QAD Enterprise Applications
Enterprise Edition

Training Guide

Purchase Costing

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QAD 2013 Enterprise Edition
Workspace: 10USA > 10USACO
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Contents

Change Summary

The following table summarizes significant differences between this document and the last published version.

Date/Version	Description	Reference
March 2013/2013 EE	Rebranded for QAD 2013 EE	--
September 2012/2012.1 EE	Rebranded for QAD 2012.1 EE; Consistency edit	--
March 2012/2012 EE	Rebranded for QAD 2012 EE	--
September 2011/2011.1 EE	Rebranded for QAD 2011.1 EE	--

About this Course

Course Description

This QAD Purchase Costing training guide offers detailed instruction on how purchase orders are costed and how purchase variances are generated and reported.

This guide can be taught individually or as a part of the Product Costing and Cost Management course set, which consists of an introductory class, a class covering general setup topics, and a set of classes on specialized costing topics. Most students will benefit from taking the first two classes and then selecting the additional courses that apply to their business implementation. The complete list of classes is:

- Introduction to Product Costing
- Product Costing
- Advanced Repetitive Costing
- Average Costing
- Co/By-Product Costing
- Cost Management, including Simulation and Planning
- Purchase Costing
- Work Order Costing

Course Objectives

Provides the structural framework and knowledge necessary to track purchase costs and explain purchase variances.

Course Benefits

Provides the opportunity for personnel responsible for purchase costs and variances to understand how the system works.

Audience

Finance and operations personnel who track and explain purchase order costs.

Prerequisites

- Training Guide: Introduction to Costing
- Training Guide: Product Costing
- Familiarity with the .NetUI

Course Credit and Scheduling

This course is valid for 6 credit hours. This course is typically taught in 1 day.

Virtual Environment Information

The hands-on exercises in this book should be used with the latest Enterprise Edition learning environment in the 10USA > 10USACO workspace. When prompted to log in, specify *demo* for user ID and *qad* for password.

Additional Resources

If you encounter questions on QAD software that are not addressed in this book, several resources are available. The QAD corporate Web site provides product and company overviews. From the main site, you can access the QAD Learning or Support site and the QAD Document Library. Access to some portions of these sites depends on having a registered account.

http://www.qad.com/

QAD Learning Center

To view available training courses, locations, and materials, use the QAD Learning Center. Choose Education under the Services tab to access this resource. In the Learning Center, you can reserve a learning environment if you want to perform self-study and follow a training guide on your own.

QAD Document Library

To access release notes, user guides, training guides, and installation and conversion guides by product and release, visit the QAD Document Library. Choose Document Library under the Support tab. In the QAD Document Library, you can view HTML pages online, print specific pages, or download a PDF of an entire book.

To find a resource, you can use the navigation tree on the left or use a powerful cross-document search, which finds all documents with your search terms and lets you refine the search by book type, product suite or module, and date published.

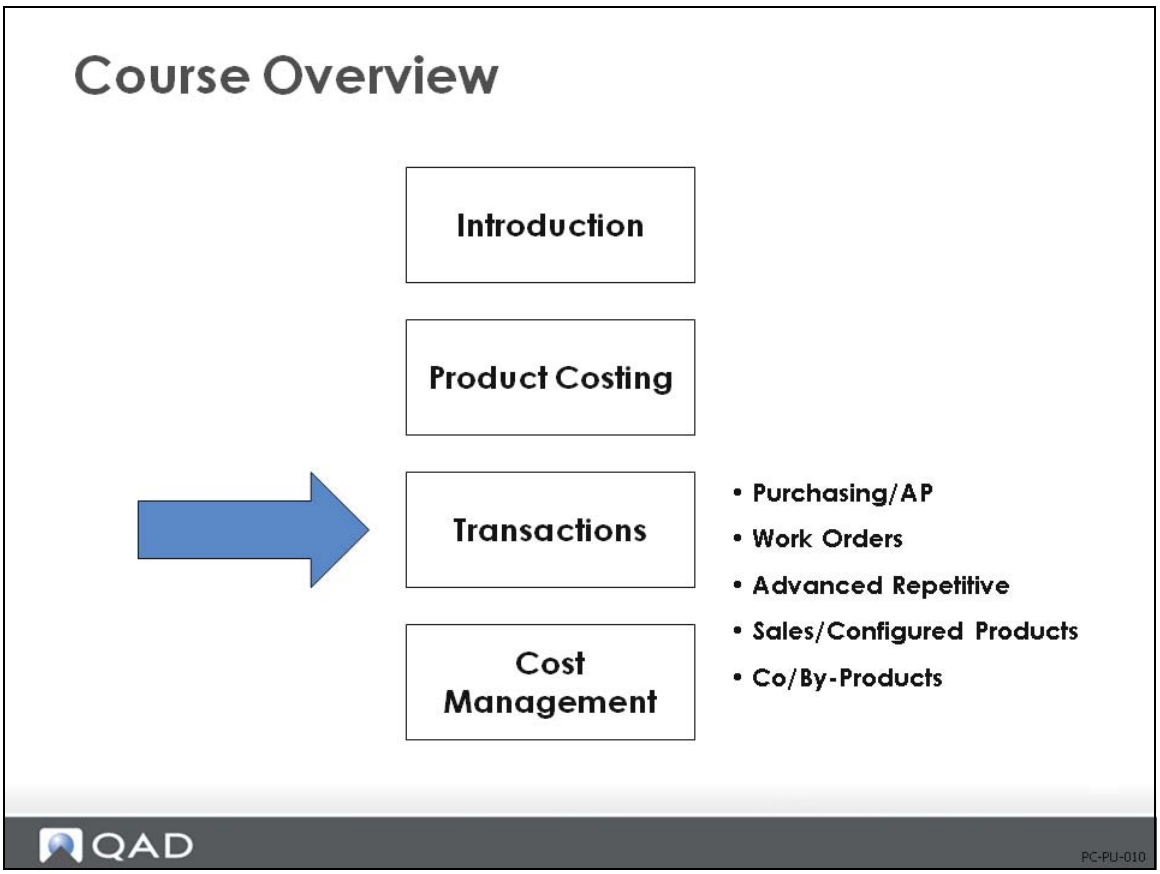
QAD Support

Support also offers an array of tools depending on your company's maintenance agreement with QAD. These include the Knowledgebase and QAD Forums, where you can post questions and search for topics of interest. To access these, choose Visit Online Support Center under the Support tab.

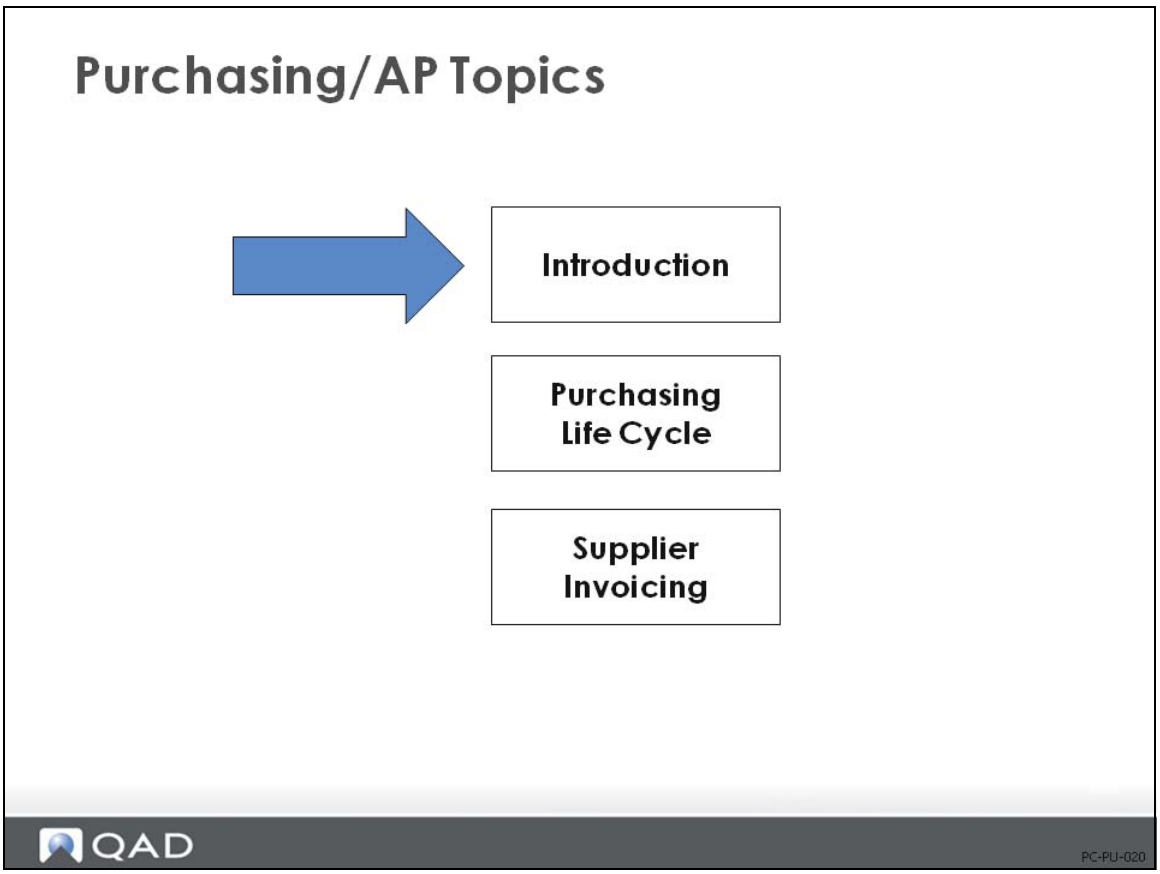
Chapter 1

Purchase Costing

Course Overview

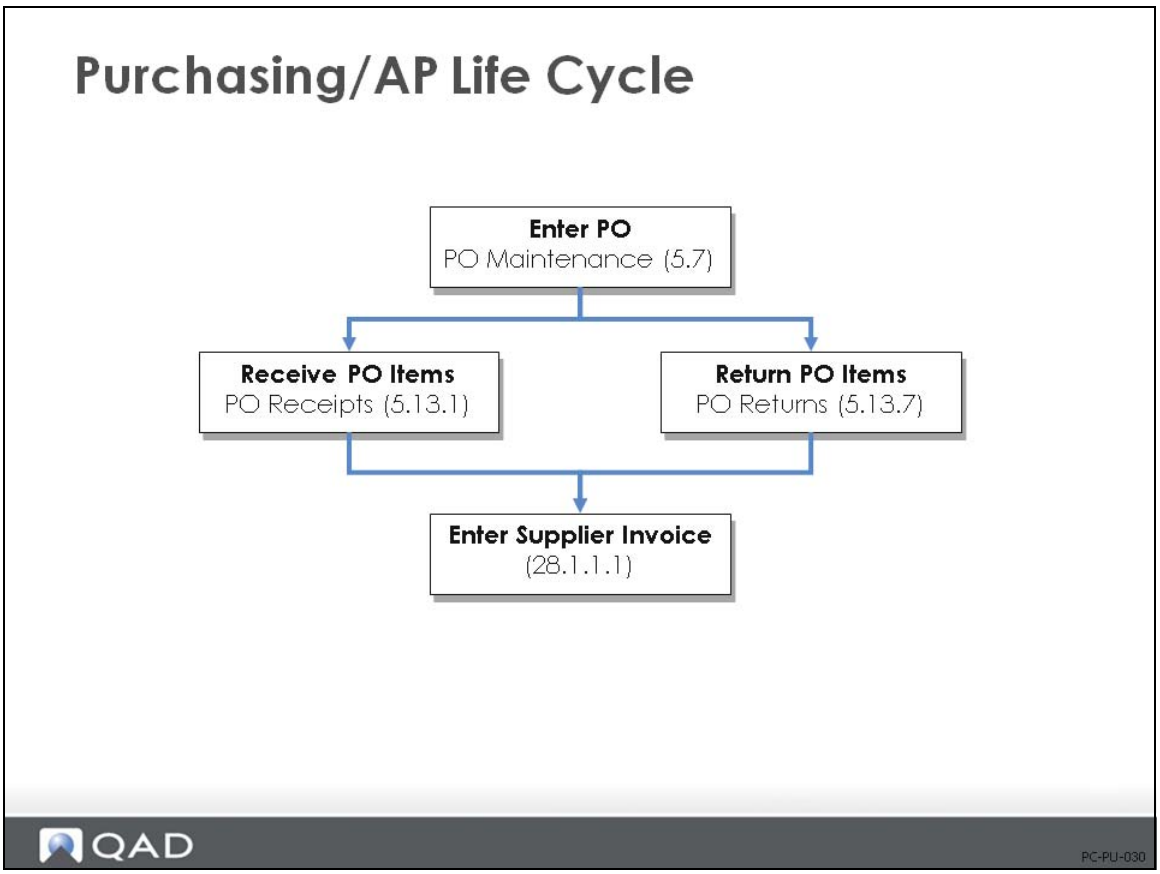


Purchasing/AP Topics



This chapter on purchasing/accounts payable transactions and costing covers the purchasing life cycle, including PO returns and subcontract purchase orders, followed by a section on receiver matching and accounts payable.

Introduction



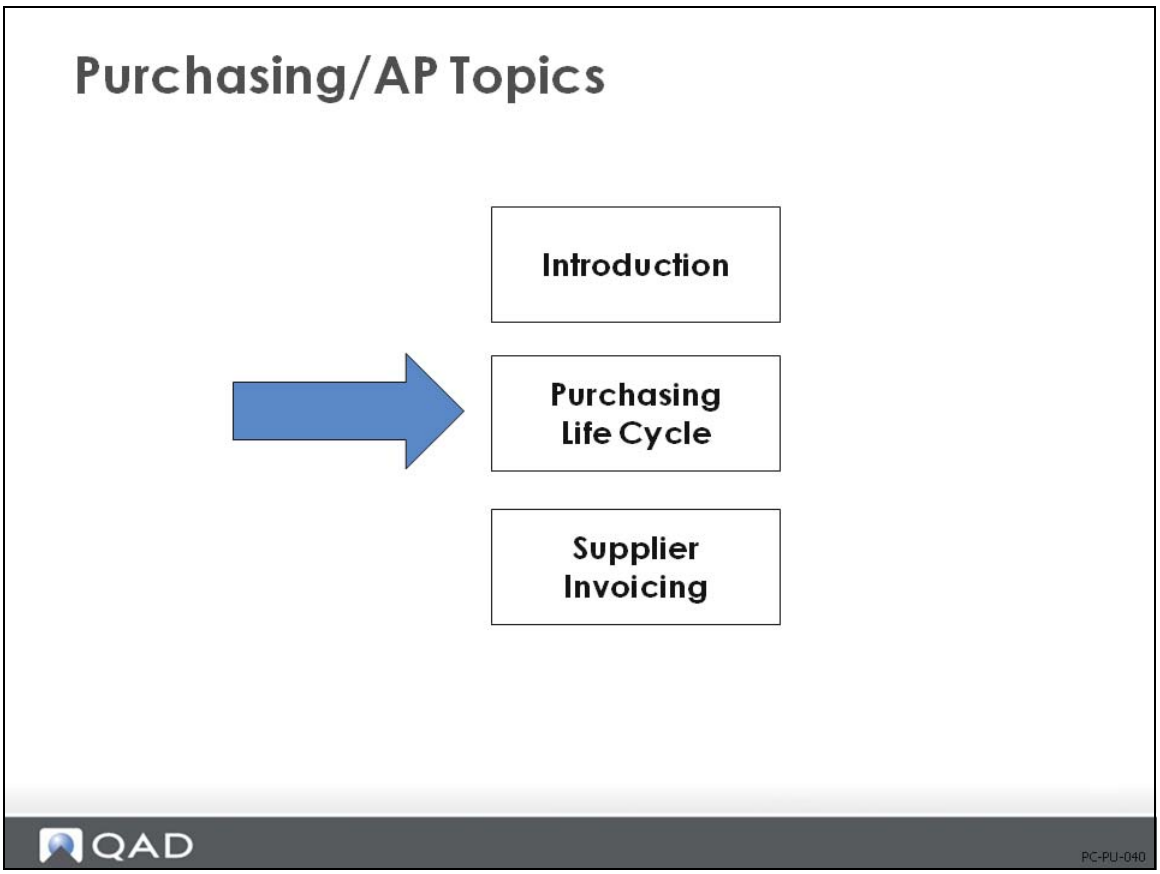
Functions in both Purchasing and Accounts Payable modules affect costs and generate variances.

On the purchasing side, costs are not affected and general ledger transactions are not created until you actually record a purchase receipt or return. At this point, Inventory (or Expense) is updated and the purchase amount accrued.

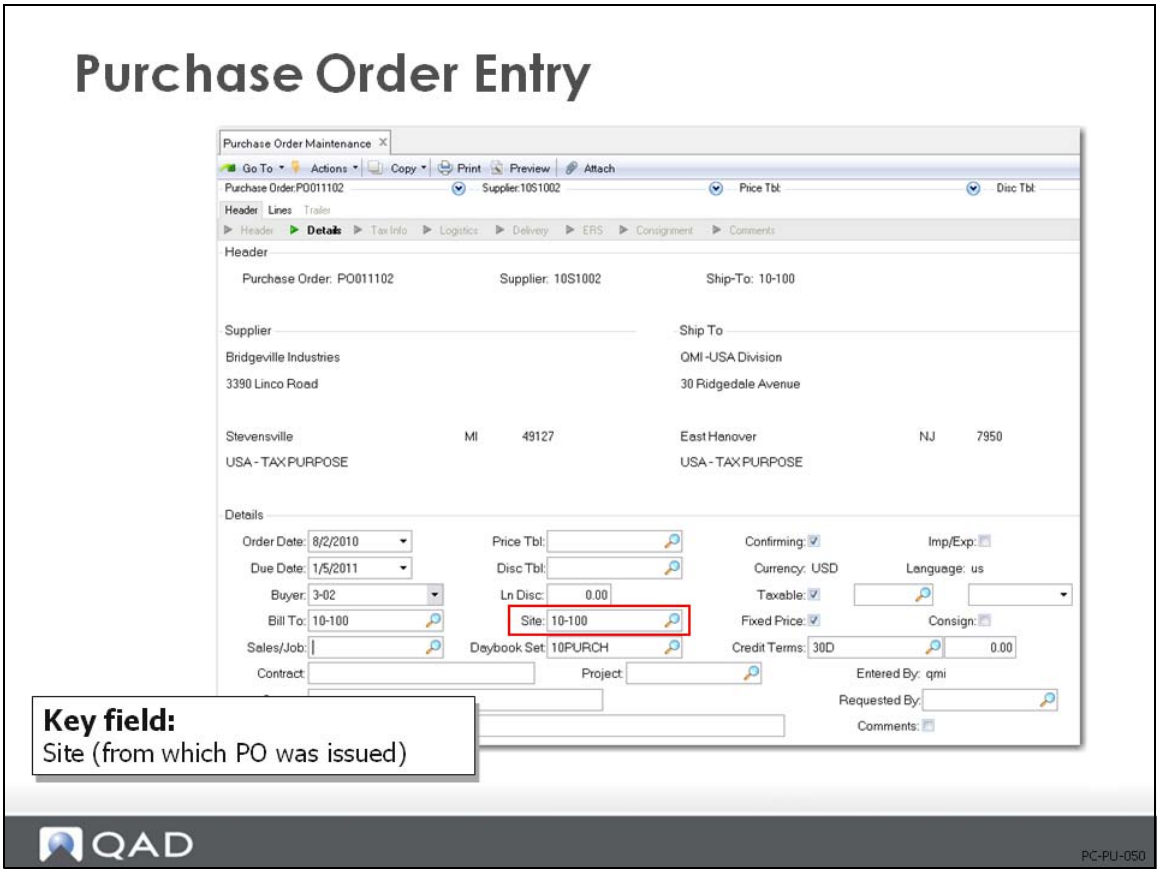
In a standard cost system, a PO receipt is booked at standard cost and the accrual is booked at actual. Any difference is a variance. On non-base currency POs, some of this variance can be a result of exchange rate fluctuations. The rest is booked as a Purchase Price Variance. Returns do the reverse.

