



MAINTENANCE

11

The *Sunflower Maintenance* solution enables users to create, track, and record all essential definitions, parameters and information surrounding preventive and unscheduled asset maintenance. In this chapter organizations will learn how the *Sunflower Maintenance* solution enables users to:

- Create and assign defined meters
- Record meter readings
- Create Work Orders Templates and associated work order cause types and task types
- Create and assign automated and manual preventive maintenance schedules
- Create and complete work orders
- Generate Maintenance reports

Once configuration is complete (See Sunflower 5.0 Admin Guide), maintenance operations can begin. Maintenance operations are divided into setup activities and routine activities

KEY CONCEPTS

This chapter includes the following discussion points and concepts:

- Maintenance Roles
- Maintenance Setup
 - *Meter Creation and Assignment*
 - *PM Schedule and Work Order Template Creation*
 - *PM Schedule Assignment*
- Routine Activities

- *Meter Reading*
- *Run PM Scheduler*
- *Work Order Management*
- Maintenance Reports
 - *Work Order (Global Information) Report*
 - *Work Order by Status Report*
 - *Work Order by Schedule Report*
 - *Work Order by Asset Report*
 - *PM Scheduler Logs Report*
 - *Work Order Template Report*
 - *Meter Reading Report*

MAINTENANCE ROLES

The Maintenance module uses three roles to manage maintenance information. These three roles are the **Maintenance Manager**, **Maintenance Planner** and **Maintenance Clerk**.

When assigning these roles to users, it is important to map out the functional responsibilities of the users and decide based on the tasks that each user must perform how to assign the appropriate application role. The table below lists menu access within the Maintenance module based upon the Maintenance roles in addition to an Interest Maintenance role.

MENU ITEM	ROLE		
	MAINTENANCE MANAGER	MAINTENANCE PLANNER	MAINTENANCE CLERK
Work Order	Yes	Yes	Yes
Meter Reading	Yes	Yes	Yes
Meter Assignment	Yes	Yes	--
PM Schedule Assignment	Yes	Yes	--
Work Order Template	Yes	--	--
Meter Definition	Yes	--	--
PM Schedule	Yes	Yes	--
Run PM Scheduler	Yes	Yes	--
Maintenance Reports	Yes	Yes	Yes

To perform any maintenance-related task, a user is required to have at least one Maintenance specific role (Manager, Planner, and Clerk) and one or more of the five available Interest Asset Maintenance roles.

Interest Asset Maintenance Roles
• AS_AGREEMENT_MAINTENANCE
• AS_EXCESS_MAINTENANCE
• AS_FINANCIAL_MAINTENANCE
• AS_INACTIVE_MAINTENANCE
• AS_INVENTORY_MAINTENANCE

The combination of roles provides the following advantages:

- An Administrator can restrict who can update assets based upon the interest asset.
- Maintenance personnel do not need to have knowledge/concept of an interest asset.
- Work order items can be queried by interest asset type where only allowable base assets will be retrieved and only allowable interest assets will be displayed on the work order screens.

- If an interest asset is retired and resurrected, any work orders written against the retired asset identifier will still be retrievable since the core asset is the direct link to the work records.

MAINTENANCE SETUP

METER DEFINITION

The **Meter Definition** form allows users to enter all Meter types that will be used to perform meter readings. Meter Definitions include items such as odometers, volt-meters and counters.

NAVIGATION

- Click Maintenance
- Click Meter Definition

Code	Description	Type	UOM	Default Initial Reading	Begin Date	End Date	Increase?	Cumulative?
HR	HOURLY READING	VARIABLE	HOURS	0			<input type="checkbox"/>	<input type="checkbox"/>
JSF	JSF CUMULATIVE	VARIABLE	DEGREES	0			<input type="checkbox"/>	<input checked="" type="checkbox"/>
OD	ODOMETER READING	ABSOLUTE	MI	0			<input checked="" type="checkbox"/>	<input type="checkbox"/>
TEMP	TEMPERATURE	VARIABLE	DEGREES	0			<input type="checkbox"/>	<input type="checkbox"/>
							<input type="checkbox"/>	<input type="checkbox"/>
							<input type="checkbox"/>	<input type="checkbox"/>
							<input type="checkbox"/>	<input type="checkbox"/>
							<input type="checkbox"/>	<input type="checkbox"/>
							<input type="checkbox"/>	<input type="checkbox"/>
							<input type="checkbox"/>	<input type="checkbox"/>
							<input type="checkbox"/>	<input type="checkbox"/>
							<input type="checkbox"/>	<input type="checkbox"/>
							<input type="checkbox"/>	<input type="checkbox"/>
							<input type="checkbox"/>	<input type="checkbox"/>
							<input type="checkbox"/>	<input type="checkbox"/>
							<input type="checkbox"/>	<input type="checkbox"/>

