



# Infor SyteLine Automotive Industry Pack User Guide

Release 9.01.x

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## Contacting Infor

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The latest documentation is available from [docs.infor.com](https://docs.infor.com) or from the Infor Support Portal. To access documentation on the Infor Support Portal, select **Search > Browse Documentation**. We recommend that you check this portal periodically for updated documentation.

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## About the Automotive Industry Pack

This book contains help topics that describe the Automotive industry pack overviews, procedures, and forms. To use these forms, you must have access to the Automotive Industry Pack group authorization.

These enhancements to the base product are included:

- **Retroactive Billing:** Unit pricing is set at the blanket line release level. Existing re-pricing functionality is then modified to reflect the changes at the blanket line release level.
- **Failure Mode Effects Analysis (FMEA):** This is a common analysis used in the auto industry to determine the risk of certain types of failure and to implement corrective action to prevent those failures. Each operation has a potential risk and certain preventative measures. Although not exclusive to the auto industry it is representative of repetitive manufacturing and is normally expressed in the terms of parts per million. It is important to document the risk and the resulting outcome to insure that a procedure implemented to reduce risk is not removed due to undue circumstance. 100% radiographic inspection could be required to detect a flaw that otherwise would be virtually undetectable and removal of this requirement could have significant impact to the overall quality and performance of the product.
- **Advanced Product Quality Planning (APQP):** These are somewhat independent actions of the ERP that are required to be performed to be said to be in compliance with a Quality Program. Each program has an independent set of requirements, they can only be said to be complete or incomplete.
- **Match Delivery Notice to Invoice:** This feature provides a way to match a payment to an invoice during AR Payment Distribution. Not all customers reference the invoice during payment. They may reference the ASN, the order, or some other identifier generated on their end. You may now specify which reference type they will provide with payments. When payments are being distributed, you can launch a form that allows you to enter the reference number provided with the payment. The system will then find the invoice that matches this reference number.
- **Customer and Vendor Contracts:** You can use the customer and vendor master contracts forms to create and manage a contractual agreement regarding customer and vendor order lines and releases.
- **Returnable Containers Management:** You can manage containers in accordance with Automotive Industry requirements with the data fields on the **Automotive Containers** form, which are used for the definition of physical dimension and capacity and for recording the codes and markings necessary for compliance with ISO 6346. Containers can be defined for repeated use, and you may specify general container types. You may also include containers inside other containers.
- **Due Date Add Time Stamp:** Use this information to facilitate highly repetitive manufacturing with JIT models that require multiple shipments a day for a particular part, customer and purchase order due dates can now include the time of day.

- Overall Equipment Effectiveness (OEE): Overall Equipment Effectiveness, a key metric that defines the percentage of production that is truly productive, can be viewed on the **Job Operations** and **Resource Group Load Profile - Scheduler** forms.

## Designing FMEA

- 1 To set up FMEA data:
  - a On the **FMEA Classifications** form, specify all possible failure classifications.
  - b On the **FMEA Failure Modes** form, specify all possible failure modes.
  - c On the **FMEA Ratings** form, accept the default ratings standard or specify your own.  
**Note:** The default entry "No effect unlikely" represents the lowest possible severity rating.
- 2 Open the **FMEA Maintenance** form.
- 3 In the header, specify the item, operation, and work center.
- 4 In the Causes and Controls section, specify the type of failure, its potential causes, and other factors. When you specify the **Classification**, its description displays in the **Potential Causes** field.
- 5 Select ratings in the **Severity**, **Occurrence**, and **Detection** fields. These fields are used to calculate the **RPN** field, using the following formula:  $\text{Severity} * \text{Occurrence} * \text{Detection}$ .
- 6 In the Action Information section, specify how to respond to the potential failure, as well as what steps have already been taken and how they affected the RPN.
- 7 Select ratings in the **Action Severity**, **Action Occurrence**, and **Action Detection** fields. These fields are used to calculate the Action RPN, which represents the effect your actions had on the original RPN.

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## Managing Automotive Containers

This topic describes the setup and use of containers for the auto industry.

