <i>(Common improvement range: 20-30%)</i>
Revisions of gages and inspection equipment resulting from drawing tolerance changes	Using GD&T on drawings eliminates the need for revisions of gages and inspection equipment: 1. Larger tolerances lower the need for gage and inspection equipment revisions. 2. Complete, clear drawings reduce assumptions that lead to gage revisions. 3. Better interpretation of drawings leads to fewer gage revisions. <i>(Common improvement range: 40-60%)</i>
Manufacturing fixtures and tooling (holding fixtures, cutting tools, dies, and special machines)	A better understanding of GD&T can decrease mfg fixture and tooling costs: 1. Larger tolerances result in lower fixture and tooling costs 2. Complete, clear drawings reduce assumptions that lead to improper fixtures and tooling. 3. Using the correct modifier (i.e. MMC instead of RFS) results in less expensive fixtures and tooling. <i>(Common improvement range 10-30%)</i>
Revisions of mfg fixtures and tooling (holding fixtures, cutting tools, dies, special machines due to drawing tolerance changes)	Using GD&T on drawings decreases the need for fixture and tooling revisions: 1. Larger tolerances decrease the need for fixture and tooling revisions 2. Complete, clear drawings reduce the guesswork that results in fixture and tooling revisions. <i>(Common improvement range: 30-50%)</i>
Workpiece rework (salvage procedures, offline workpiece repairs, etc.)	A better understanding of GD&T can reduce workpiece rework. 1. Larger tolerances decrease the need for workpiece rework. 2. Using the correct modifier (i.e. MMC instead of RFS) decreases the need for workpiece rework. 3. Complete, clear drawings reduce the guesswork that results in workpiece rework. <i>(Common improvement range: 20-40%)</i>
Workpiece scrap	Understanding GD&T will eliminate issues that lead to scrap: 1. Larger tolerances significantly lower scrap costs. 2. Complete, clear drawings reduce assumptions that lead to higher scrap costs. 3. Using the correct modifier (i.e. MMC instead of RFS) is less restrictive and results in less scrap. <i>(Common improvement range: 20-40%)</i>
Assembly (includes fixtures and tools used to assemble the product)	The proper use and understanding of GD&T identifies function and assembly problems on paper. It saves both time and money through: 1. Proper tolerance analysis 2. Creating proper drawings 3. Understanding how to correctly interpret drawings <i>(Common improvement range: 20-40%)</i>
Warranty costs	The proper use of GD&T and design skills could reduce warranty costs related to functional problems through: 1. Proper tolerance analysis 2. Complete, clear drawings <i>(Common improvement range: 10-20%)</i>
Plant or production line shutdowns	The proper use and understanding of GD&T helps avoid major plant problems through: 1. Larger tolerances 2. Clear, complete drawings 3. Proper tolerance analysis <i>(Common improvement range: 10-30%)</i>

For more information about GD&T and how it can benefit your company, visit:



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