Step 1. Navigate to the **Meter Definition** form.

Step 2. Enter a **Code** and **Description** for each Meter type to be defined.

Step 3. Select **Type** from the list of values.

- Absolute:
 - Absolute indicates that the meter values can only move in one direction, either increasing (like an odometer) or decreasing (like a decrement counter).
 - Check the Increase box if the reading levels will always increase in value; leave unchecked if the reading levels will always decrease in value.
- Variable:
 - Variable applies to process instrumentation (e.g., temperature sensor) that can have a variable (higher/lower) measurement from one reading to another.

- The increase indicator is ignored for variable meters.
- If the **Cumulative** box is checked the meter reading report will display the cumulative value of the variable meter readings. If the box is not checked, the meter reading report will display the difference between each of the variable meter readings.

Step 4. Select the **Unit of Measure** from the list of values.

Step 5. Enter **Default Initial Reading** for each entry.

Step 6. Optionally, specify **Begin** and **End** dates.

Step 7. Click the **Save** icon.

WORK ORDER TEMPLATES

Work Order Templates are pre-built work orders that are not attached to a specific object nor to a specific point in time; they contain a list of tasks to be performed in order to accomplish a particular job. Templates can be associated to a work order manually, or can be used in conjunction with the PM scheduler to generate PM Work Orders automatically when an item is due for maintenance.

The **Work Order Template** form allows organizations to create templates for work orders that are used during the performance of routine preventive maintenance. Organizations can create as many templates as is needed. These templates outline each work order task that requires completion.

For example, a Work Order Template could be created for any routine car service such as a 12 month / 15,000 mile service on a 2008 Ford F100 truck.

NAVIGATION

- Click Maintenance
- Click Work Order Template

Work Order Template

Template Name: 5000 MILE MAINTENANCE
 Template Description: 5000 MILE MAINTENANCE TEMPLATE
 Work Order Cause Type: PREVENTATIVE
 Work Order Type: MAINTENANCE

Work Order Line Items

Ok	Sequence	Task	Description	Additional Information*
<input checked="" type="checkbox"/>	1	OILCHG	OIL CHANGE	
<input type="checkbox"/>				

Message: Complete

Step 1. Navigate to the **Work Order Template** form.

Step 2. Enter the desired name and description for the template being created in the **Name** and **Description** field (for example: 5000 Mile Maintenance)

Step 3. Select the **Work Order Cause Type** and the **Work Order Type** from the drop down lists

Step 4. Click the Next Block icon to move to the **Work Order Line Items** block.

Step 5. In the **Task** field select a **Work Order Task Type** from the list of values.

Step 6. The **Description** field will auto-populate.

Step 7. Add additional tasks in the **Work Order Line Items** block to complete the template.

Step 8. Click the **Save** icon.

NOTE: Tasks that are not predefined (not available from the LOV) can be manually entered depending on the task parameter setup.

PREVENTIVE MAINTENANCE (PM) SCHEDULE

The PM Schedule form enables users to create schedules for routine preventive maintenance. These schedules can be date-based or meter-based; meaning, the schedule can be set to run based on dates or values that come from routine meter readings. For the PM Schedule to generate PM Work Orders users will,

1. Create the PM Schedule
2. At the asset level, assign the PM schedule and related Work Order Template to the assets that require such maintenance
3. Run the PM Scheduler Batch Job

PM schedules are used in conjunction with PM Schedule Assignments, Work Order Templates and the PM Scheduler to automatically generate work orders when maintenance is required.