- 1 If you wish to reuse container numbers, select the **Reuse Container Numbers** check box on the **Inventory Parameters** form.
- 2 Use these forms to review ISO container heights, lengths, and types:
  - **ISO Container Heights**
  - **ISO Container Lengths**
  - **ISO Container Types**
- 3 Use the **Container Types** form to define common characteristics that provide default values for container types. The types you create on that form are used elsewhere in the system for automotive containers.
  - a On the **Container Types** form, create a new container type and add a description.
  - b Specify the ISO codes for country, length, height, and type.
  - c Select or clear appropriate check boxes for including air surface symbol, overhead electrical warning, and height mark.
  - d Specify weights, heights, widths, lengths, and cubic capacity along with their units of measure.
- 4 On the **Automotive Containers** form, specify effective date, container type, parent container, ISO 6346 marks and codes and values for capacity, dimensions, and units of measure.
  - a Create a new container on the **Automotive Containers** form and give it a description if you like.
  - b Specify the warehouse, location, and usage reference.
  - c Specify the effective date, container type, and any parent container.
  - d Specify the **Owner Code**, which is the code for the container's owner as registered with the International Container Bureau. The code is three letters and all uppercase.
  - e Specify the ISO codes and the container serial number.
  - f Select or clear check boxes to determine whether to include air surface symbol, overhead electrical warning, and height mark.
  - g Specify weights, heights, widths, lengths, and cubic capacity along with their units of measure.
  - h The **Check Digit** field is populated automatically upon save.
  - i The **Grouping** tab displays the hierarchy where other containers have the current container defined as the parent container. Use the right arrow to remove subordinate containers from the current container. Use the left arrow to assign the current container to the parent container for containers displayed in the Free Containers tree view. The free containers are ones that do not have a parent container assigned.



## Managing Customer and Vendor Master Contracts

**Note:** Contracts can be assigned to only orders that are in the customer or vendor currency.

- 1** To create a customer order, or purchase order, master contract:
  - a Open the **Customer Order Master Contracts** or **Purchase Order Master Contracts** form.
  - b Select **System > Actions > New** to create a new master contract.
  - c Specify a contract number, or leave the field blank to cause the system to automatically generate a number when the record is saved.
  - d Specify a customer/vendor, effective date, and status. You may also specify an expiration and review date, if desired.
  - e Save the record.
- 2** To add contract lines:
  - a On the **Customer Order Master Contracts** or **Purchase Order Master Contracts** form, click the **Contract Lines** button to open the appropriate **Contract Lines** form and filter the form by the selected contract.
  - b Select **System > Actions > New** to create a new master contract line.
  - c Specify a customer/purchase order and line.
  - d If applicable, specify an initial and contract total quantity, as well as a vendor item number.
  - e Save the record.
- 3** To define contract line prices:
  - a On the **Customer Order Master Contract Lines** or **Purchase Order Master Contract Lines** form, click the **Prices** button to open the appropriate **Contract Line Prices** form and filter the form by the selected line.
  - b Specify an effective date.
  - c If applicable, you may also specify the contract price, as well as expiration and review dates.
  - d Save the record and close the form.

## Recalculating a Purchase Order

You can reprice a purchase order at the line, blanket line, or blanket release level. After you open the repricing form, you can perform the actions described here.

- 1 Open the **Purchase Order Lines**, **Purchase Order Blanket Lines**, or **Purchase Order Blanket Releases** form.
- 2 Select the order/line/release to recalculate.
- 3 Click the **Recalculate Cost** button:
  - For lines, the **Purchase Order Lines Reprice** form displays.
  - For blanket lines, the **Purchase Order Blanket Lines Reprice** form displays.
  - For releases, the **Purchase Order Blanket Releases Reprice** form displays.
- 4 On any of the repricing forms, use the **Contract Pricing Method** field to select a new contract pricing method, if available.
- 5 To modify the line/release price on any of the repricing forms, perform these actions:
  - a Enter a new amount in the **Reprice** field.
  - b Save the record.
- 6 Click the **Recalculate Cost** button to get an up-to-date vendor contract price or item cost. This button is disabled if the line is a non-inventoried items, if the line status is not Planned or Ordered, or if the purchase order was not created by the current site.
- 7 On any of the reprice forms, click the **Voucher Builder** button to open the **Voucher Builder** form to create vouchers and adjustments.

## Referencing a Payment

For customers that send payments using a reference number other than the invoice number, you can specify which reference type they will provide with payments.

- 1 Open the **EDI Customer Profiles** form and select a customer.
- 2 Ensure that **Ship To 0** is selected.
- 3 In the **Payment Ref Type** field, select the reference type that your customer includes with their payment.
- 4 If the **External** type is selected, map the EDI element that contains the reference to the **Ext Payment Ref** field on the **EDI Customer Orders** form.

