

# Engineering Change Orders



PowerShift's engineering change order (ECO) subsystem provides a systematic and controlled method to manage engineering changes. Additionally, the ECO programs allow for quick entry of changes to existing items or the set up of entirely new products for evaluation by impacted departments. You can associate all costs with the ECO, creating required items and bills of material to allow for a detailed cost rollup. The ECO process includes the approval of the change order as well as the approval of the actual implementation of the ECO. You decide, by ECO, what approval levels are required and how the changes will be implemented. Once approved, ECO data flows seamlessly to the main PowerShift files for production activity.

CA-1 VG3 SP1 ECO ECO Maintenance 02/10/2011

ECO number: 100021

Reason for change: Change of material to reduce purchase cost. Change impacts three purchased items. A change in the production fixture may be required.

Title: COST REDCUTION  
Project: PROJECT 1234

Pre-approvals:

Requested by: RCE  
Requested date: 01/03/2011

Mfg approval:   
Mfg date:

QC approval:   
QC date:

Eng approval:   
Eng date:

Misc approval:   
Misc date:

ECO writer: RCE Randy Eding  
ECO rev no:   
Rev date:

Costs:

ECO costs	.00
Misc costs	.00
<b>Total costs</b>	<b>.00</b>

Buttons:

Enter text to describe change

Block further changes to the ECO

Track ECO revisions & dates

Block further changes

## Background

The ECO is the basis for making changes to components, assemblies or documents used in the manufacturing process. The ECO also commonly goes by the name of ECN (engineering change notice) or just EC (engineering change). During the initial entry of the ECO you identify who requested, authorized and/or pre-approved the change. You then assign appropriate priority, compliance and implementation levels, identifying required signoffs.

An inquiry details all ECOs associated with an item

CA-1 VG3 SP1 ECOI ECOs By Item Inquiry 02/15/2011

Item: 1 Nut, wire, number 6 \*

ECO number	Title	Prt	Status	New ECL	Parent item	Part des	Action	Qty per assy
100012	ECOPAR10 CHANGE TITLE		Implemented		ECOPAR10		Chg	6.00000
100013	TITLE		Implemented		ECOPAR10		Chg	12.00000
100019	MT CHANGE		Pending apprv B					.00000
100020	ECO APPROVAL TEST	3	Pending apprv C					.00000
100021	COST REDCUTION		Pending apprv	91531			Del	1.00000
100021	COST REDCUTION		Pending apprv D					.00000

## ECO Programs

ECO Approval Hierarchy  
ECO Approval Inquiry  
ECO Approval Maintenance  
ECO By Item Inquiry  
ECO Change Report  
ECO Costs  
ECO Implementation Approval Hierarchy  
ECO Implementation Approval Inquiry  
ECO Implementation Approval Maintenance  
ECO Inquiry  
ECO Maintenance  
ECO Processing  
ECO Report

## Document Management

ECO Print

## System-wide Features

- Standardized user interface is easy to learn; accepts point-and-click or keyboard input.
- Lookups speed record or order retrieval; sort the way you want and use the Restart or Find functions to locate the record you need.
- Each user can set and save sort and selection options for reports and inquiries, reducing the need for custom reports and programming.
- Print to printers, e-mail, fax, PDF, EDI, or Microsoft Excel.
- Information is accessible with pop-up windows, drill downs, and jumps to related programs, reducing the need to switch screens.
- The Data Dictionary supports SQL, Report Generator, and QICLOOK™.
- F1 accesses online help for the program you are running.
- Security system allows users access to selected programs and accounts.

## Table-Driven Field Entries

Many ECO parameters are table-driven and you have control of the table selections. You are not forced into a few standard selections. You maintain the tables to include the selections that make sense to your organization. ECO tables:

- Priority
- Rate
- Compliance
- Action
- Implementation
- Sign off
- Change Type
- Reason for close

## The ECO Document

- What is being changed or added.
- Details of the proposed change/addition.
- What areas of the organization are affected by the change, including those required to approve the change itself and those that are required to implement the change.
- Instructions about when the change is to be completed:
  - Immediately; scrap existing stock.
  - During the next production run.
  - At some milestone point.
- Any miscellaneous costs associated with the change:
  - One time charges
  - Direct Expenses
  - Tooling costs
- PowerShift's document management system facilitates distribution to any number of people in multiple formats (e.g., email, fax) in a single process.

## ECO Process

- During the investigative phase, the costs associated with the change are identified and documented.
- The ECO type determines the default approving parties; you can alter this list as appropriate.
- Approvals are made with full knowledge of the changes and associated costs on an ECO by ECO basis.
- Once the ECO has been approved, it moves to the implementation stage during which assigned parties approve that the ECO is ready to be implemented in production. One implementation is fully approved, ECO items and bills of material are all moved to the live database.

## Approvals

The ECO process uses a system-wide electronic approval indicator as do other PowerShift approval processes. Electronic signoffs allow you to get approvals from multiple parties without the associated leg work. Inquiries are available to check the current approval status of an ECO at any time.