NAVIGATION

- Click Maintenance
- Click PM Schedule

- Step 1.** Navigate to the **PM Schedule** form.
- Step 2.** Enter or select the **Name** from the list of values (for example: **FORD F150 - 15K** check-up)
- Step 3.** Specify a value for the **Lead Time Days** (**value** should be determined by the time needed to schedule the maintenance activity).

- For example, for a 12 month, 15,000 mile check-up one might select to have a lead time of 30 business days to enable the vehicle user a chance to schedule a maintenance appointment.

Step 4. Specify **Begin** and **End** dates (these fields are optional).

Step 5. Select the **Generate Work Order?** checkbox to automatically create a work order for the service based upon the template referenced in the PM Schedule Assignment for the asset.

Step 6. Select the **All Rules** checkbox if desired

- By default, the **All Rules** checkbox is selected.

NOTE: Any one rule being satisfied will cause the PM generator to create a work order as indicated on the PM Schedule Assignment for a given asset. If the All Rules flag is true, a work order will only be generated if all rules (with qualifying begin and end dates) are satisfied.

Step 7. Click the **Next Block** icon once to move to the **Meter Based Rules** section or click the Next Block icon a second time to move to the **Date Based Rules**. Define rule line items as required.

- Use the **Meter Based Rules** block to specify rules that are applied based on values that come from routine meter readings.
- Use the **Date Based Rules** block to specify rules that are applied based on either specified dates, or the elapsed number of days since the last time a work order was generated from the template that is referenced in the PM Schedule Assignment for an asset.

Step 8. Click the **Save** icon.

ASSET SETUP

METER ASSIGNMENT

The Meter Assignment form is used to create an association between defined meters and assets. Meter Assignments normally take place when a maintenance asset is first acquired. A meter must be assigned to an asset before meter readings can be recorded for the meter. The form is comprised of three tabs that allows users to:

- **Assign a Meter to Assets** – one meter to one or more assets
- **Assign an Asset to Meters** – one asset to one or more meters
- **Assign Meters to Assets** – one or more meters to one or more assets

Use this form to define new meter assignments or modify (add more or delete) current assignments.

METER TO ASSETS

For the Meter to Assets tab, the top portion of the form identifies the meter that will be assigned, and the bottom block identifies the assets.

NAVIGATION

- Click Maintenance
- Click Meter Assignment
- Click Meter to Assets tab

Meters				Assignment		
Code	Description	Type	Unit of Measure	Initial Reading*	Begin Date	End Date
ODOMETER2	ODOMETER 2	ABSOLUTE	MI	5000		

Ok	Δ	Identifier	Descriptives*	Initial Reading	Other Identifiers
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	INV / 0111	FORD MOTOR COMPANY__TAURUS__SEDAN	5000	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	INV / 0123	FORD MOTOR COMPANY__TAURUS__SEDAN	5000	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	INV / 0124	FORD MOTOR COMPANY__TAURUS__SEDAN	5000	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	INV / 0125	FORD MOTOR COMPANY__TAURUS__SEDAN	5000	
<input type="checkbox"/>	<input type="checkbox"/>				
<input type="checkbox"/>	<input type="checkbox"/>				
<input type="checkbox"/>	<input type="checkbox"/>				
<input type="checkbox"/>	<input type="checkbox"/>				
<input type="checkbox"/>	<input type="checkbox"/>				
<input type="checkbox"/>	<input type="checkbox"/>				

Message Complete

Step 1. Navigate to the **Meter Assignment** form. The Meter to Assets tab displays by default.

Step 2. Select a meter **Code** from the list of values.

- Description, Type, and UOM auto populate.
- An initial reading can be populated in this block if it is the same for all assets to which the meter is being assigned.

Step 3. Click the **Next Block** icon to enter assets in the **Assets** block.

- Enter individual asset Identifiers or,
- Click the Find icon to search and return assets based on the search criteria to the Assets block. Deselect any assets that should not be assigned to the specified meter by unchecking the check marks in the Delta column.
- Enter an initial reading value or use the default value provided.

Step 4. Click the **Save** icon.

ASSET TO METERS

For the Asset to Meters tab, the top portion of the form identifies the asset that will be assigned, and the bottom block identifies the meters.