When posting EDI customer order invoices, the system looks up the reference type for the customer and sets the reference number accordingly.

- 5 When you are distributing a payment, click the **Payment Reference** button on the **A/R Payment Distributions** form to open the **Payment Reference Lookup** form.
- 6 On the **Payment Reference Lookup** form, enter the reference sent with the payment.
- 7 Click **Search** to display, in the grid, all invoices that match that reference you entered.
- 8 Select the appropriate invoice and click **OK** to return to selected invoice number to the **A/R Payment Distributions** form.

**Note:** If you are using the **A/R Quick Payment** form, the reference number displays in the grid.

## Repricing an Order

You can reprice a customer order at the line, blanket line, or blanket release level. After you open the repricing form, you can perform the actions described here.

- 1 Open the **Customer Order Lines**, **Customer Order Blanket Lines**, or **Customer Order Blanket Releases** form.
- 2 Select the order/line/release to reprice.
- 3 Click the **Reprice** button:
  - For lines, the **Customer Order Lines Reprice** form displays.
  - For blanket lines, the **Customer Order Blanket Lines Reprice** form displays.
  - For releases, the **Customer Order Blanket Releases Reprice** form displays.
- 4 On any of the repricing forms, use the **Contract Pricing Method** field to select a new contract pricing method, if available.
- 5 On any of the repricing forms, perform these actions:
  - a Enter a new amount in the **Reprice** field.
  - b Save the record.
- 6 Click the **Reprice** button to recalculate the **Unit Price** based on the pricing set up in **Price Formulas** and its related forms.
- 7 On any of the customer order reprice forms, click the **Print/Post Invoice** button to open the **Print Price Adjustment Invoice** form.

## Creating a Customer Order Pricing Method

- 1 Open the **Customers** form.
- 2 Select a customer record.
- 3 In the **Customer Contract Pricing** field, select **Order Date** or **Due Date** to specify which date will be used to determine pricing.
- 4 In the **Contract Pricing Method** field, select whether the pricing information will come from the **Customer Order Master Contracts** form or the **Customer Contracts** form.
- 5 Save the record and close the form.
- 6 If a master contract exists for the customer, open the **Customer Order Master Contracts** form and filter the form to display the customer's master contracts.
- 7 For each master contract, the **Contract Price Method** selected on the **Customers** form displays by default, but it may be updated as needed.
- 8 Save the record and close the form.

## Creating a Vendor Pricing Method

- 1 Open the **Vendors** form.
- 2 Select a vendor record.
- 3 In the **Customer Contract Pricing** field, select **Order Date** or **Due Date** to specify which date will be used to determine pricing.
- 4 In the **Contract Pricing Method** field, select whether the pricing information will come from the **Purchase Order Master Contracts** form or the **Vendor Contracts** form.
- 5 Save the record and close the form.
- 6 If a master contract exists for the vendor, open the **Purchase Order Master Contracts** form and filter the form to display the customer's master contracts.
- 7 For each master contract, the **Contract Price Method** selected on the **Customers** form displays by default, but it may be updated as needed.
- 8 Save the record and close the form.

## Determining the Value of the Check Digit

When you save a record on the **Automotive Containers** form, the **Check Digit** field is populated automatically, to validate the accuracy of the **Owner Code**, **Equipment Category ID**, and **Container Serial Number** values. The **Check Digit** is only populated when those fields are not empty.

Each letter of the owner code, the equipment category identifier, and each numeral of the serial number is consecutively allocated a numerical value.

For the owner code or equipment category, these equivalent numeric values are allocated:

Letter	Equivalent Value	Letter	Equivalent Value
A	10	N	25
B	12	O	26
C	13	P	27
D	14	Q	28
E	15	R	29
F	16	S	30
G	17	T	31
H	18	U	32
I	19	V	34
J	20	W	35
K	21	X	36
L	23	Y	37
M	24	Z	38

The serial number is restricted to the digits 0-9.

### Weighting Factor

The weighting factor is a method of subjectively increasing the relative importance of one item over another. Each numerical equivalent is multiplied by a weighting factor in the range  $2^0$  to  $2^9$ . The weighting factor  $2^0$  is applied to the first letter of the owner code, and then in increasing powers of 2, rising to  $2^9$  for the last digit of the serial number.

**Value of the Check Digit**

This table indicates the check digit value corresponding to the remainder value of division effected in conformity with 0. To avoid the duplication resulting from the value zero being assigned as a remainder of both 10 and 0, we recommend that serial numbers resulting in remainders of 10 should not be used.