Note Return to Supplier (RTS) functions in the Service/Support Management module can have the same effect as purchasing receipt and return functions if they update inventory. These functions are not covered separately here.

Purchase Order Entry

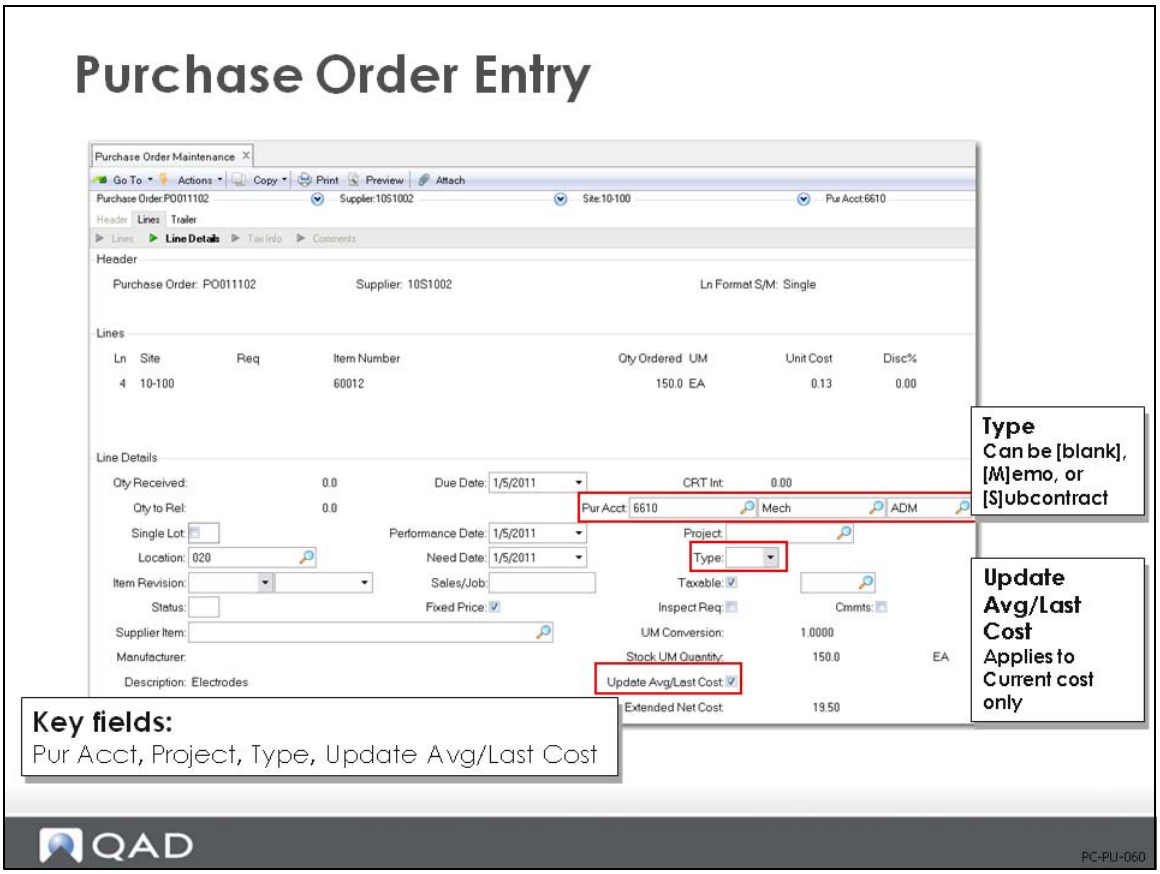


Purchase Order Entry



Site. Each purchase order is associated with a site for inventory reporting. In turn each site is assigned to an entity for financial and tax reporting. GL transactions for sites are posted to the entity for the site.

- During AP Supplier Invoice Create (28.1.1.1), GL transactions for AP are created for the site (entity) identified on the PO
- If you do not enter a site in the header (the first frame), you must manually enter a site for each line item. The site in the header frame is the site from which the PO was issued. The site in the next frame, the line item frame, is the site to which the line item quantity will be delivered.
- Also AP will be posted to the default entity specified in the Domain/Account Control (36.9.24).
- Whenever line items are shipped to sites assigned to different entities, QAD Enterprise Applications creates intercompany transactions. If a PO header site is specified, intercompany transactions are created during PO receipt for the inventory intercompany accounts setup in the financial system. If a PO header site is not specified, intercompany transactions are created during AP supplier invoicing for the AP intercompany account. (Intercompany transactions are discussed in the financial documentation.)



Type. The line item type controls the accounting processes. The type can be [blank], [M]emo, or [S]ubcontract. If the type is [blank], this is considered a normal inventory purchase subject to variances if using the standard costing method or averaging if using the average costing method. Type is discussed in more detail on page 13.

Update Avg/Last Cost. The Update Avg/Last Cost field applies to Current costs only. It can be used to change the current cost at receipt time or to not let the change go through to current cost for this PO line item receipt.

Pur Acct. Purchase orders do not create GL entries until Purchase Order Receipt (5.13.1), but the receipt and subsequent supplier invoicing use accounts maintained in the purchase order for memo items or the product line for most inventory items.

The usage and origin of the Purchases account varies depending on the kind of PO line item.

- Non-inventory (memo) items: Used as debit account in Purchase Order Receipts (5.13.1). (PO receipts debit the Purchase account and credits Expensed Item Receipts.) The account defaults from the requisition, Purchase Requisition Maintenance (5.1.4) or (5.2.6), if one exists, or the account associated with the supplier record, Supplier Data Maintenance (2.3.1), if it does not.
- Inventory items (PO type = blank): Not used. In Purchase Order Receipts (5.13.1), the debit account is the Inventory account for the item's product line, Product Line Maintenance (1.2.1) or Inventory Account Maintenance (1.2.13).

- Inventory items (PO type = memo): Used as debit account in Purchase Order Receipts. If an inventory item is purchased as a memo item, the Purchase account defaults from the product line Purchases account, Product Line Maintenance (1.2.1)

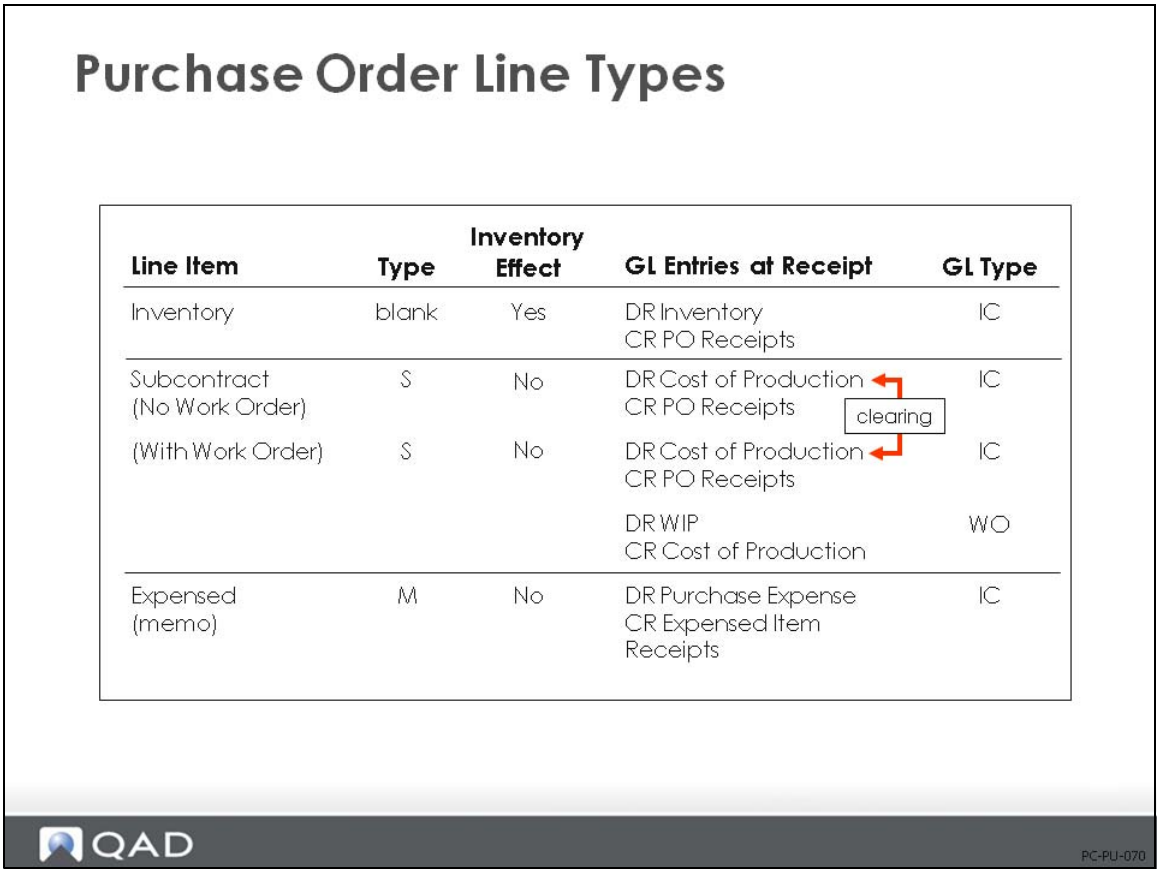
Project. You can use an optional project to track orders or individual line items purchased to support specific company activities. The project in the order header displays as the default for line items but can be changed for individual lines.

If a PO is associated with a project, any GL transactions created for the order also reference the project code. Project codes are set up in Project Maintenance (25.3.11.1).

AP Acct. Defaults from the supplier record. Appears on the purchase order, but the system does not create GL entries for this account until receiver matching in Accounts Payable.

Overriding the default account on the PO will cause the newly entered AP account to be used when processing PO receipts through the Evaluated Receipts Settlement (ERS) process in the AP module.

Purchase Order Line Types



Purchase order line items are categorized by type, set by the system when you enter the item. Type determines whether the receipt affects inventory and which GL transactions are created.

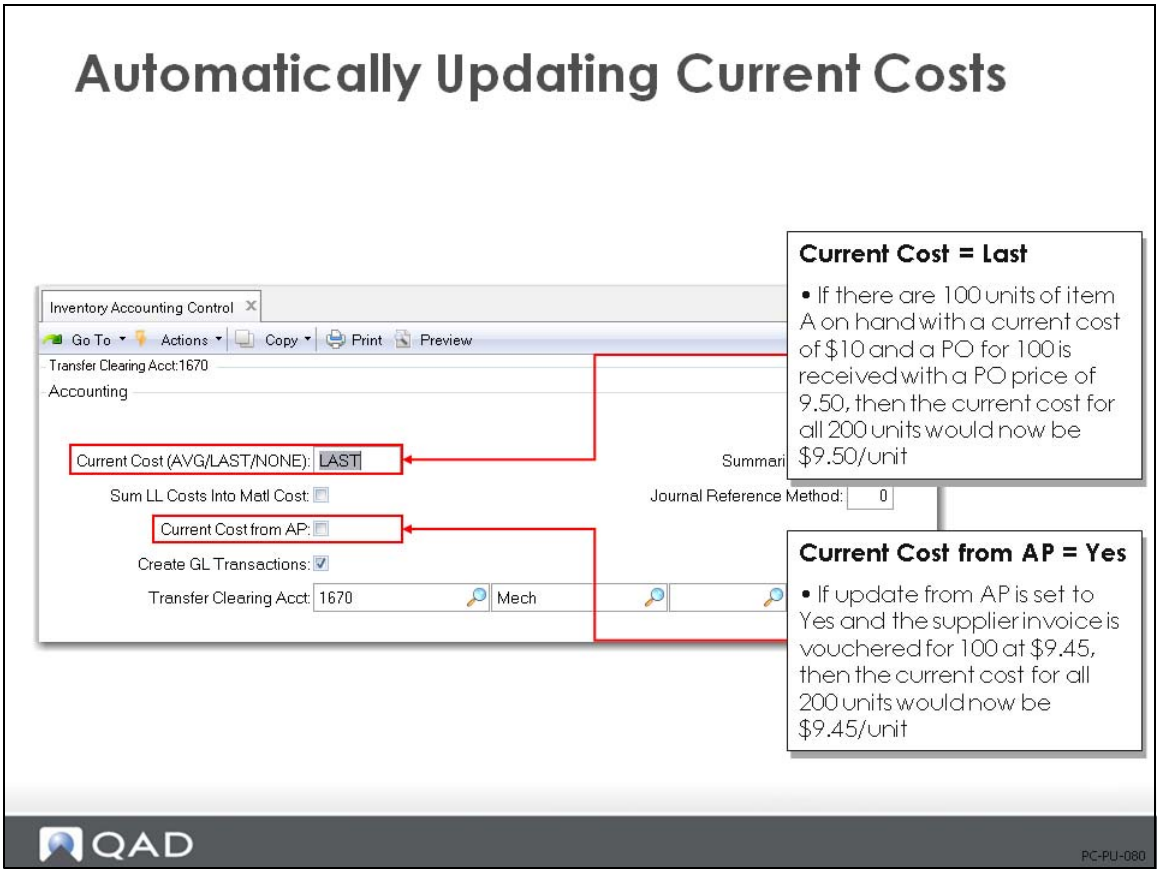
Blank. The normal type of purchase order is an inventory purchase. On these, Type is left blank. When the items are received, they are put into inventory, valued at standard or average cost, and a purchase accrual is created. Both the purchase accrual (PO receipts) and inventory accounts come from the product line of the purchased item: either Product Line Maintenance (1.2.1) or Inventory Account Maintenance (1.2.13).

Note The item number specified on the line must be valid.

[M]emo. When you enter PO lines for non-inventory items (for example, purchases of office supplies or services), the system automatically flags these as type M (memo). These items are set up in Item Master Maintenance (1.4.1) with the Memo Order Type set to a code other than blank. Memo lines do not affect inventory. The expensed Purchases account (from the supplier record) on the PO line item is the default debit account, but you can change it to another expense or asset account. If you purchase parts that have valid item numbers for non-production use (for example, for experimental or prototype purposes), then you must manually set the PO line type to M; the Purchases account defaults from the product line record.

[S]ubcontract. Another type of purchase is a purchase of subcontract manufacturing operations. Like inventory items, subcontract services are set up in the item master; however, they are received to work orders rather than to inventory. During order entry, the system prompts you to enter the work order number, work order ID, and operation for the subcontract item. See “Subcontract POs” on page 30 for further discussion of subcontract purchases.

Automatically Updating Current Costs



Note Current cost is used for comparative analysis only. Current cost and the extended value of inventory at GL cost can e reviewed in the Inventory Valuation Report (3.6.13)

Purchase order receipts update the current cost information if you have set the current method to Average or Last in the Inventory Accounting Control (36.9.2).

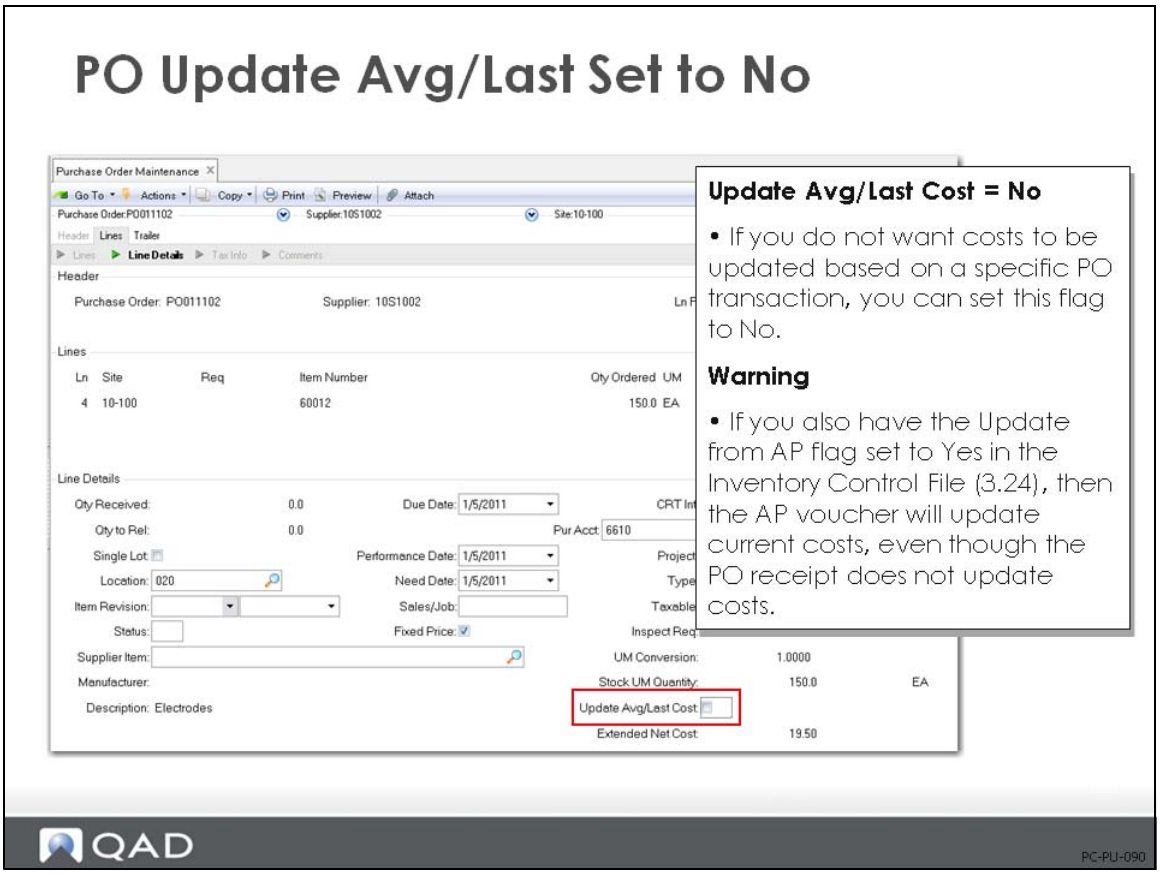
Current Cost Set to Last

When you set your current cost method to Last, the update is very simple. Upon each PO receipt, the purchase order cost for that receipt is set as the new current cost for the item.

Optionally, you can also update the current cost upon each receiver matching transaction for the item, which will use the supplier invoice amount to update the current cost.

Update Avg/Last Set to No

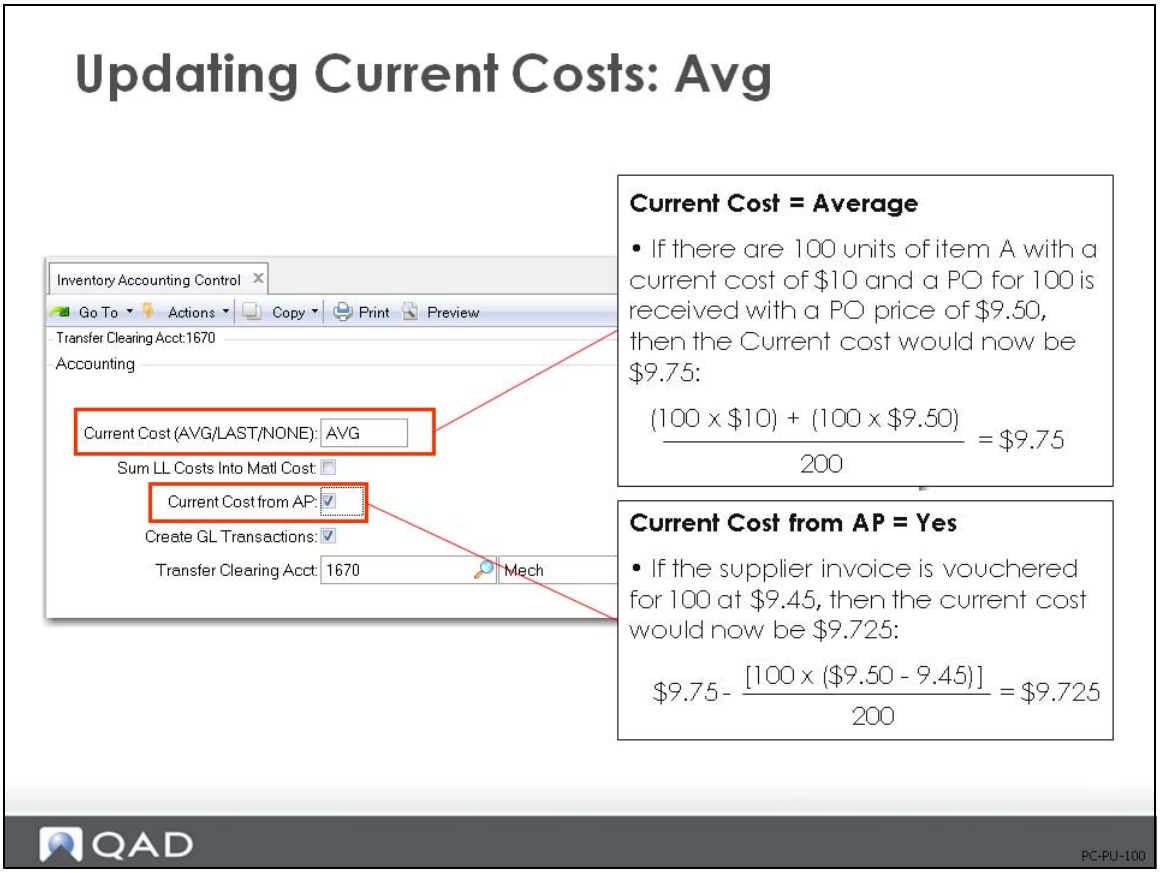
When you set your current cost method to None, no automatic updating occurs. This is total manual control of current costs.



There can be times when you do not want to update the current cost based on a specific PO transaction. This might be due to having to pay an unusual price for the item because of a short-term change in business conditions. In this case, in PO Maintenance (5.7), you can set the PO line so that it does not update based on the Avg/Last cost.

Warning If you also have the Current Cost from AP field set to Yes in the Inventory Accounting Control (36.9.2), then, even though the PO receipt does not update the current cost, the AP Supplier Invoice transaction will update the current cost.

Updating Current Costs: Avg



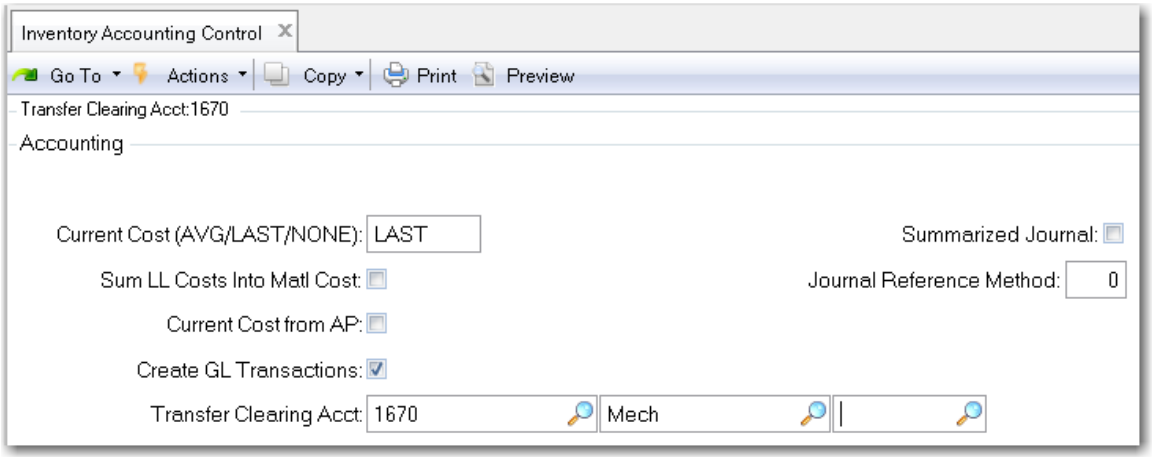
For the average current cost update, the current quantity on-hand is multiplied by the current cost, and the receipt quantity is multiplied by the PO cost. This total is divided by the new total quantity on-hand to obtain the new average cost.

As in the previous example, you can elect not to update your current cost during purchase order entry, but the AP Supplier Invoice will update the costs here if the Current Cost from AP field has been set to Yes in Inventory Accounting Control (36.9.2).

Exercise 1: Review Accounting Records

1 Review the Domain/Account Control (36.9.24). You should be in Entity 10USACO. If not check the workspace you are in; it should be 10USA USA Division [USD]. The currency code in brackets is the currency for this entity. Use the Next button to cycle through all the screens to ensure that all account fields have a value in them. Not all sub-account or cost center fields will have values. You can uncheck the Verify GL Accounts selection.

2 Review Inventory Accounting Control (36.9.2). (In QAD SE this is in Inventory Control (3.24)) Set the Current Cost field to LAST. This allows the system to update current costs automatically based on the last purchase cost or work order cost and ensures the system will generate variances when these costs differ from the GL or Standard cost. The use of average costing is covered in another course.

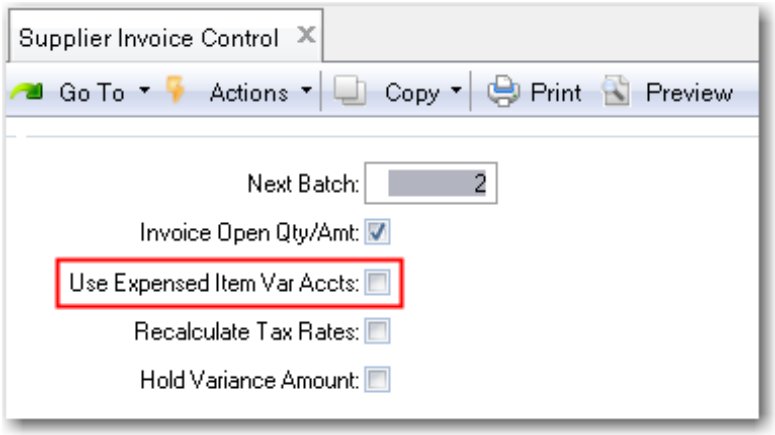


The Supplies Kit (01011) has two purchased components: 01012 Sterile Probe covers and 01013 Sterile Wipes. A kit requires one box of the 01012, and two boxes of the 01013. Both of these items are purchased from Heron Surgical Supply, vendor number 10S103.

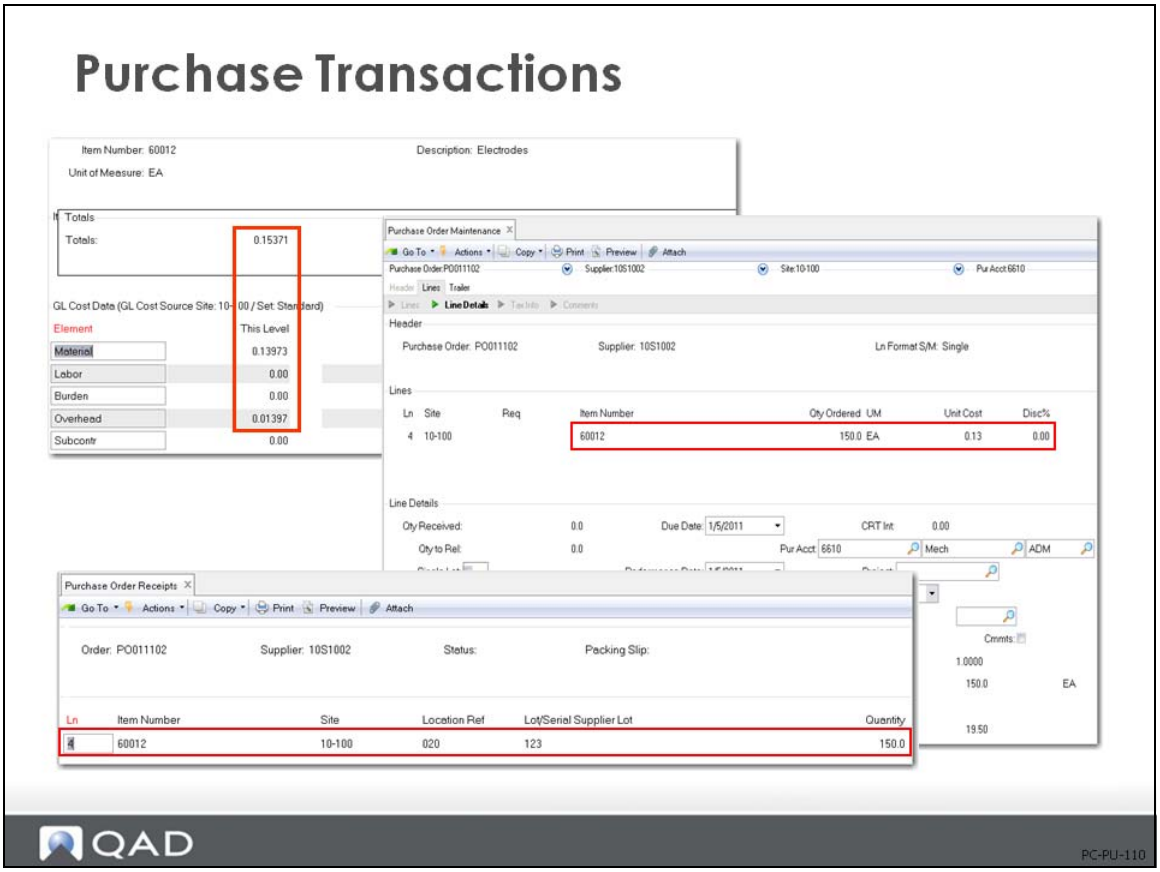
3 Use Item Planning Maintenance (1.4.7) to review the Purchase/Manufacture code to ensure it is P for both items 01012 and 01013.

4 Use Item Cost Maintenance (1.4.9) to review the material cost. The This Level Material cost for item 01012 should be 2.50 in both the GL and the Current cost sets. If not, make it so. This Level Material cost for item 01013 should be 1.00 in both the GL and the Current cost sets. If not, make it so. Both of these items are lot controlled.

5 Review Supplier Invoice Control (28.24); uncheck the Use Expense Item Var Accts: This indicates you are not calculating variances for Memo items but expensing their entire cost.



Purchase Transactions

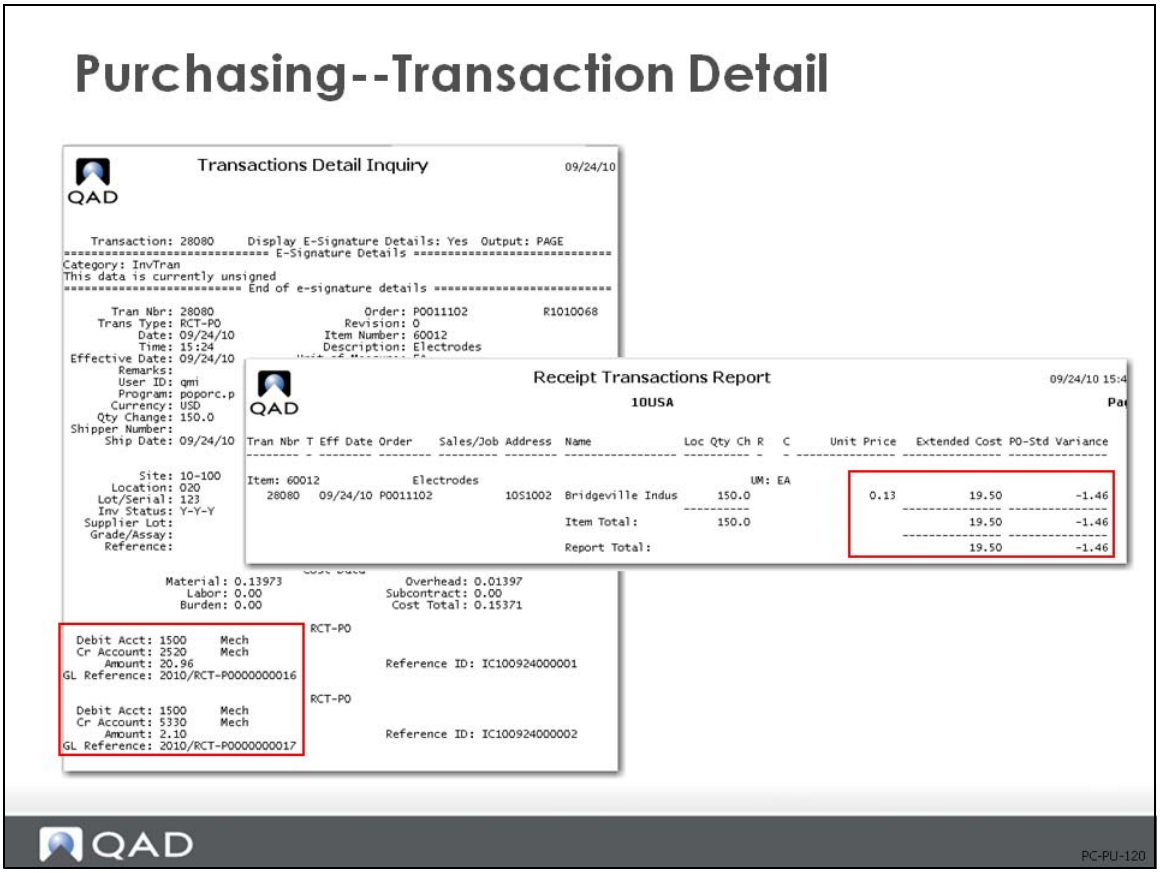


The following example illustrates the sequence of functions used and the accounts affected when purchasing and receiving items.

Example A purchase order is issued for 150 electrodes (item 60012) at 0.13 each using Purchase Order Maintenance (5.7).

- The total standard cost for this item is material 0.13973 + overhead 0.01397 = 0.15371 as shown in Item Cost Maintenance (1.4.9).
- Because the PO unit cost is different than the standard GL cost, it will generate a favorable Purchase Price Variance upon PO receipt.
- This is a rate variance because the PO price is different than the GL standard.
- If the invoice price is difference from the PO price, an AP Rate variance will be generated.

Purchasing: Transactions Detail



You can review the transactions by using Transaction Detail Inquiry (3.21.1). The resulting account debits and credits are shown for each transaction. In this example, upon purchase order receipt (RCT-PO), the system:

- Receives the item into inventory at standard cost less overhead

  *Qty rec'd * (standard GL cost - overhead)*
  *150 * (0.15371 - 0.01397) = 20.96*

- Applies the overhead amount

  *Qty rec'd * Overhead*
  *150 * 0.01397 = 2.10*

- Calculates the Purchase Price Variance (PPV)

  *[PO Cost - (GL Cost - Overhead)] * PO Qty Received*
  *[0.13 - (0.15371 - 0.01397] * 150 = -1.4595*

The Purchase Price Variance (PPV) for any given transaction or range of transaction can be viewed using the Receipt Transaction Report (5.9.14).

- Negative result is a favorable variance because it is a reduction of an expense.
- Positive result is an unfavorable variance.

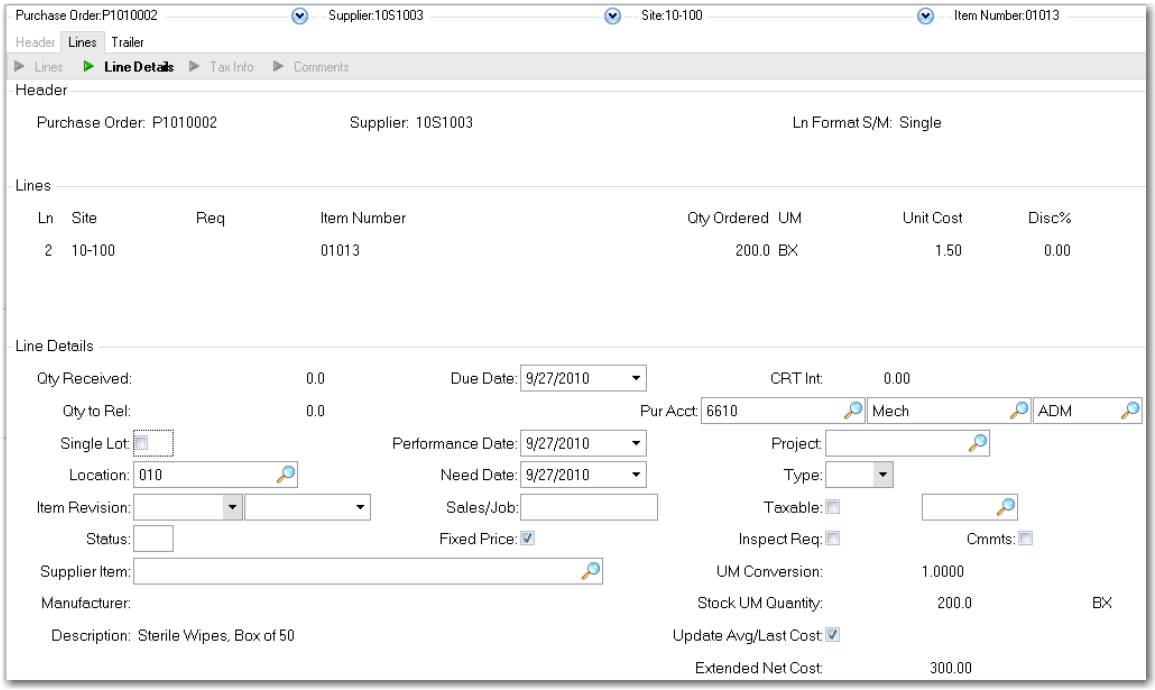
All of the resulting GL transactions are type IC (Inventory Control). When you review them in Transaction Detail Inquiry (3.21.1), you will see that the journal reference begins with IC, followed by the effective date of the transaction and a sequential number.

Exercise 2: Issue Purchase Order

1 Use Purchase Order Maintenance (5.7) to create a purchase order for these two items, 01012 and 01013, from supplier 10S1003. Let the system assign the next PO number. Use the lookup icon on the Supplier field to find Heron Surgical Supplies. Advance to the line item screen accepting the default values for all other fields.

Line 1; enter Site 10-100,use tab or enter to by-pass the requisition field, in the item number field enter 01012, in the quantity field enter 100.

Cycle through the screens until you return to line items screen, then, enter the 01013 for a quantity of 200. Note that the system has brought up the GL standard cost for both items. However for the 01013 you have a recent e-mail from the supplier saying the price has gone up to 1.50 per box. Change the unit cost to 1.50. Your PO line 2 should look like this: note that the Update Avg/Last Cost field is checked.

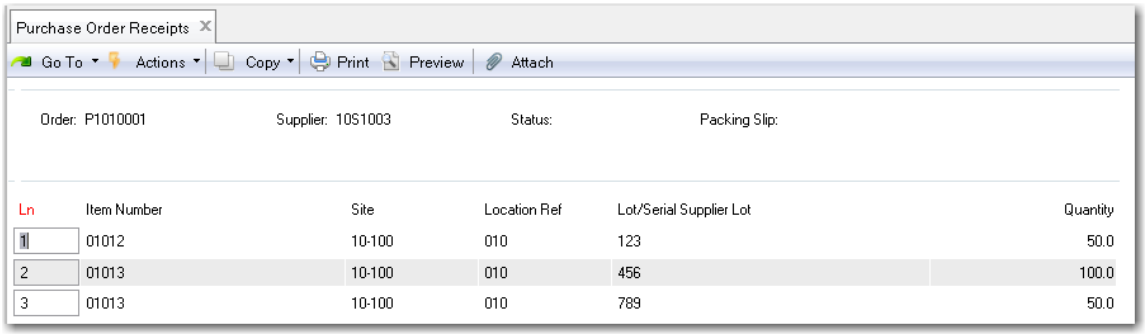


If you thought the new cost of 1.50 for item 01013 was a one time event or aberration, you could uncheck the line item Update Avg/Last Cost field and the system would not update the current cost based on the PO and line item.