Remainder	Check Digit
10	0
9	9
8	8
7	7
6	6
5	5
4	4
3	3
2	2
1	1
0	0

The serial number is restricted to the digits 0-9.

**Sample Calculation**

This example shows a sample owner code, equipment category ID, and serial number, and then provides equivalent and weighting factors for each letter and numeral. The last table shows the product of the columns in the Equivalent Factors table and the Weighting Factors table.

Owner Code = ZEP

Equipment Category ID = U

Serial Number = 003725

Full ID									
Z	E	P	U	0	0	3	7	2	5

Equivalent Factors									
38	15	27	32	0	0	3	7	2	5

Weighting Factors									
1	2	4	8	16	32	64	128	256	512



**Product of columns in Equivalent Factor and Weighting Factors**

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38	30	108	256	0	0	192	896	512	2560
----	----	-----	-----	---	---	-----	-----	-----	------

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The sum of all the products in this table = 4592

The sum divided by the modulus 11 = 417 5/11

The remainder is 5. See the Value of the Check Digit table above to determine that the check digit is 5 in this case.

# Tracking Equipment Effectiveness

Overall equipment effectiveness (OEE) is used to evaluate how effectively a job operation is utilized.

There are two places to view OEE data:

- On the **Job Operations** forms, select the **OEE** tab to view effectiveness data for the latest 30 days of reported labor that requires the resource to have labor reported against the operation's work center.
- On the **Resource Group Load Profile - Scheduler** form, use the OEE graphs to view effectiveness data for the specified date range of reported labor that requires the resource to have labor reported against the operation's work center.

This table shows the OEE factors and calculations:

Factor	Calculation
Availability	$([\text{Available Production Time}] - [\text{Unavailable Production time Shift Exceptions}]) / [\text{Available Production Time}]$
Performance	$[\text{Total Pieces}] / [\text{Operation Time}] / [\text{Ideal Cycle Time}]$
Quality	$[\text{Good Pieces}] / [\text{Total Pieces}]$
Overall OEE	$\text{Availability} * \text{Performance} * \text{Quality}$

## Notes

- Performance, Availability, or Quality calculated at greater than 100% are artificially capped at 100% and display in red. This typically indicates a problem with reporting or your ideal cycle time.
- To ensure an accurate measurement of piece quality, scrap should be reported against the operation.
- If you do not report shift exceptions against the resource, Availability will always be calculated as 100%.
- OEE calculations are not related to specific jobs.
- OEE is not applicable to back flushed materials or fixed schedule hours, which are always 100%.

## Ideal Cycle Time

The ideal cycle time refers to the highest possible rate at which a work center can possibly operate, and is dependent on the **Schedule Driver** field. For example, if the work performed is with a saw, the ideal cycle time represents the time used to cut the material only, with no time allotted to related labor such as repositioning the material. Ideal cycle time is reflected in the cycle time Labor/Machine Hours

Per Piece, or Labor/Machine Pieces Per Hour. Percent efficiency represents the actual cycle time, and is always less than, or equal to, the ideal cycle time.

#### Calculation Definitions

- Good Pieces = Pieces completed.
- Ideal Cycle Time (Fixed Hours) = Fixed Hours.
- Ideal Cycle Time (Machine) = [Hours per piece] / [pieces per machine hour].
- Ideal Cycle Time (Labor) = [Hours per piece] / [pieces per labor hour].
- Operating Time = Reported time for the quantity completed.
- Ideal Cycle Time = Theoretical minimum time to produce one piece.

## Time Sensitive Due Dates

For manufacturing models that utilize multiple shipments per day, you can specify the time of day that orders are due.

**Note:** When determining the offset due date and time, the order recipient's travel time and the time zone should be taken into account.

### Specifying Time-Sensitive Dates for Customer Orders

- 1 Open the **Customer Order Lines** or **Customer Order Blanket Releases** form and select an order.
- 2 In the **Projected Date** field, select a date.
- 3 When the date populates in the **Projected Date** field, the default time of 12:00am displays. Accept the default or enter a new time.
- 4 In the **Due Date** field, select a date.
- 5 When the date populates the **Due Date** field, the default time of 12:00am displays. Accept the default or enter a new time.

### Specifying Time-Sensitive Dates for Purchase Orders

- 1 Open the **Purchase Order Lines** or **Purchase Order Blanket Releases** form and select an order.
- 2 In the **Promise Date** field, select a date.
- 3 When the date populates in the **Promise Date** field, the default time of 12:00am displays. Accept the default or enter a new time.
- 4 In the **Due Date** field, select a date.
- 5 When the date populates the **Due Date** field, the default time of 12:00am displays. Accept the default or enter a new time.