The Quality Assurance Lab has called and asked to buy 50 boxes of the sterile wipes as they use them for testing and cleaning purposes. Add a third line item for 50 of the 01013 at the cost of 1.50 but in the Type field make these Type M, memo items. This will charge them to an expense account not inventory.

Complete the PO through the trailer and note the total PO cost of 625.00.

2 Use Purchase Order Receipts (5.13.1) to receive one half the order quantity of each of line one and two and all of line three. As these are lot controlled items you will need to add a lot number to the receiving inventory transaction. The example uses Lot 123 for line one and 456 for line two and 789 for line three. Your Purchase Receipts screen should look like this.



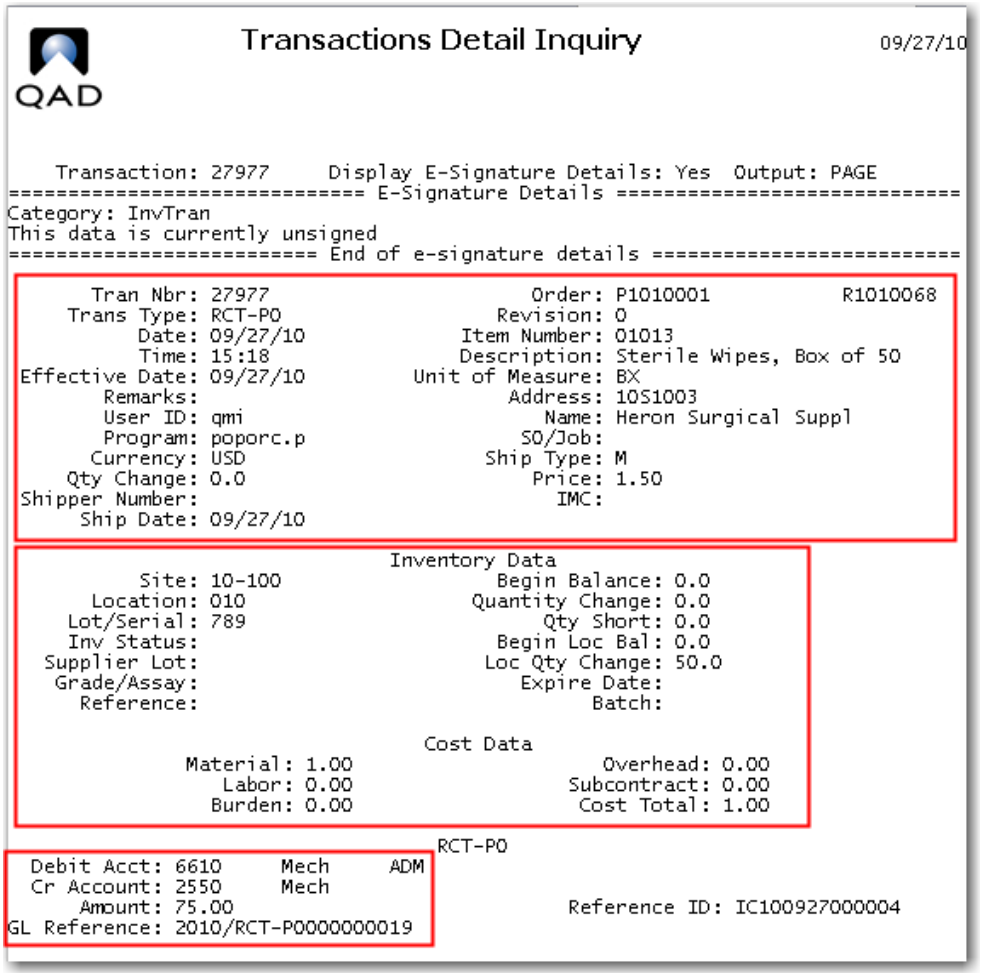
Click Is All Information correct Yes to complete the transaction.

3 Use Transaction Detail Inquiry (3.21.1) to review the last three transactions. The display comes up on the last transaction processed. Use the scroll arrows to move to the previous transactions. The last transaction is the receipt of the 50, 01013 memo items.

The top frame of the transaction detail displays all relevant data about the transaction. Its type, RCT-PO, receipt - purchase order; the PO number. It shows the date, time and user ID of the person making the transaction and the effective date of the transaction. It shows the item number and description of the subject of the transaction, the address code and name of the supplier of the goods, and the PO price of the item and the currency code the transaction has been made in.

The second frame displays all relevant inventory data; the site and location where the goods were received; the lot/serial number assigned, and the location quantity change. Had the information been available and needing to be recorded the inventory record can also maintain, the inventory status code of the material in this location, the supplier lot number, grade or assay codes, expiration date, batch number and a general purpose reference field.

The GL Standard cost data is displayed in the five cost elements and a total. The bottom set of data show the specific GL accounts that have been debited and credited what amounts to record this transaction, and the GL reference in case the transaction needs to be found in the general ledger.



```
QAD                    Transactions Detail Inquiry                    09/27/10

   Transaction: 27977     Display E-Signature Details: Yes  Output: PAGE
============================== E-Signature Details ==============================
Category: InvTran
This data is currently unsigned
========================== End of e-signature details ==========================

      Tran Nbr: 27977                      Order: P1010001          R1010068
    Trans Type: RCT-PO                   Revision: 0
          Date: 09/27/10              Item Number: 01013
          Time: 15:18                 Description: Sterile Wipes, Box of 50
Effective Date: 09/27/10          Unit of Measure: BX
       Remarks:                           Address: 10S1003
       User ID: qmi                          Name: Heron Surgical Suppl
       Program: poporc.p                   SO/Job:
      Currency: USD                     Ship Type: M
    Qty Change: 0.0                        Price: 1.50
Shipper Number:                              IMC:
     Ship Date: 09/27/10

                                Inventory Data
          Site: 10-100                  Begin Balance: 0.0
      Location: 010                   Quantity Change: 0.0
    Lot/Serial: 789                         Qty Short: 0.0
    Inv Status:                       Begin Loc Bal: 0.0
  Supplier Lot:                       Loc Qty Change: 50.0
   Grade/Assay:                          Expire Date:
     Reference:                                Batch:

                                  Cost Data
              Material: 1.00                    Overhead: 0.00
                 Labor: 0.00                  Subcontract: 0.00
                Burden: 0.00                   Cost Total: 1.00

                                    RCT-PO
  Debit Acct: 6610      Mech      ADM
  Cr Account: 2550      Mech
      Amount: 75.00                        Reference ID: IC100927000004
GL Reference: 2010/RCT-PO0000000019
```

In this case the system has debited the Purchases account (6610) and credited the Expense Item Receipts account (2550), 75.00 the total cost of 50 units at 1.50 each. You have selected not to report variances for memo items.

The first previous transaction is the partial receipt of 100 of the 01013, looking only at the account data:

```
                                Cost Data
             Material: 1.00                      Overhead: 0.00
                Labor: 0.00                    Subcontract: 0.00
              Burden: 0.00                      Cost Total: 1.00

                                RCT-PO
  Debit Acct: 1500     Mech
  Cr Account: 2520     Mech
      Amount: 100.00                        Reference ID: IC100927000002
GL Reference: 2010/RCT-P0000000017

                                RCT-PO
  Debit Acct: 6710     Mech     ADM
  Cr Account: 2520     Mech
      Amount: 50.00                         Reference ID: IC100927000003
GL Reference: 2010/RCT-P0000000018
```

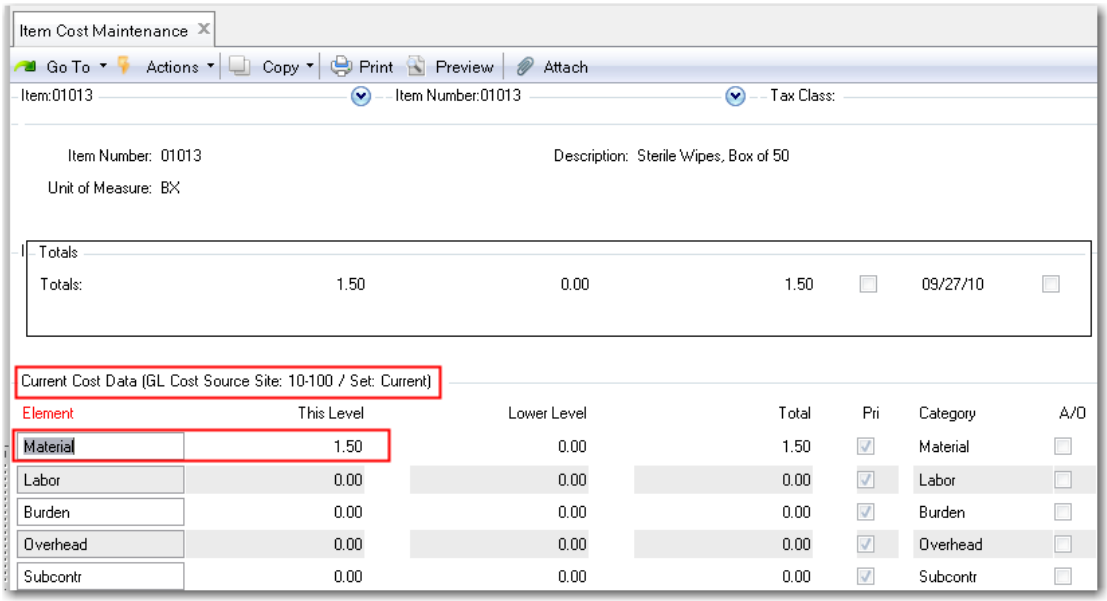
Here the system has debited Inventory (1500) and credited PO Receipts (2520) the 100.00 GL Standard cost. And has debited PO variance (6710) and credited PO Receipts (2550) 50.00 the difference between the PO cost and the GL cost. The two credits to PO Receipts total the amount to be invoice by the supplier, 150.00.

The second previous transaction is the receipt of the 50 each 01012. As this transaction is at standard there is just the debit to inventory and the credit to PO Receipts.

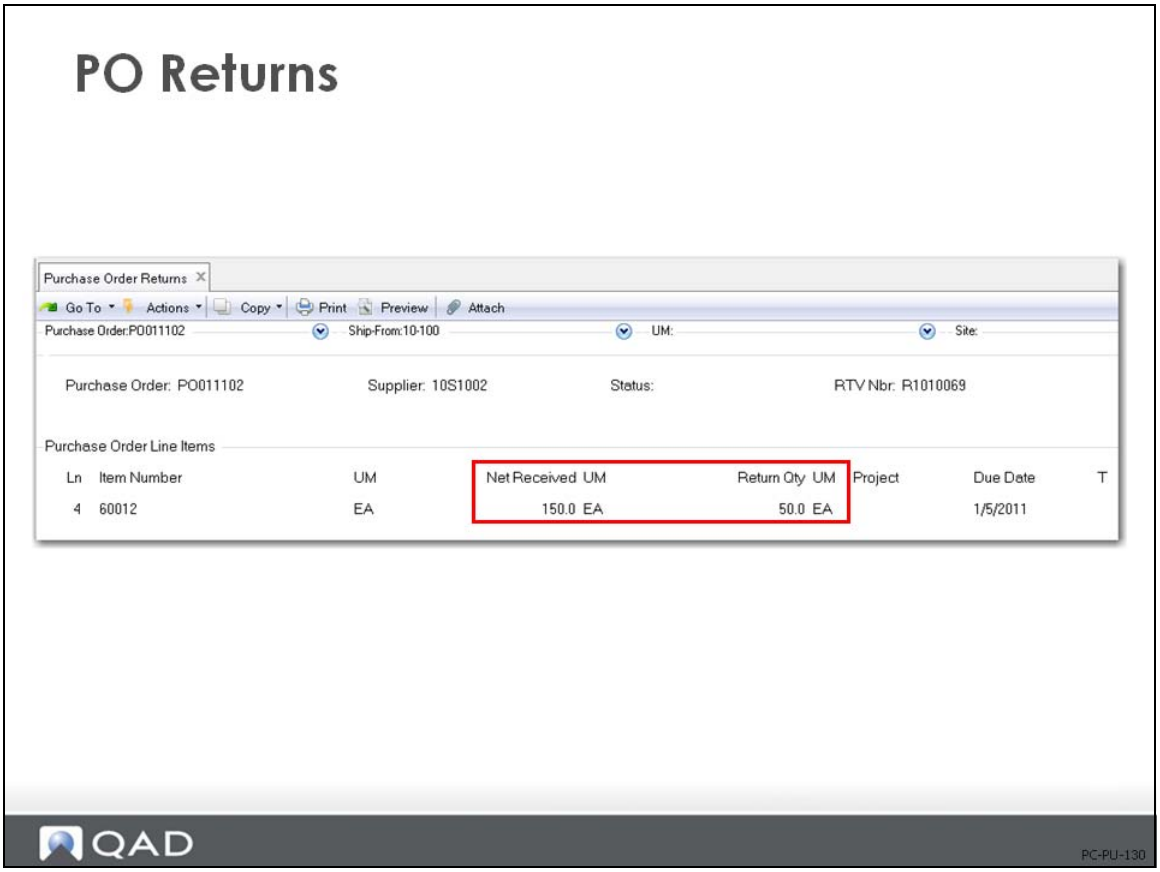
```
                                Cost Data
             Material: 2.50                      Overhead: 0.00
                Labor: 0.00                    Subcontract: 0.00
              Burden: 0.00                      Cost Total: 2.50

                                RCT-PO
  Debit Acct: 1500     Mech
  Cr Account: 2520     Mech
      Amount: 125.00                        Reference ID: IC100927000001
GL Reference: 2010/RCT-P0000000016
```

Review the Item Master Cost (1.4.9) to see that the Current Cost has been updated to 1.50.


Item Cost Maintenance
Go To
Actions
Copy
Print
Preview
Attach
Item:01013
Item Number:01013
Tax Class:
Item Number: 01013
Description: Sterile Wipes, Box of 50
Unit of Measure: BX
Totals
Totals: 1.50 0.00 1.50 09/27/10
Current Cost Data (GL Cost Source Site: 10-100 / Set: Current)
Element This Level Lower Level Total Pri Category A/O
Material 1.50 0.00 1.50 Material
Labor 0.00 0.00 0.00 Labor
Burden 0.00 0.00 0.00 Burden
Overhead 0.00 0.00 0.00 Overhead
Subcontr 0.00 0.00 0.00 Subcontr

PO Returns

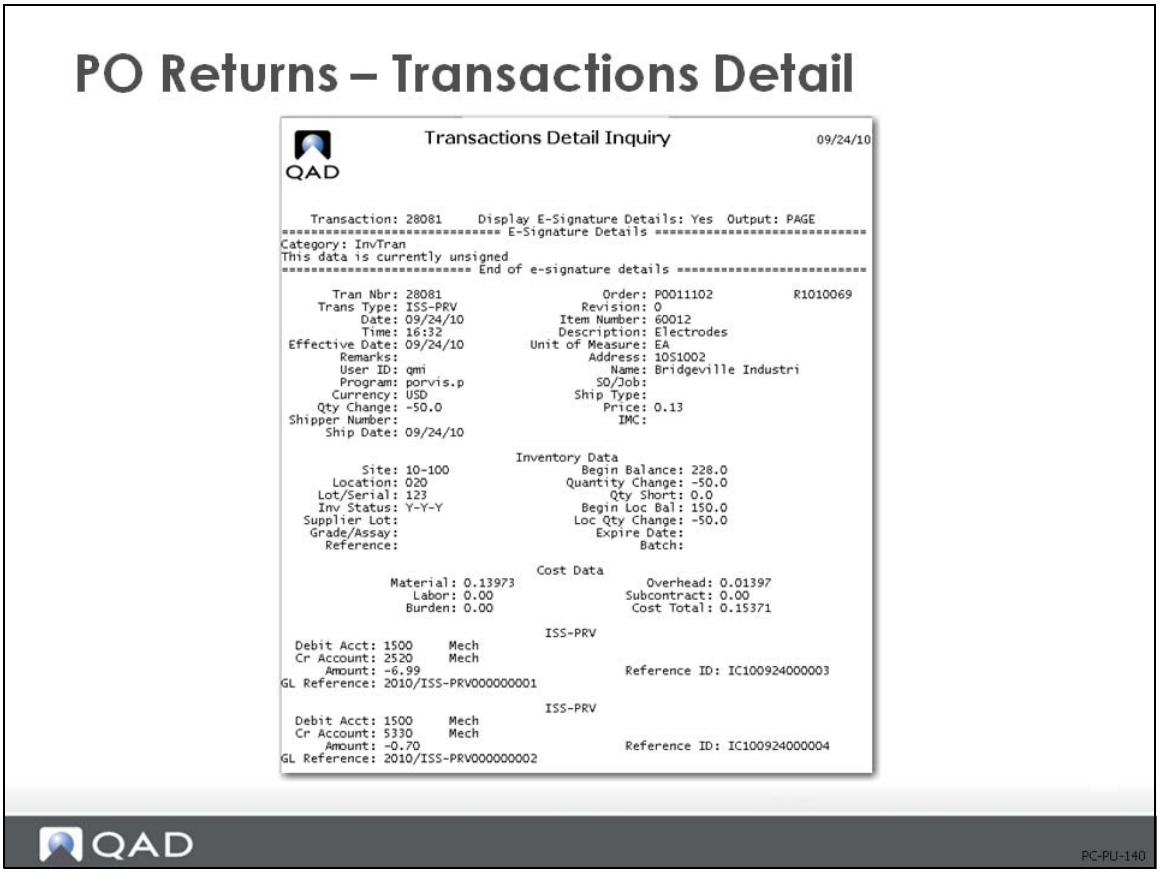


Returns to suppliers are processed in Purchase Order Returns (5.13.7). The purchase order does not have to be open but must exist in the database for a return to be processed. The return transaction reverses the inventory and GL effects of the receipt, if any, and can optionally reopen the PO or PO line.

If the purchase return transaction is checked Return to Replace, a line item for the replacement quantity is opened. If the return to replace box is left unchecked the system reverses the receipt transactions.

In Purchase Receipt Inquiry (5.13.3), returns are indicated with an “R” and a negative quantity

PO Returns: Transactions Detail



The calculations and GL entries for PO returns are listed below.

- ISS-PRV (PO Return to Vendor)

  DR Inventory with a negative

  CR PO Receipts with a positive

  *Qty Ret'd * [(Std Cost - Overhead) * -1]*
  *50 * (0.15371 - 0.01397) * -1] = - 6.99*

  DR Inventory

  CR Overhead Applied

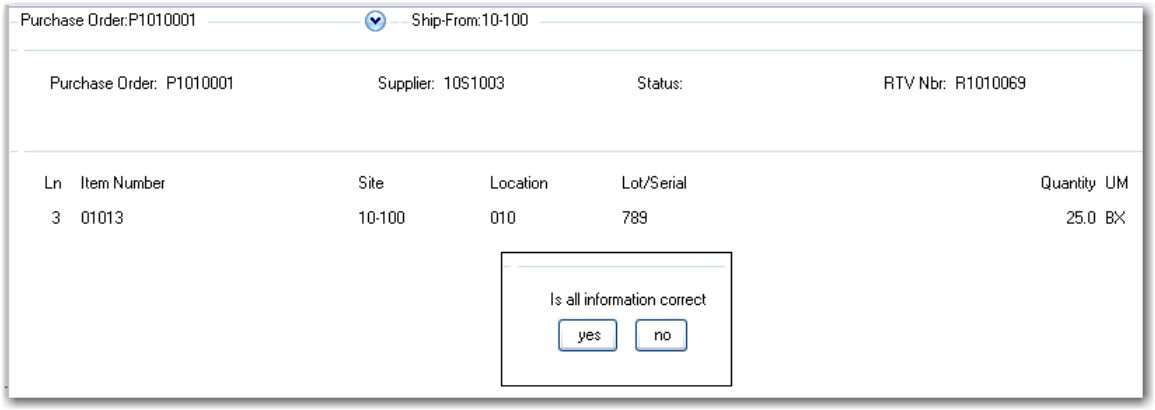
  *Qty Ret'd * (Overhead * -1)*
  *50 * (0.101397x -1) = - 0.70*

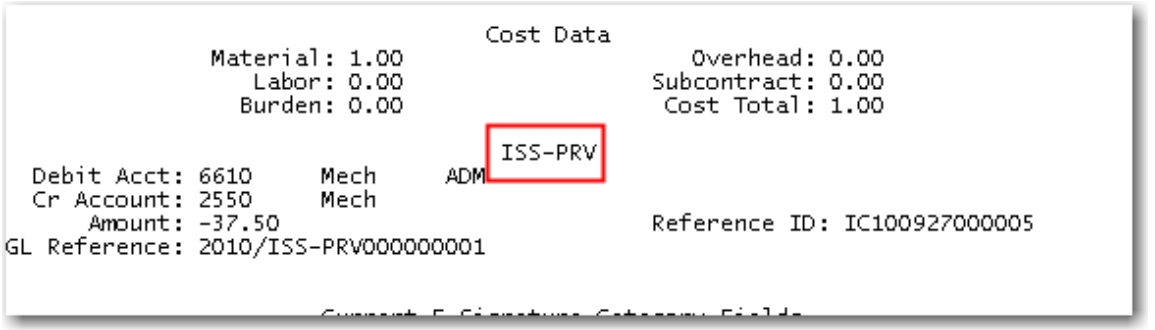
Exercise 3: PO Returns

After receiving their 50 boxes of 50 each sterile wipes the QA Lab has decided that is more than a lifetime supply and want to return 25 boxes. The vendor agrees to accept the return for credit.

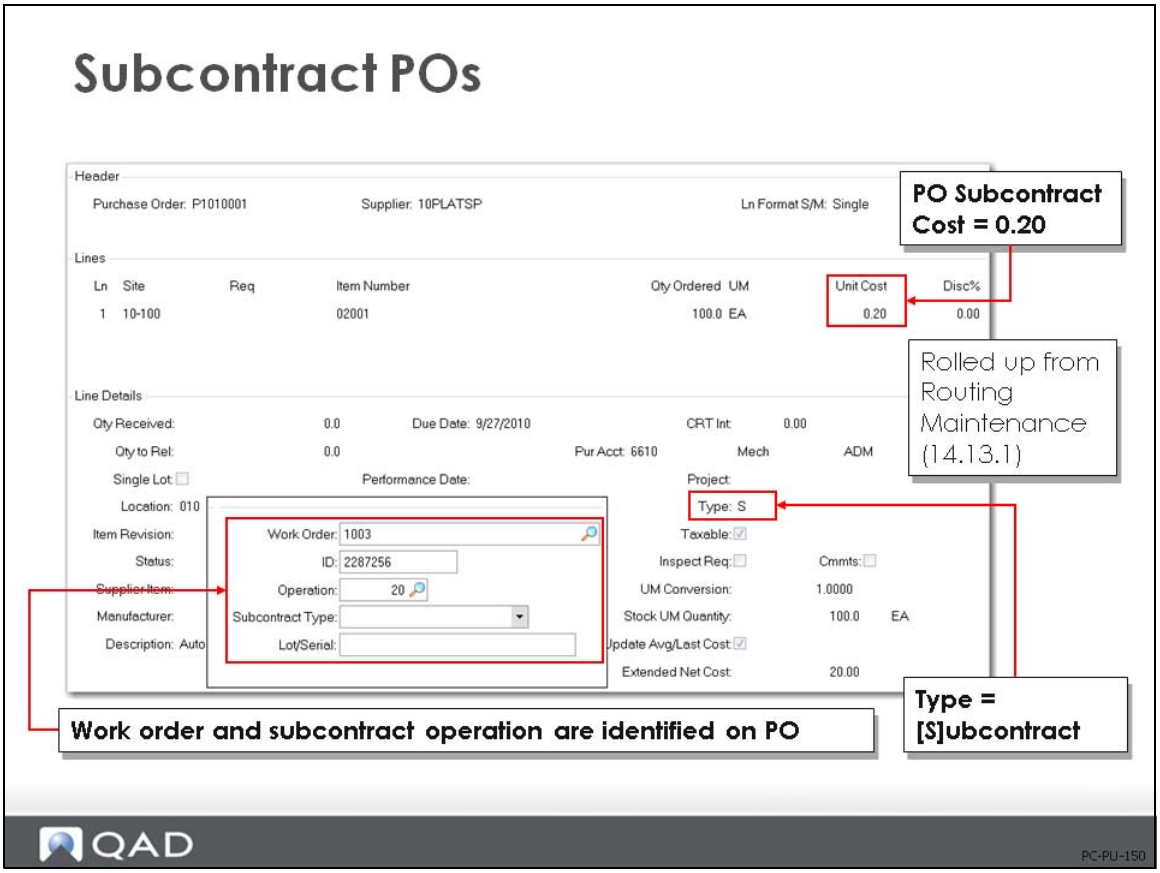
1 Use Purchase Order Returns (5.13.7) to return 25 boxes of the 01013. Enter the original PO number. On the header note the check boxes for Return All and Return to Replace; leave these both unchecked. In the case where you are returning an entire order, checking return all will prefill the return transaction with all the line items on the original PO.

When prompted to Reopen PO line click Yes. Advance to the line items, enter line 3 for 25 and add your lot number. If the notes window appears click Back. When prompted for supplier performance data enter Category 03 and Event ISO Cert. (The system has been set up with restrictions in the area of supplier performance, use these codes to ensure your transaction processes). Your transaction should look like this. Complete the transaction.





Subcontract POs



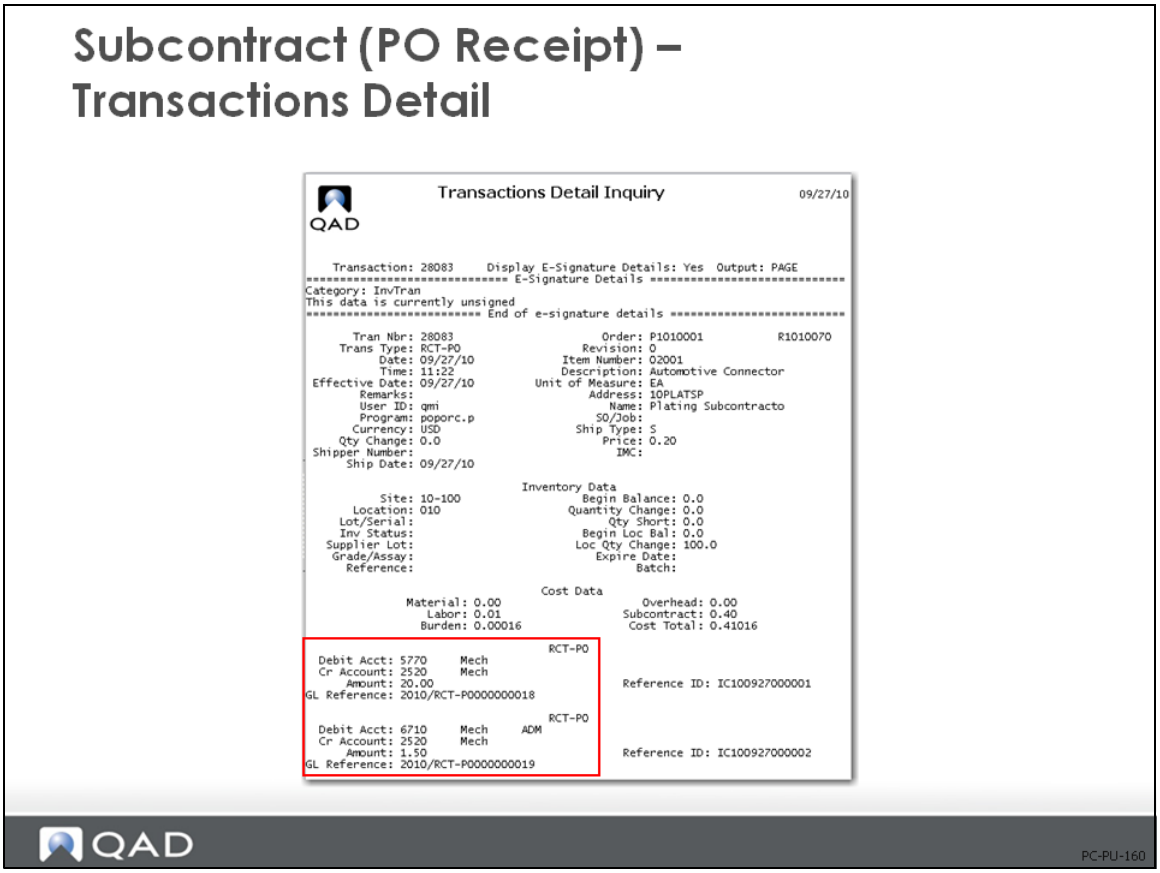
Subcontract POs reference a valid item number, but rather than receiving the item into inventory, they are received into manufacturing as a cost of production. If no work order number is specified, the process stops there. The entire PO cost is reported as a cost of production and accrued. However, if the PO references a valid work order and operation, additional transactions are generated to issue the cost to WIP and to calculate variances, if any.

In this example, the 02001 connector has an outside operation for plating at a quoted price of 0.20 per unit. A purchase order is released for 100 pieces at 0.20 each (extended cost 20.00). The purchase order is linked to work order 1003 at operation 20.

On this PO the trailer has added a tax of 1.50, this could be a mistake as it's likely that this operation is not taxable.

Note Set up Supplier Item Maintenance (1.19) to automate the pricing of subcontract purchasing and avoid mistakes in pricing.

Subcontract (PO Receipt): Transactions Detail

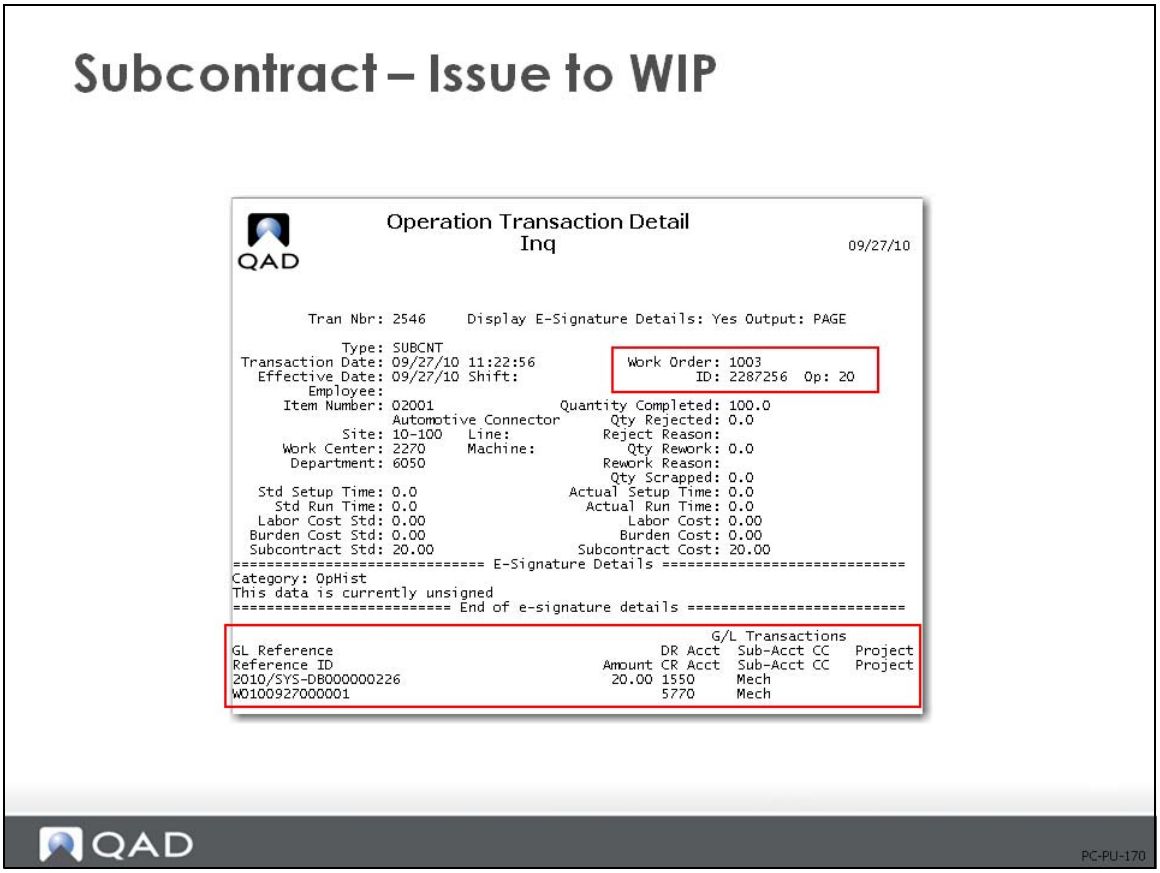


The PO Receipts transaction uses the PO unit cost as the GL amount.

In this example, 20.00 has been debited to cost of production (5770), credited to PO receipts (2520) and 1.50 has been debited to PO variance (6710) and credited to PO receipts (2520). In this case the taxable amount (if the transaction is taxable) should have been allocated to the line item to prevent the variance.

A subcontract rate variance accounts for any difference between the PO unit cost and the standard unit cost for this operation as recorded on the Work Order Routing (16.13.13).

Subcontract Transactions: Issue to WIP

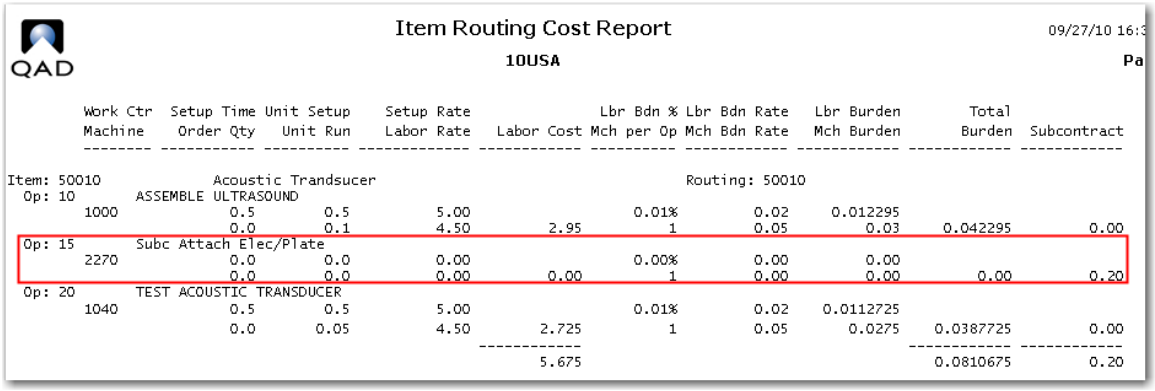


In this transaction the 20.00 cost of the subcontract operation has been debited to WIP (1550) for work order 1003 at operation 20, and credited to cost of production (5770).

The final transactions are actually work order transactions. As such, they create GL transactions of type WO with a description of SUB [op number] where [op number] is the work order operation.

Exercise 4: Subcontract PO

To demonstrate the Subcontract PO you will create a work order for item 50010, Acoustic Transducer. This item has three operations; operation 15 is a subcontract operation with a standard cost of 0.20 per piece as entered in Routing Maintenance.



Item Routing Cost Report

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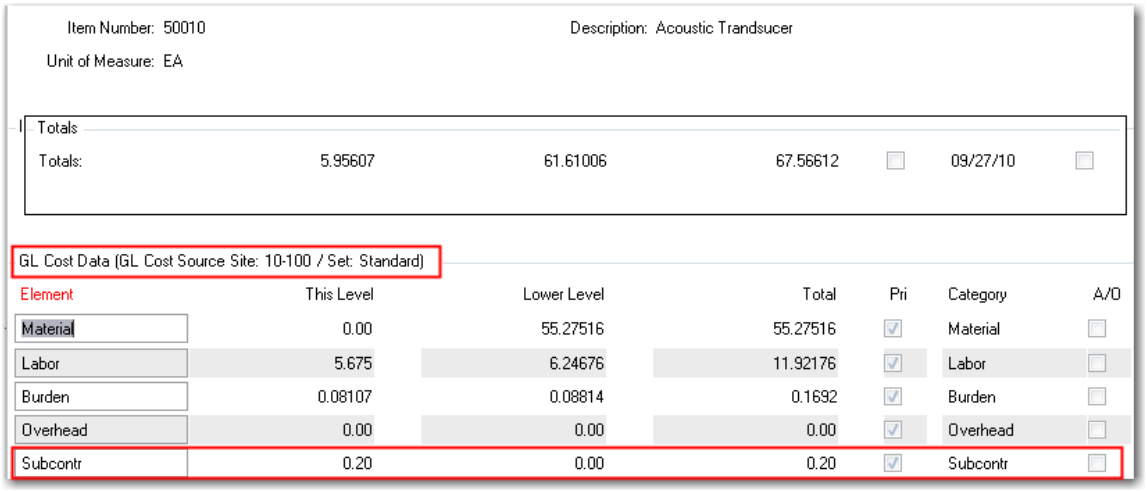
Work Ctr / Machine	Setup Time / Order Qty	Unit Setup / Unit Run	Setup Rate / Labor Rate	Labor Cost	Lbr Bdn % / Mch per Op	Lbr Bdn Rate / Mch Bdn Rate	Lbr Burden / Mch Burden	Total Burden	Subcontract
Item: 50010 Acoustic Transducer						Routing: 50010			
Op: 10 ASSEMBLE ULTRASOUND									
1000	0.5	0.5	5.00		0.01%	0.02	0.012295		
	0.0	0.1	4.50	2.95	1	0.05	0.03	0.042295	0.00
Op: 15 Subc Attach Elec/Plate									
2270	0.0	0.0	0.00		0.00%	0.00	0.00		
	0.0	0.0	0.00	0.00	1	0.00	0.00	0.00	0.20
Op: 20 TEST ACOUSTIC TRANSDUCER									
1040	0.5	0.5	5.00		0.01%	0.02	0.0112725		
	0.0	0.05	4.50	2.725	1	0.05	0.0275	0.0387725	0.00
				5.675				0.0810675	0.20

1 However, if you review Item Cost (1.4.9) there is no GL or Current cost for this operation in the Item Master Cost Maintenance. This indicates a routing cost roll up had not been done. Use Routing Cost Roll Up (14.13.13) for item 50010. Note the roll up defaults to the Current Cost set. Look at Item Cost (1.4.9) and you should now have a current cost of 0.20.

2 As all transactions are costed at GL Standard you need the cost in that data set as well. You could do the roll up again for the GL set, or you could use Current Cost Move to GL (1.4.22), or you could add the 0.20 manually to the GL Cost set as Subcontract cost. Pick one.