## Specifying Time-Sensitive Dates for EDI Customer Orders

- 1 Open the **EDI Customer Profiles** form and select a customer profile.
- 2 In the **Hours** field, enter the number of hours to offset the order due date, or accept the default of zero to create a due date time of 12:00am.

# Utilizing QA Processes

QA processes and templates are used during quality assurance testing for products.

## Defining a QA Process Template

- 1 Open the **QA Process Definitions** form.
- 2 Define a process type by specifying a name, description, and duration (in days).
- 3 Save the record, then click the **Phases** button to open the **QA Process Phase Definitions** form.
- 4 Create the QA phases for the selected process type by specifying the sequence number, name, description, and duration (in days). To insert a sequence between existing sequences, add a new phase with a sequence number between the two sequences in which the new sequence will exist.
- 5 Save the record, then click **Resequence** to adjust all sequence numbers to be multiples of 10, as well as arrange all records in sequential order. For example, if you created three sequences for process 1, and numbered them 10, 15, and 20, when you click **Resequence**, the adjusted sequence numbers will be 10, 20, and 30.
- 6 When you are satisfied with the existing process phase definitions, click the **Activities** button to open the **QA Process Phase Activities Definitions** form
- 7 Define the phase activities by specifying a sequence number, name, description, and duration (in days).
- 8 Save the record and close the form.

## Creating a QA Process

- 1 Open the **QA Processes** form.
- 2 In the **Process** field, specify a process template created on the **QA Process Definitions** form.
- 3 Specify a process ID, description, status, and duration (in days).
- 4 You may also specify which party owns, and originated, this process ID.
- 5 Select start and target dates.
- 6 Click the **Calculate** button to populate the **Projected Date** field. This date is determined by adding the duration to the start date.
- 7 Click the **Phases** button to open the **QA Process Phases** form.

- 8 Specify a phase number, name, and description.
- 9 Select a start and target date.
- 10 Create more phases as needed. To insert a sequence between existing sequences, add a new phase with a sequence number between the two sequences in which the new sequence will exist. After adding all new records, save the record, then click **Resequence** to adjust all sequence numbers to be multiples of 10, as well as arrange all records in sequential order. For example, if you created three sequences for process 1, and numbered them 10, 15, and 20, when you click **Resequence**, the adjusted sequence numbers will be 10, 20, and 30.
- 11 Click the **Phase Activity** button to open the **QA Process Phase Activities** form.
- 12 For each activity, specify a sequence number, name, description, and duration (in days).
- 13 Create more phase activities as needed. To insert a sequence between existing sequences, add a new activity with a sequence number between the two sequences in which the new sequence will exist. After adding all records, save the record, then click **Resequence** to adjust all sequence numbers to be multiples of 10, as well as arrange all records in sequential order. For example, if you created three sequences for process 1, and numbered them 10, 15, and 20, when you click **Resequence**, the adjusted sequence numbers will be 10, 20, and 30.
- 14 Open the **QA Process Sources** form.
- 15 Select a process template or process ID.
- 16 Specify the items, orders, or jobs that are impacted by this process. This information displays on the **QA Processes** form.

**Note:** To reorder phase or activity sequences, add a new phase with a sequence number between the two sequences in which the new sequence will exist, then click the **Resequence** button. For example, if you want to add a new phase sequence between 10 and 20, create a new phase with sequence number 15, then click **Resequence** to adjust the sequence numbers.

## Completing a QA Process

- 1 Open the **QA Process Phase Activities** form.
- 2 For each completed activity, specify who completed it, and when it was completed.
- 3 Save the record and close the form.
- 4 Open the **QA Process Phases** form.
- 5 If all activities in a phase are complete, specify who completed the phase.
- 6 Select **Complete**.
- 7 Save the record and close the form.
- 8 Open the **QA Processes** form.
- 9 When all phases are complete, specify who completed the process, and the date on which it was completed.
- 10 Select **Completed**.
- 11 Save the record and close the form.

## Generating a QA Report

- 1 Open the **QA Process Report** form.
- 2 Select the **QA Processes** check box to include actual processes on the report.
- 3 Select the **QA Process** check box to include process templates on the report.
- 4 Specify a range of sources.
- 5 Click **Print** or **Preview**.