Item Number: 50010 Description: Acoustic Trandsucer

Unit of Measure: EA

Totals

Totals:	5.95607	61.61006	67.56612	09/27/10

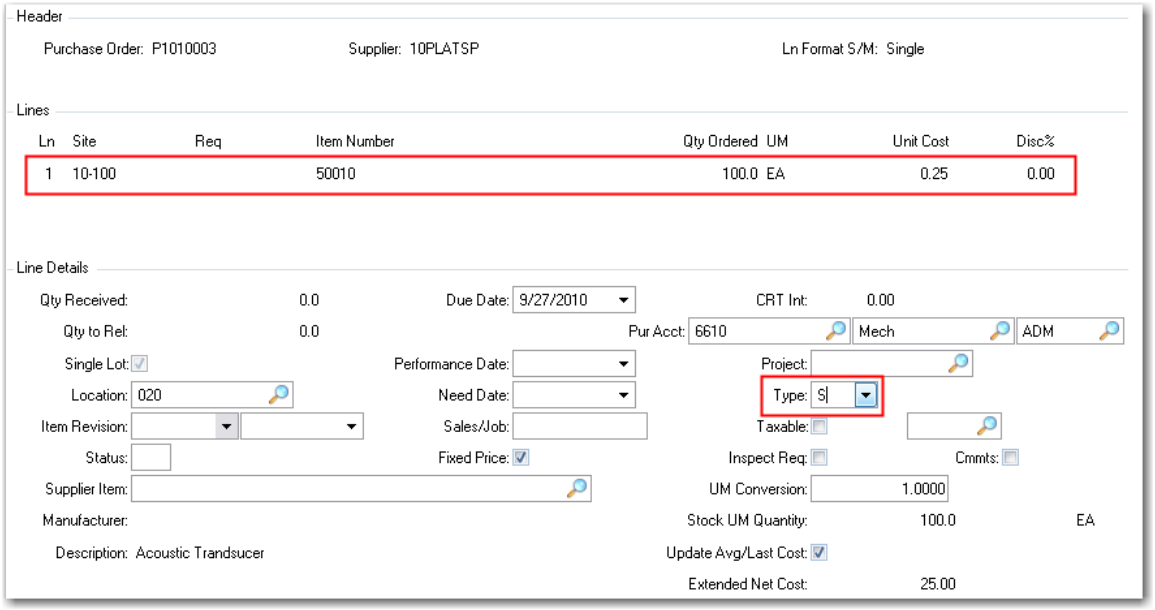
GL Cost Data (GL Cost Source Site: 10-100 / Set: Standard)

Element	This Level	Lower Level	Total	Pri	Category	A/O
Material	0.00	55.27516	55.27516	☑	Material	☐
Labor	5.675	6.24676	11.92176	☑	Labor	☐
Burden	0.08107	0.08814	0.1692	☑	Burden	☐
Overhead	0.00	0.00	0.00	☑	Overhead	☐
Subcontr	0.20	0.00	0.20	☑	Subcontr	☐

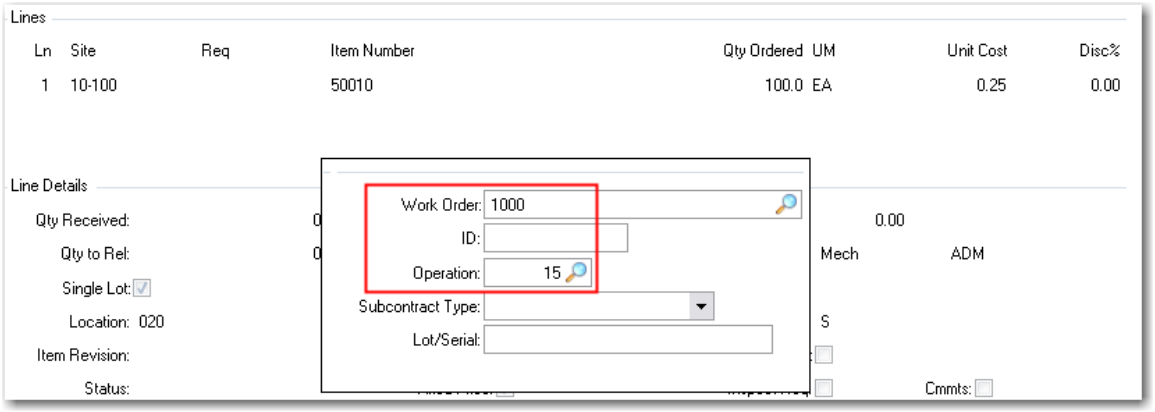
3 Use Work Order Maintenance (16.1) to create a work order for 100 of the 50010. Let the system assign the work order number and ID, just click enter, enter the item number and Site 10-100. Enter the quantity of 100 and change the Status code to R for released. Complete the order release accepting all other values at default. Note the order number.

4 Use Purchase Order Maintenance (5.7) to create a PO for the subcontract operation. Let the system assign the PO number. The supplier for plating is 10PLATSP, Plating Subcontractor-USA. Use the lookup icon to find it. Advance to the line items, for line one change the site to 10-100, enter the item number and the quantity of 100, and make the Unit Cost 0.25. This will create a subcontract price variance.

In the lower frame be sure to set the line item Type to S for subcontract. This tells the system how to handle the costs for this line item.

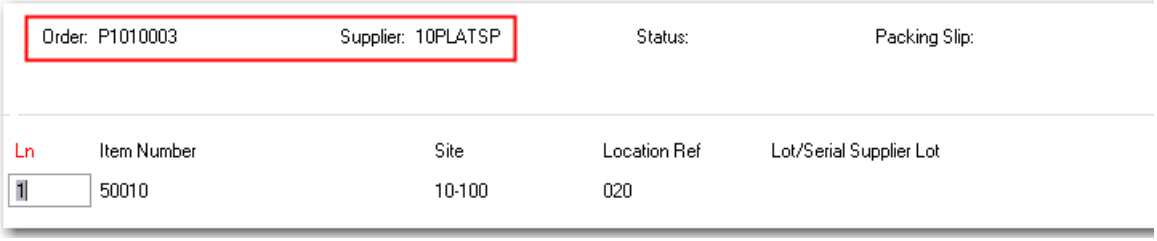


When the pop-up appears, enter the work order and operation numbers. The work order ID is required when using Advanced Repetitive. Details are covered in that cost course. Full details on the use of subcontract operations is in the Work Center and Routings course, and in the Advanced Repetitive course.

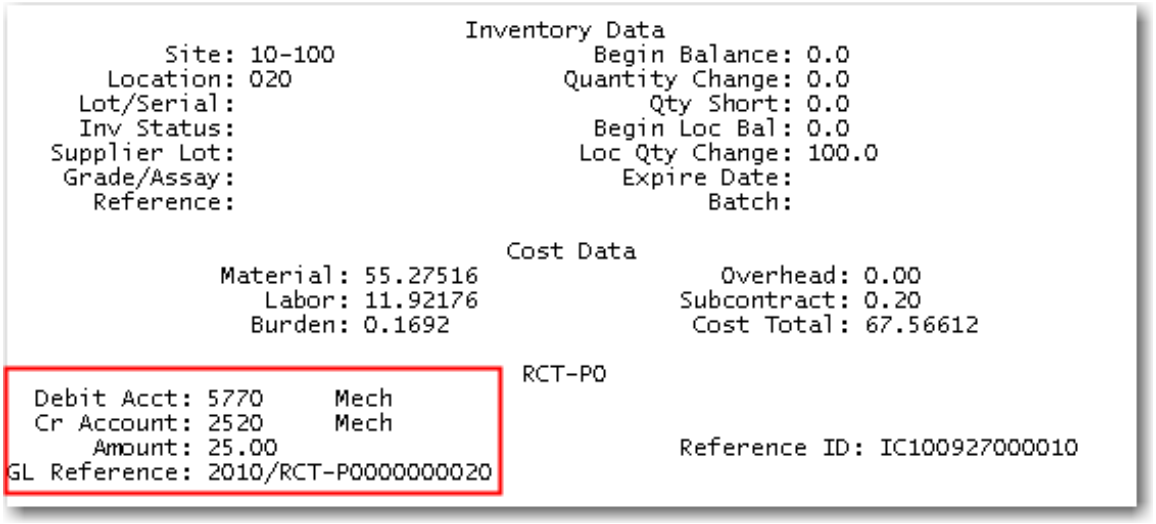


Complete the Purchase Order.

5 Receive the subcontract operation from the vendor. Use PO Receipts (5.13.1) to receive all 100 units.



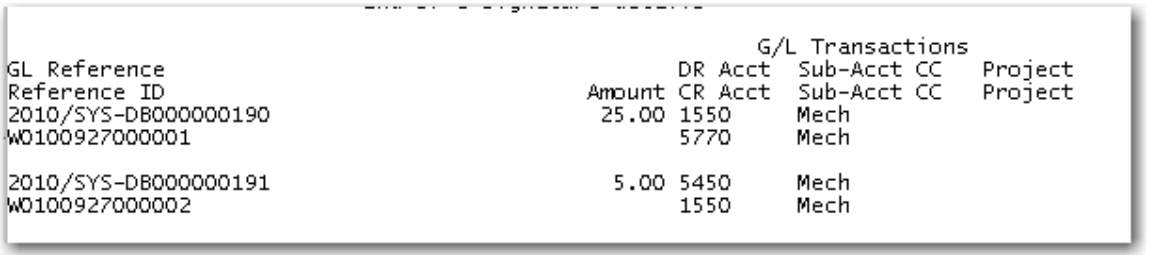
6 Use Transaction Detail Inquiry (3.21.1) to review the inventory transaction.



In the RCT-PO you see a debit to cost of production (5770) and a credit to PO receipts of the entire 25.00.

7 Review Operation Transaction Detail Inquiry (16.20.13.9), to see the work order transactions. Two transactions have been created by the system. The first transaction as displayed in the inquiry is the move from operation 20 (now complete) to operation 30. This transaction has no cost impact.

The first previous transaction is the WO issue of the subcontract line item.

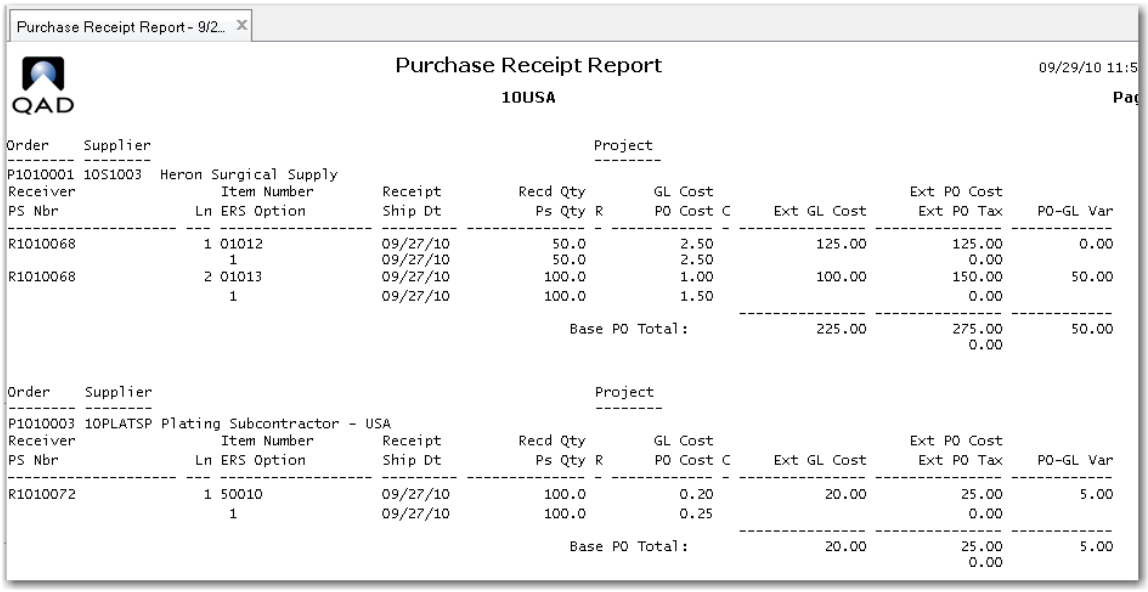


Here you see a debit to WIP (1550) and a credit to cost of production (5770) for 25.00 then a debit to subcontract rate variance (5450) and a credit to WIP (1550) of the 5.00 purchase price variance. The work order transactions remove the total amount from cost of production and moves it to WIP, then moves the variance amount from cost of production to Subcontract Variance. This is automatic because the PO had a link to a specific WO and Operation.

Exercise 5: Subcontract PO

1 To familiarize yourself with some of the information sources review these reports.

Purchase Receipt Report (5.13.5)



Purchase Receipt Report - 9/2...

Purchase Receipt Report

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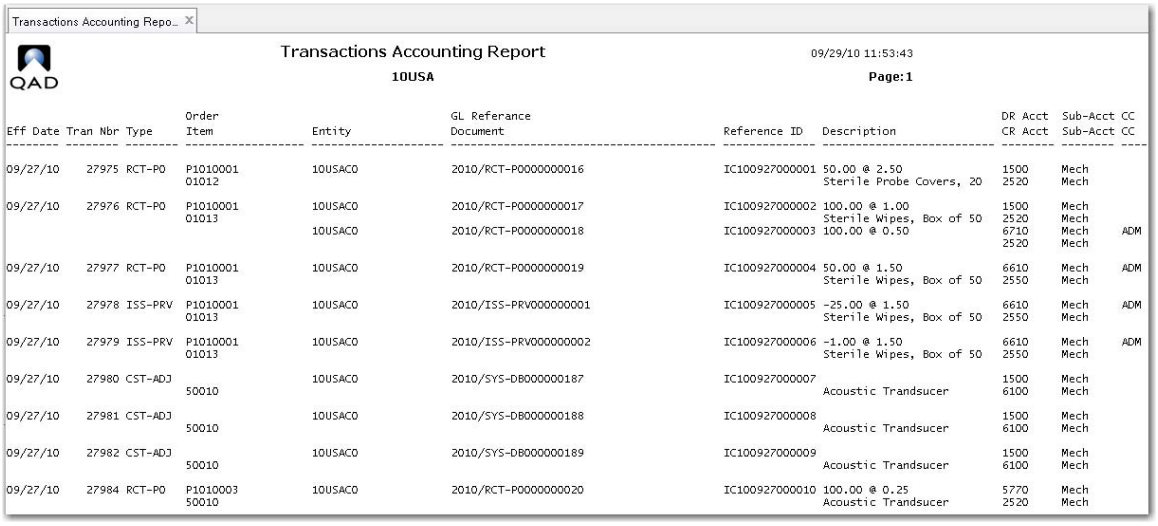
Order	Supplier										
P1010001	10S1003 Heron Surgical Supply										
Receiver		Item Number		Receipt	Recd Qty		GL Cost			Ext PO Cost	
PS Nbr	Ln	ERS Option		Ship Dt	Ps Qty	R	PO Cost	C	Ext GL Cost	Ext PO Tax	PO-GL Var
R1010068	1	01012		09/27/10	50.0		2.50		125.00	125.00	0.00
	1			09/27/10	50.0		2.50			0.00	
R1010068	2	01013		09/27/10	100.0		1.00		100.00	150.00	50.00
	1			09/27/10	100.0		1.50			0.00	
					Base PO Total:				225.00	275.00	50.00
										0.00	

Order	Supplier										
P1010003	10PLATSP Plating Subcontractor - USA										
Receiver		Item Number		Receipt	Recd Qty		GL Cost			Ext PO Cost	
PS Nbr	Ln	ERS Option		Ship Dt	Ps Qty	R	PO Cost	C	Ext GL Cost	Ext PO Tax	PO-GL Var
R1010072	1	50010		09/27/10	100.0		0.20		20.00	25.00	5.00
	1			09/27/10	100.0		0.25			0.00	
					Base PO Total:				20.00	25.00	5.00
										0.00	

Transactions Accounting Report (3.21.16)



Transactions Accounting Repo...

Transactions Accounting Report

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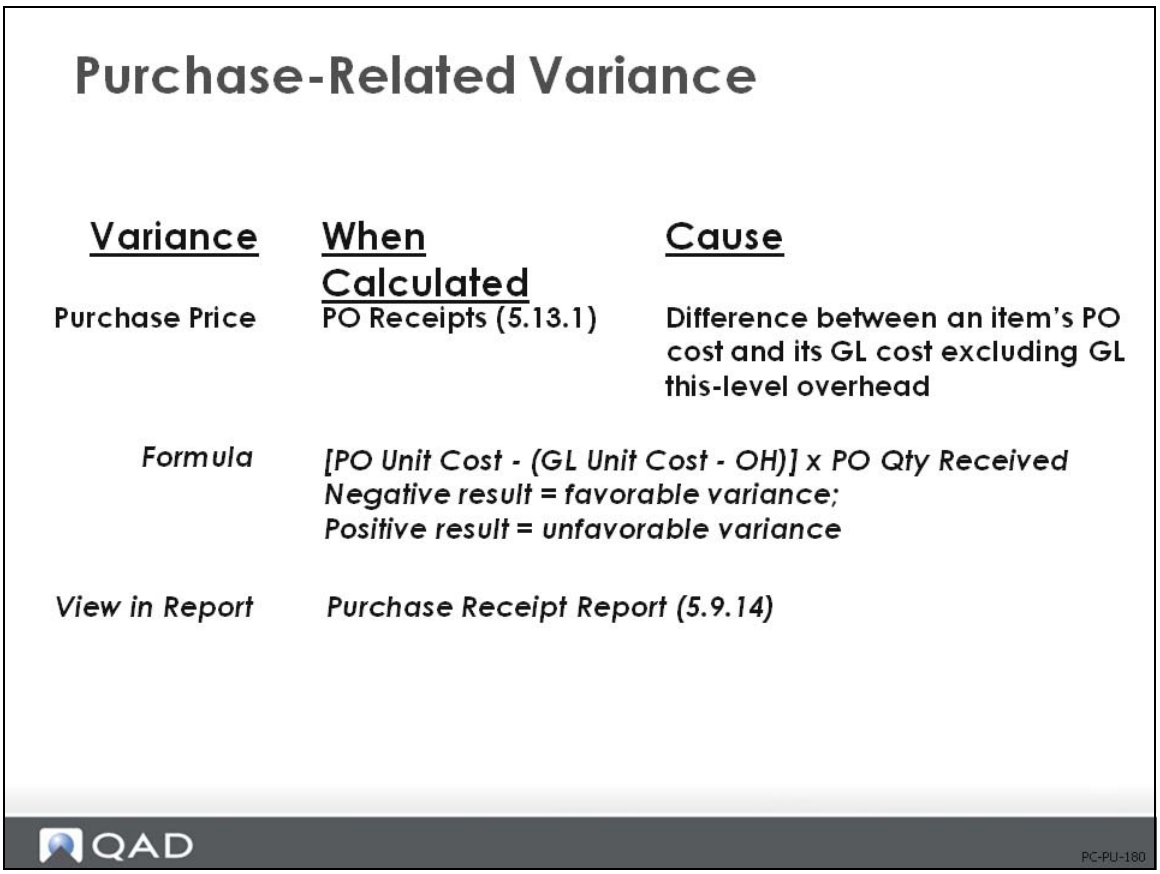
Eff Date	Tran Nbr	Type	Order Item	Entity	GL Referance Document	Reference ID	Description	DR Acct CR Acct	Sub-Acct CC Sub-Acct CC	
09/27/10	27975	RCT-PO	P1010001 01012	10USAC0	2010/RCT-P0000000016	IC100927000001	50.00 @ 2.50 Sterile Probe Covers, 20	1500 2520	Mech Mech	
09/27/10	27976	RCT-PO	P1010001 01013	10USAC0	2010/RCT-P0000000017	IC100927000002	100.00 @ 1.00 Sterile Wipes, Box of 50	1500 2520	Mech Mech	
				10USAC0	2010/RCT-P0000000018	IC100927000003	100.00 @ 0.50	6710 2520	Mech Mech	ADM
09/27/10	27977	RCT-PO	P1010001 01013	10USAC0	2010/RCT-P0000000019	IC100927000004	50.00 @ 1.50 Sterile Wipes, Box of 50	6610 2550	Mech Mech	ADM
09/27/10	27978	ISS-PRV	P1010001 01013	10USAC0	2010/ISS-PRV000000001	IC100927000005	-25.00 @ 1.50 Sterile Wipes, Box of 50	6610 2550	Mech Mech	ADM
09/27/10	27979	ISS-PRV	P1010001 01013	10USAC0	2010/ISS-PRV000000002	IC100927000006	-1.00 @ 1.50 Sterile Wipes, Box of 50	6610 2550	Mech Mech	ADM
09/27/10	27980	CST-ADJ	50010	10USAC0	2010/SYS-DB000000187	IC100927000007	Acoustic Trandsucer	1500 6100	Mech Mech	
09/27/10	27981	CST-ADJ	50010	10USAC0	2010/SYS-DB000000188	IC100927000008	Acoustic Trandsucer	1500 6100	Mech Mech	
09/27/10	27982	CST-ADJ	50010	10USAC0	2010/SYS-DB000000189	IC100927000009	Acoustic Trandsucer	1500 6100	Mech Mech	
09/27/10	27984	RCT-PO	P1010003 50010	10USAC0	2010/RCT-P0000000020	IC100927000010	100.00 @ 0.25 Acoustic Trandsucer	5770 2520	Mech Mech	

Purchase-Related Variance



Purchase Price Variance

Upon PO receipt, a variance is calculated that is later reflected in AP reporting. Purchase price variance (PPV) is calculated when the item's PO unit cost does not match its standard cost (GL unit cost).

The formula for PPV is:

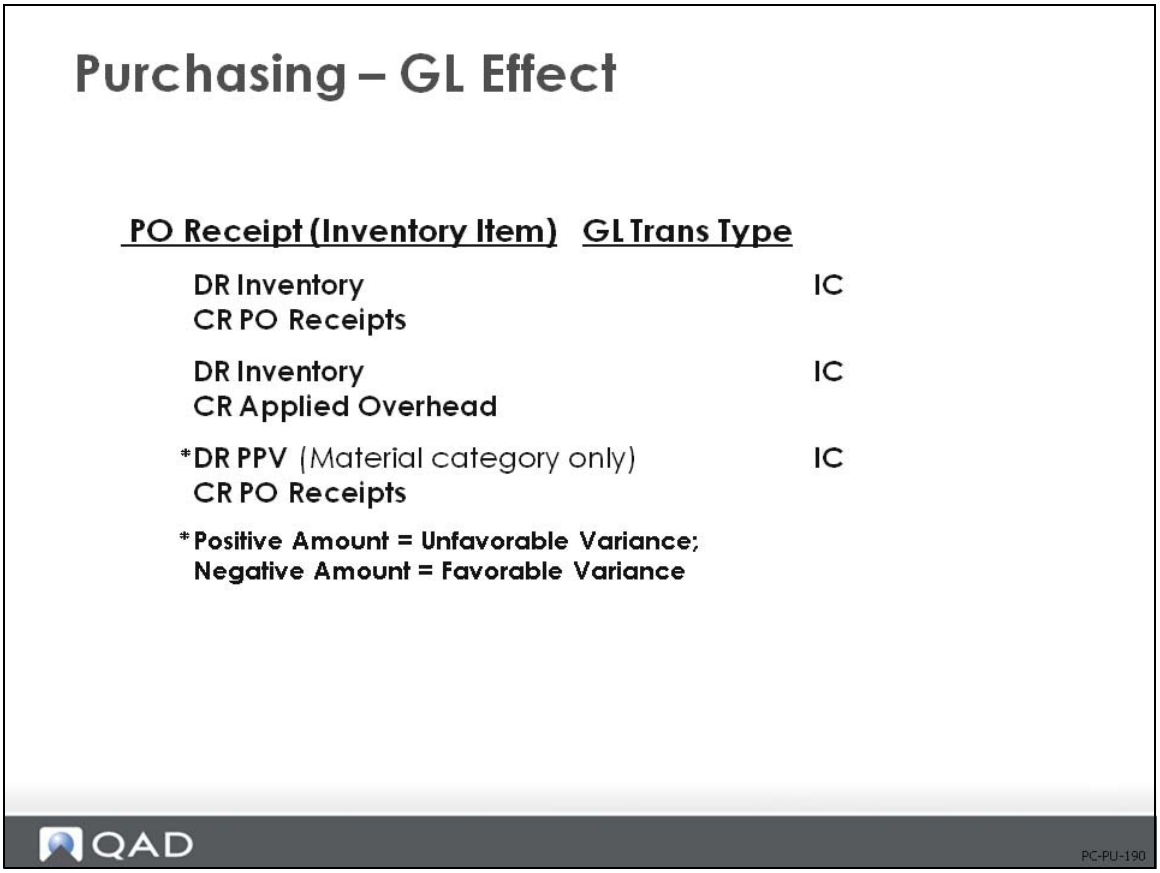
*[PO Unit Cost - (GL Unit Cost - Overhead)] * PO Quantity Received*

Negative result = favorable variance; positive result = unfavorable variance

GL Effects

At PO Receipt (5.13.1), the system debits Inventory for the item's standard GL cost minus overhead and credits PO Receipts for the item's PO cost. Because the two costs are different, QAD Enterprise Applications creates a balancing entry for the PPV account.

Purchasing: GL Effect



- The default general ledger entry:

  Debits Inventory

  Credits Applied Overhead

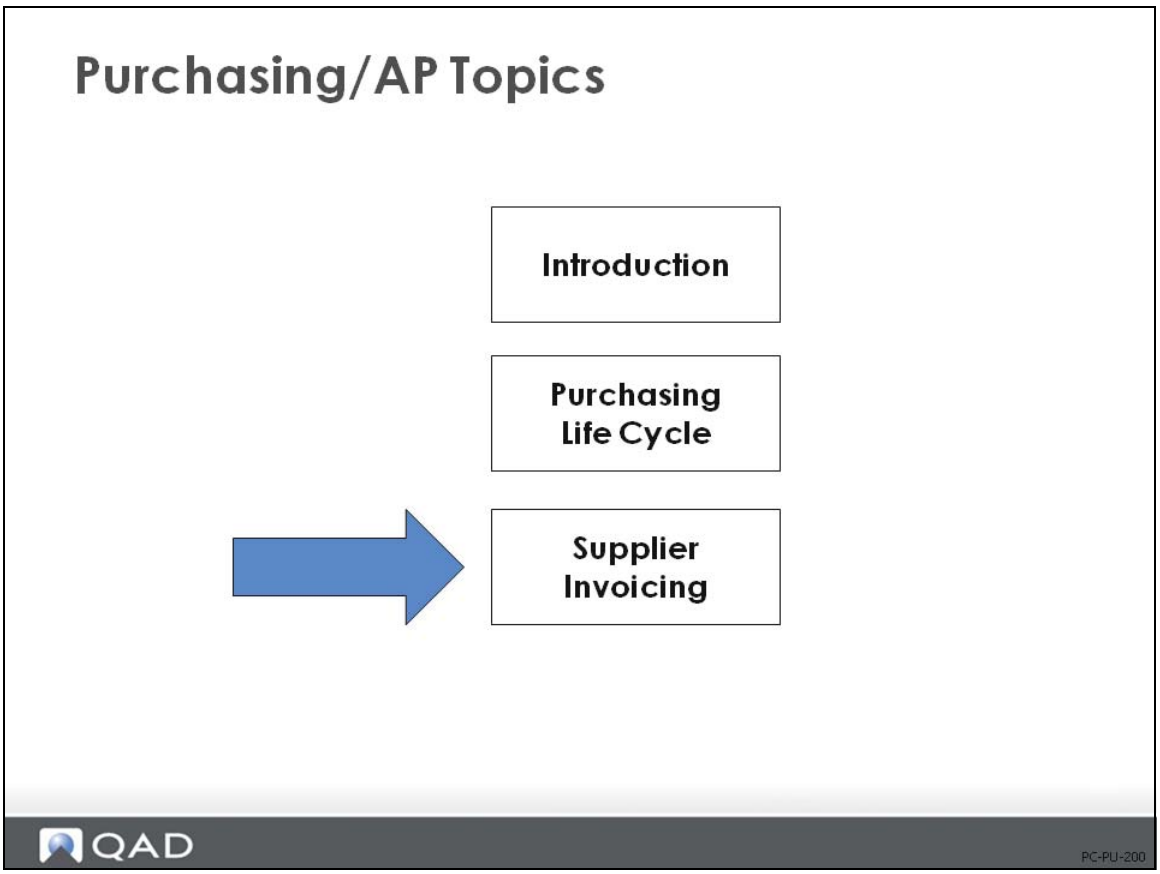
  Debits Purchase Price Variance

  Credits PO Receipts Accrual

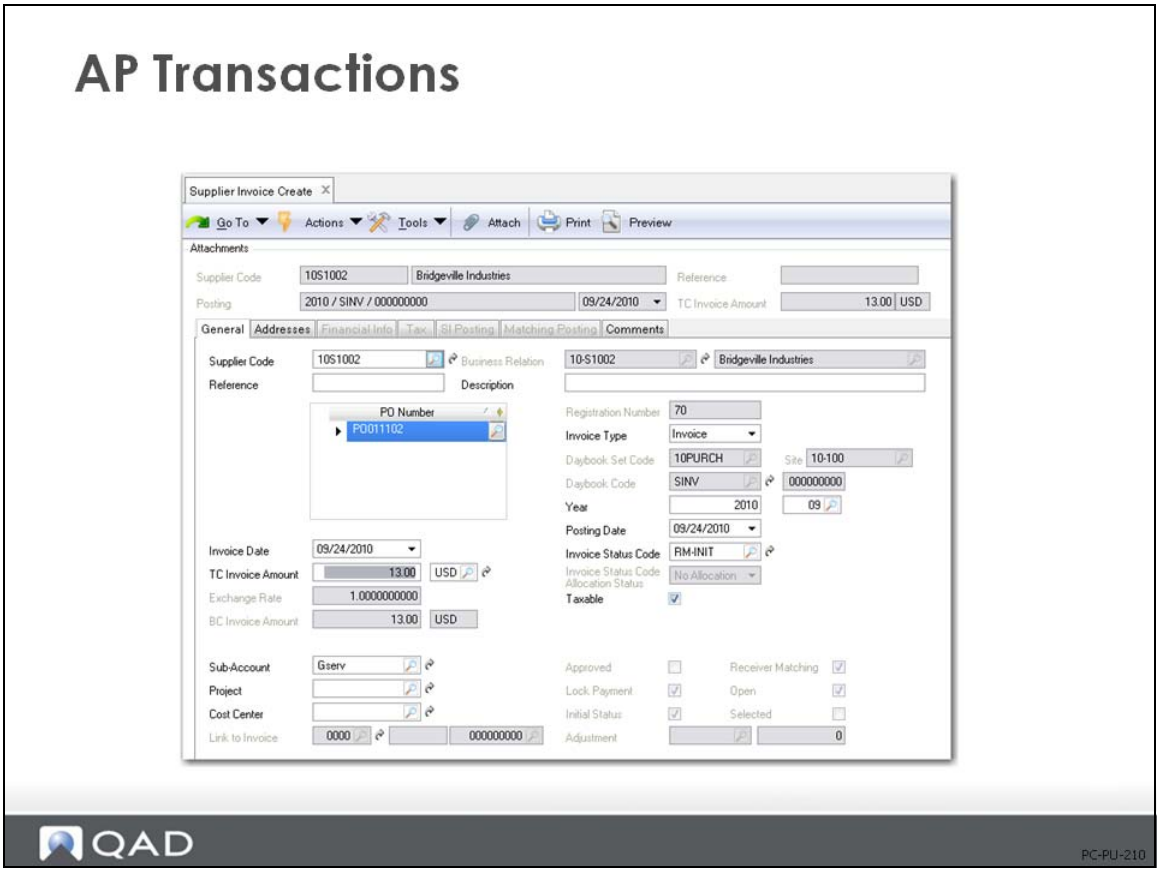
  Because this is the purchase of an inventory item, these accounts are accessed based on the product line of the purchased item-the Purchases account on the PO is not used.

When the Supplier Invoice is created (28.1.1.1), QAD Enterprise Applications calculates Accounts Payable rate and usage variances (and price variances due to exchange rate fluctuation). This is discussed in the next section.

Supplier Invoicing



Accounts Payable



The invoice from the supplier is entered into the system using Supplier Invoice Create (28.1.1.1). It is then approved and finally released for payment. Note: You can also use Initial Supplier Invoice Create (28.1.1.10). The system matches the purchase order quantity and price with the receiver quantity and price and the invoice quantity and price. Variances are calculated and the receivers are marked as closed. This process is commonly known as a three-way match.

Example of AP Transactions

To show the AP process, we will continue with the example given on Purchase Transactions.

Example The supplier has charged you $13.00 for 100 electrodes at 0.13 each. This is exactly correct since from the initial order of 150 you returned 50.

For demonstration purposes suppose the supplier had invoiced you for 90 electrodes at 0.15:

- Because the invoice quantity is less than the quantity actually received, this generates a favorable AP usage variance (negative amount)
- Because the invoice cost is higher than that on the PO, this generates an unfavorable AP rate variance (positive amount)
- The system also marks the invoice as not matching and the details need to be resolved before invoice approval.

When the supplier invoice is approved for payment, the system:

- Clears out the purchase accrual account (amount accrued at time of receipt)

  *Qty Received * PO Unit Cost*
  *Example:100 * 0.13 = 13.00 based on your original PO*

- Accounts for the difference between the PO unit cost and the price listed on the invoice (AP rate variance)

  *(Invoice Unit Cost - PO Unit Cost) * Invoice Qty*
  *Example: (0.15 - 0.13) * 90 = 1.80 based on our example of invoice not matching*

- Accounts for any difference between the quantity received and the quantity invoiced (AP usage variance)

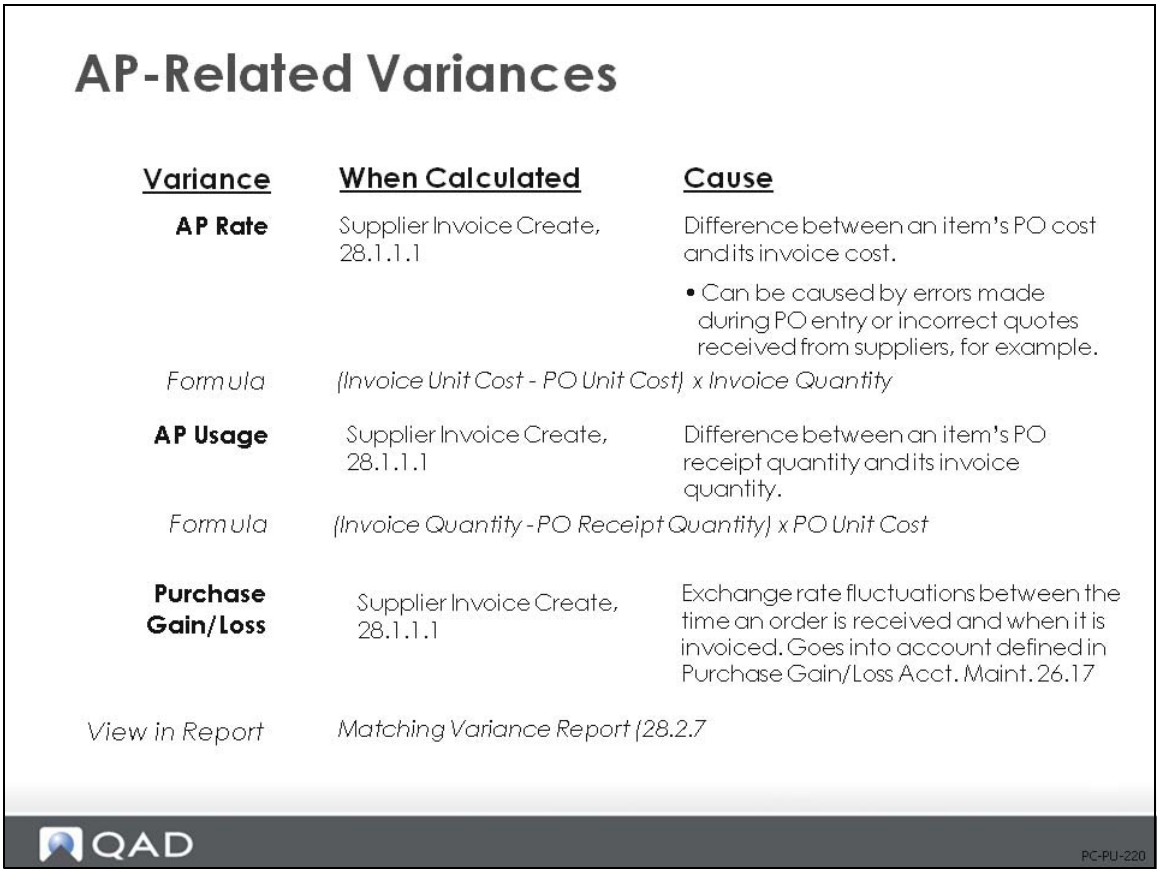
  *(Invoice Qty - Qty Received) * PO Unit Cost*
  *Example: (90 - 100) * 0.13= -1.30*

- Reports entire invoice amount to the Accounts Payable account

  *Invoice Qty * Invoice Unit Cost*
  Example: 90x 0.15 = 13.50

Note If you do not want to calculate AP rate or usage variances for non-inventory (memo) purchases, set Use Expensed Item Var Accts to No (leave box unchecked) in Supplier Invoice Control (28.24), and any variances are simply expensed.

AP-Related Variances Summary



AP Rate Variance

AP Rate Variance occurs when a discrepancy exists between an item's PO cost and its invoice cost. AP Rate Variances can be caused by a variety of things, the most common being errors made during PO entry or incorrect quotes received from suppliers. AP Rate Variance is calculated at Supplier Invoice Create (28.1.1.1) as:

*(Invoice Unit Cost - PO Unit Cost) * Invoice Quantity*

AP Usage Variance

AP Usage Variance occurs when a discrepancy exists between an item's PO receipt quantity and its invoice quantity. This can be caused if you close a receiver with a quantity still open or with an invoice quantity greater than the PO receipt quantity. AP Usage Variance is calculated at Supplier Invoice Create (28.1.1.1) as:

*(Invoice Quantity - PO Receipt Quantity) * PO Unit Cost*

Purchase Gain/Loss

The Purchase Gain/Loss account is used to track variances resulting from exchange rate fluctuations between the effective dates of the PO receipt and the matching of the supplier invoice. It is calculated at Supplier Invoice Create. The account number defaults from Purchase Gain/Loss

Acct Maint. (26.17). Purchase cost variances due to exchange rate fluctuations are usually kept separate from purchase price variances. Because they cannot be controlled by the supplier, they should not influence performance evaluation.

Managing Variances

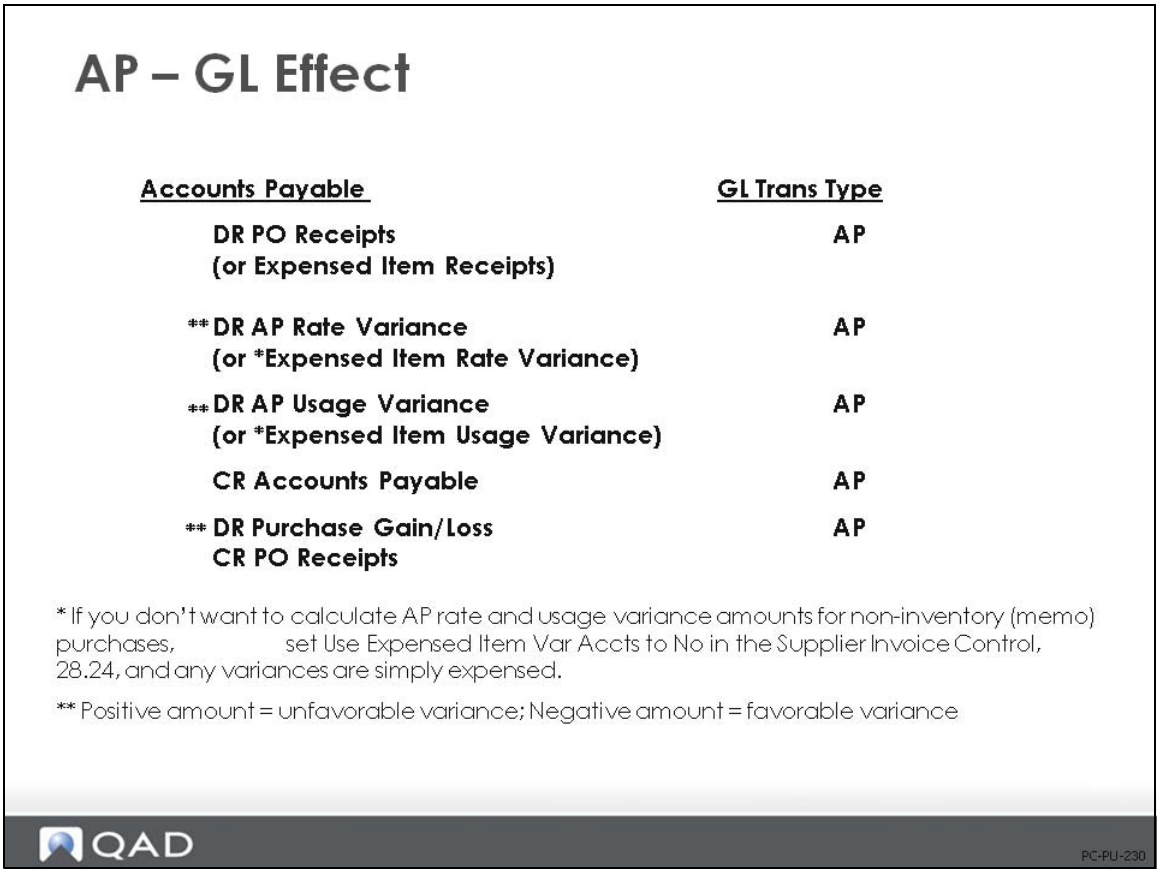
Variances can arise because the supplier quote is incorrect. You can review and change these quotes in Supplier Item Maintenance (1.19).

When an unfavorable variance is calculated during matching, the system automatically assumes that you will be disputing the amount with the supplier and records the variance as a hold amount.

Reports

The Matching Variance Report (28.2.7) displays the details of variances resulting from mismatches in the supplier invoice process.

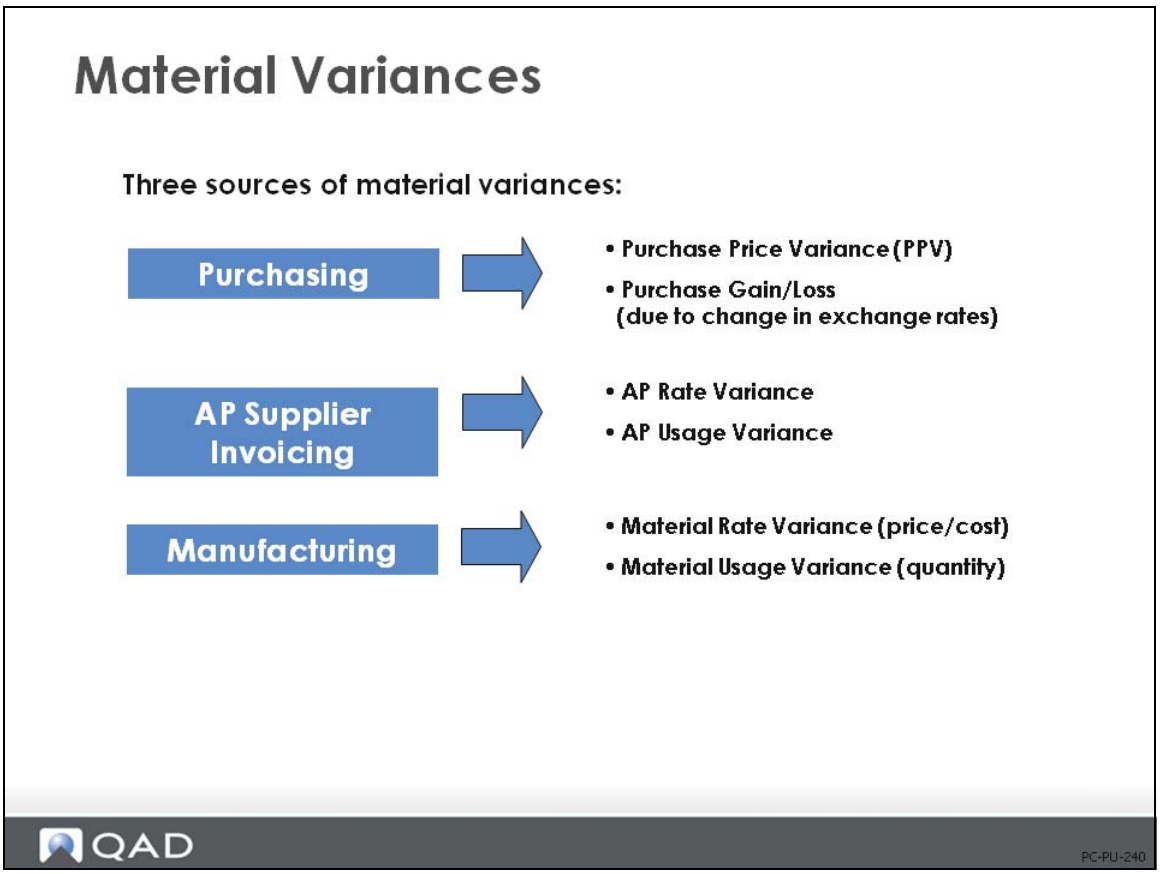
AP GL Effect



The default general ledger entry when matching receipt against a purchase order (excluding the GL effects of direct taxes):

- Debits the PO Receipts account from the product line for inventory items and Domain/Account Control (36.9.24)
- Debits the AP Usage Variance account and the AP Rate Variance account from the product line for inventory items and Domain/Account Control (36.9.24). Negative amounts indicate a favorable variance; positive amounts indicate an unfavorable variance.
- Credits the Accounts Payable account from the supplier

Material Variances Summary



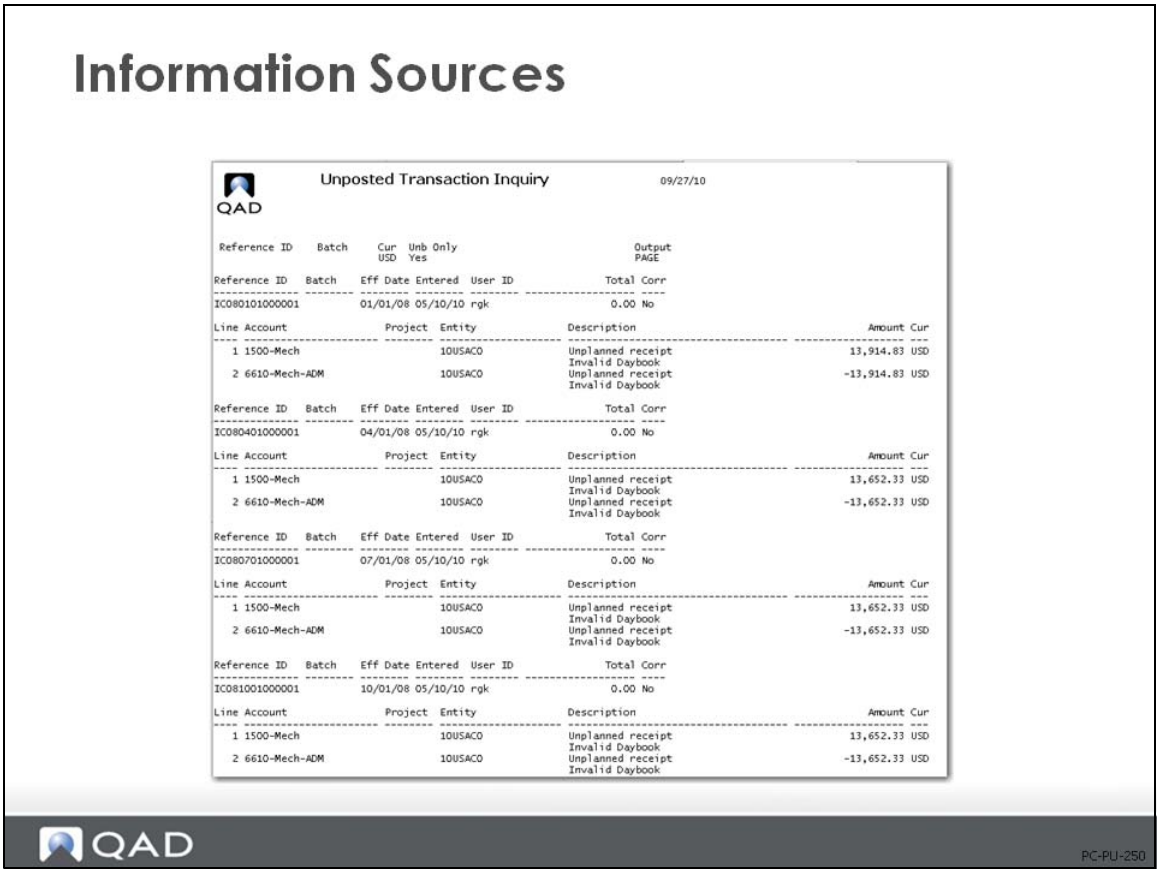
At this point, we have examined two of the three sources of material variance: Purchasing and Accounts Payable.

- In Purchasing, material variances are identified as purchase variances: Purchase Price Variance and Purchase Gain/Loss due to exchange rate fluctuations. Both of these indicate that the cost of the material purchased did not match the established standards.
- In Accounts Payable, material variances are identified as AP variances: AP Rate and AP Usage Variance. The AP Rate Variance indicates that the cost on the supplier's invoice did not match the price on the PO; the AP Usage Variance indicates that the quantity on the supplier's invoice did not match the quantity received.

Another source of material variance is manufacturing. In manufacturing, material variances occur when the cost or quantity of material issued to a manufacturing order does not match what was called for on that order. These are identified as material rate and usage variances.

Next, we will review how costs and variances are reported in the manufacturing modules.

Information Sources



Purchase Receipt Report (5.13.5)

Prints receipt/return transaction information-item, quantity, PO and GL cost, variance, and inventory information.

Transactions Detail Inquiry (3.21.1)

Lists detailed audit information about a specific receipt or return transaction. Includes inventory transaction information as well as all of the GL debits and credits.

Transactions Accounting Report (3.21.16)

Prints GL transactions generated by one or more inventory transactions; selected by date, account, or type.

Matching Variance Report (28.2.7)

Shows the variance between an item’s supplier invoice cost and the standard cost.

AP versus Control GL Validation (25.21.2.6)

Prints a summary of the unposted GL transactions generated by AP activities.

Unposted Transaction Inquiry (25.13.13)

Lists GL transactions that have been created but not yet posted. Used to review the GL effects of any transaction. All you need to know is the module code and the effective date.

Unposted Transaction Register (25.13.14)

Use to review unposted transactions prior to posting.

Appendix A

Variances and Components Reference

Purchase-Related Variances

Variance	Calculation Method
Purchase Price Calculated at: PO Receipts (5.13.1) Reports: Transaction Receipts Report (5.9.14) Transactions Detail Inquiry (3.21.1)	[PO Unit Cost – (GL Unit Cost – OH)] * PO Qty Received
AP Rate Calculated at: Supplier Invoice Create (28.1.1.1) Reports: Matching Variance Report (28.2.7) Transactions Detail Inquiry (3.21.1)	(Invoice Unit Cost – PO Unit Cost) * Invoice Qty
AP Usage Calculated at: Supplier Invoice Create (28.1.1.1) Reports: Matching Variance Report (28.2.7) Transactions Detail Inquiry (3.21.1)	(Invoice Qty – PO Receipt Qty) * PO Unit Cost

Manufacturing-Related Variances

Variance	Calculation Method
Material Rate Calculated at: WO Component Issue (16.10) WO Receipt Backflush (16.12) Repetitive Backflush (18.22.13) Reports: Work Order Cost Report (16.3.4) Transactions Detail Inquiry (3.21.1)	(WO BOM Unit Cost at Issue – GL Unit Cost) * Actual Qty Issued
Material Usage Calculated at: WO Accounting Close (16.21) Cumulative Order Close (18.22.10) Post Accumulated Usage Variances (18.22.9) Reports: Work Order Cost Report (16.3.4) Transactions Detail Inquiry (3.21.1) Rep Operations Accounting Report (18.22.4.9)	{Actual Qty Issued – [qty per * (qty completed + qty rejected)]} * GL Unit Cost
Labor Rate Calculated at: SFC Feedback (16.20.1), (16.20.2), (16.20.3) Can be deferred until: WO Receipt (16.11), (16.12) Repetitive Backflush (18.22.13) Reports: Work Order Cost Report (16.3.4) Operations Accounting Report (16.20.13.10) Rep Operations Accounting Report (18.22.4.9)	Per Operation: [(Actual Setup Rate – Std Setup Rate) * Actual Setup Hrs] + [(Actual Run Rate – Std Run Rate) * Actual Run Hrs] Setup and run rates are equal to the payroll rate (defined in 14.13.21) or the work center rate if payroll is not set up. No variances if no labor reporting
Labor Usage Calculated at: SFC Feedback (16.20.1), (16.20.2), (16.20.3) Can be deferred until: WO Receipt (16.11), (16.12) Post Accumulated Usage Variances (18.22.9) Cumulative Accounting Close (18.22.10) Reports: WO Cost Report (16.3.4) Operations Accounting Report (16.20.13.10) Rep Operations Accounting Report (18.22.4.9)	Per Operation: [(Actual Setup Hrs – Std Setup Hrs) * Std Setup Rate] + [(Actual Run Hrs – Std Run Hrs) * Std Run Rate] Std Run Hrs = Std Run Hrs * (Qty Completed + Qty Rejected)

Variance	Calculation Method
Burden Rate Calculated at: SFC Feedback (16.20.1), (16.20.2), (16.20.3) WO Receipt (16.11), (16.12) Repetitive Backflush (18.22.13) Reports: WO Cost Report (16.3.4) Operations Accounting Report (16.20.13.10) Rep Operations Accounting Report (18.22.4.9)	Per Operation: [(Actual Setup Bdn – Std Setup Bdn) * Actual Setup Hrs] + [(Actual Run Bdn – Std Run Bdn) * Actual Run Hrs] Actual Setup Bdn = (Actual Setup Rate * Lbr Bdn%) + Lbr Bdn Rate + (Mach Bdn Rate * Mach/Op) Std Setup Bdn = (Std Setup Rate * Lbr Bdn%) + Lbr Bdn Rate + (Mach Bdn Rate * Mach/Op) Actual Run Bdn = (Actual Run Rate * Lbr Bdn%) + Lbr Bdn Rate + Mach Bdn Rate Std Run Bdn = (Std Run Rate * Lbr Bdn%) + Lbr Bdn Rate + Mach Bdn Rate
Burden Usage Calculated at: SFC Feedback (16.20.1), (16.20.2), (16.20.3) Can be deferred until: WO Receipt (16.11), (16.12) Post Accumulated Usage Variance (18.22.9) Cumulative Order Close (18.22.10) Reports: WO Cost Report (16.3.4) Operations Accounting Report (16.20.13.10) Rep Operations Accounting Report (18.22.4.9)	Per Operation: [(Act Setup Hrs – Std Setup Hrs) * Std Setup Bdn] + [(Act Run Hrs – Std Run Hrs) * Std Run Bdn] Std Setup Bdn = (Std Setup Rate * Lbr Bdn%) + Lbr Bdn Rate + (Mach Bdn Rate * Mach/Op) Std Run Bdn = (Std Run Rate * Lbr Bdn%) + Lbr Bdn Rate + Mach Bdn Rate
Subcontract Rate Calculated at: PO Receipt (5.13.1)	(Subcontract PO Unit Cost – Subcontract Unit Cost from Routing) * Qty Received
Subcontract Usage Calculated at: WO Accounting Close (16.21) Post Accumulated Usage Variance (18.22.9) Cumulative Order Close (18.22.10)	[Qty Received – (Op Qty Completed + Op Qty Rejected)] * Subcontract Unit Cost from Routing
Method Calculated at: WO Accounting Close (16.21) Cumulative Accounting Close (18.22.10)	Balance of WO/ID value remaining
Mix (Co/By-Products) Calculated at: WO Accounting Close (16.21)	[Order Qty – (Receipt Qty + Scrap Qty)] * GL Unit Cost

Variances by Transaction Flow

Variances by Transaction Flow
PO Receipts Purchase Price Variance *[PO Unit Cost – (GL Unit Cost – OH)] * PO Qty Received* Subcontract Rate Variance *(Subcontract PO Unit Cost – Subcontract Unit Cost from Routing) * Qty Received* **Receiver Matching** Accounts Payable Rate Variance *(Invoice Unit Cost – PO Unit Cost) * Invoice Quantity* Accounts Payable Usage Variance *(Invoice Qty – PO Receipt Qty) * PO Unit Cost* **Work Order Component Issue** Material Rate Variance *(WO BOM Unit Cost at Issue – GL Unit Cost) * Actual Qty Issued* **Labor Feedback** Labor Rate Variance *[(Actual Setup Rate – Std Setup Rate) * Actual Setup Hrs] + [(Actual Run Rate – Std Run Rate) * Actual Run Hrs]* Labor Usage Variance *[(Actual Setup Hrs – Std Setup Hrs) * Std Setup Rate] + [(Actual Run Hrs – *Std Run Hrs) * Std Run Rate]* **Std Run Hrs = Std Run Hrs * (Qty Completed + Qty Rejected)* Burden Rate Variance *[(Actual Setup Bdn – Std Setup Bdn) * Actual Setup Hrs] +* *[(Actual Run Bdn – Std Run Bdn) * Actual Run Hrs]* Burden Usage Variance *[(Act Setup Hrs – Std Setup Hrs) * Setup Bdn] + [(Act Run Hrs – Std Run Hrs) * Run Bdn]* **Work Order Accounting Close** Subcontract Usage Variance *[Qty Received – (Op Qty Completed + Op Qty Rejected)] * Subcontract Unit Cost from Routing* Material Usage Variance *{Actual Qty Issued – [qty per * (qty completed + qty rejected)]} * GL Unit Cost* Method Variance

Components of Item Cost

Components of Item Cost	
Material	
Dependent On	*Defined In*
Material/Purchase Price	Item Master Maintenance (1.4.1), (1.4.9), (1.4.18)
Quantity Per	Product Structure Maintenance (13.5), (15.5)
Scrap %	Product Structure Maintenance (13.5), (15.5)
Phantom	Item Master Maintenance (1.4.1), (1.4.7), (1.4.17)
Pur/Mfg	Item Master Maintenance (1.4.1), (1.4.7), (1.4.17)
Structure Type	Product Structure Maintenance (13.5)
Yield %	Routing Maintenance (14.13.1)
Labor	
Dependent On	*Defined In*
Work Center Labor Rates	Work Center Maintenance (14.5)
Work Center Setup Rates	Work Center Maintenance (14.5)
Run Time per Unit	Routing Maintenance (14.13.1), (14.13.2)
Setup Time per Lot	Routing Maintenance (14.13.1), (14.13.2)
Order Quantity	Item Master Maintenance (1.4.1)
Subcontract Cost	Routing Maintenance (14.13.1)
Burden	
Dependent On	*Defined In*
Work Center Labor Burden Rates	Work Center Maintenance (14.5)
Work Center Labor Burden Percent	Work Center Maintenance (14.5)
Work Center Machine Burden Rate	Work Center Maintenance (14.5)
Machines/Operation	Work Center Maintenance (14.5)
All of the items under Labor (above)	