NAVIGATION

- Click Maintenance
- Click Meter Assignment
- Click Asset to Meters tab

Assets						
Identifier	Descriptives*					
INV / 0105	FORD MOTOR COMPANY__TAURUS__SEDAN					
Other Identifiers						

Meters							Assignment	
Ok	Code	Description	Type	Initial Reading	Unit of Measure	Begin Date	End Date	
<input checked="" type="checkbox"/>	ODOMETER2	ODOMETER 2	ABSOLUTE	5000	M			
<input type="checkbox"/>								
<input type="checkbox"/>								
<input type="checkbox"/>								
<input type="checkbox"/>								
<input type="checkbox"/>								
<input type="checkbox"/>								
<input type="checkbox"/>								
<input type="checkbox"/>								

Message Complete

Step 1. Navigate to the **Meter Assignment** form. The Meter to Assets tab displays by default.

Step 2. Click the **Asset to Meters** tab.

Step 3. Enter an asset identifier in the **Identifier** field.

- Optionally, search for and retrieve the desired assets by clicking the Find icon. Each asset that meets the search criteria will be returned to the form as a separate line item; use the scroll bar to define the meter assignments for each asset.

Step 4. Click the **Next Block** icon to associate one or more meter definitions in the **Meters** block.

Step 5. Select a meter **Code** from the list of values.

- Description, Type, and UOM auto populate.
- The initial meter reading is populated by default but can be overwritten before saving.

Step 6. Click the **Save** icon.

METERS TO ASSETS

For the Meters to Assets tab, the top portion of the form identifies one or more meters to be assigned and the bottom block identifies one or more assets that are to be associated to the meter.

NAVIGATION

- Click Maintenance
- Click Meter Assignment
- Click Meters to Assets tab

Meter Assignment - asmd2070

Meter to Assets Asset to Meters **Meters to Assets**

Meters

Code	Description	Type	Unit of Measure	Initial Reading*	Assignment	
					Begin Date	End Date
ODOMETER2	ODOMETER 2	ABSOLUTE	MI	5000		

*The initial readings in this column will be applied to all assets queried below without the ability to change the value for individual assets on this form. If you need to record different Initial Readings for each asset please use the Meter to Assets tab.

Assets

Ok	Δ	Identifier	Descriptives*	Other Identifiers
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	INV / 0323	FORD MOTOR COMPANY__TAURUS__SEDAN	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	INV / 0324	FORD MOTOR COMPANY__TAURUS__SEDAN	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	INV / 0325	FORD MOTOR COMPANY__TAURUS__SEDAN	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>

Message Complete

Step 1. Navigate to the **Meter Assignment** form. The Meter to Assets tab displays by default.

Step 2. Click the **Meters to Assets** tab.

Step 3. Select a meter **Code** from the list of values.

- Description, Type, and UOM auto populate.
- The initial reading entered in this block will apply to all assets to which the meter is being assigned.

Step 4. Add additional **Codes** as desired.

- Click the **Insert** icon to add additional line items.

Step 5. Click the **Next Block** icon to enter assets in the **Assets** block.

- Enter individual Asset Identifiers or,
- Click the Find icon to search and return assets based on the search criteria to the Assets block. Deselect any assets that should not be assigned to the specified meter by unchecking the check marks in the Delta column.

Step 6. Click the **Save** icon.

MODIFY METER ASSIGNMENTS

Use the Meter Assignment form to not only create new assignments but to modify existing assignments as well. Assignments can be added or deleted from an existing meter assignment.

ADD ADDITIONAL METER ASSIGNMENTS

Step 1. Navigate to the **Meter Assignment** form. The Meter to Assets tab displays by default.

Step 2. Click the **Asset to Meters** tab.

Step 3. Enter a specific asset or click the **Find** icon to search and return assets based on the search criteria.

Step 4. Click the **Next Block** icon to navigate to the **Meters** block.

Step 5. In the **Code** field, place the cursor in a blank field and select a meter **Code** from the list of values.

- If no blank lines display, then click the Insert icon to display a new line.

Step 6. Click the **Save** icon.

DELETE METER ASSIGNMENTS

Step 1. Navigate to the **Meter Assignment** form. The Meter to Assets tab displays by default.

Step 2. Click the **Asset to Meters** tab.

Step 3. Enter a specific asset or click the **Find** icon to search and return assets based on the search criteria.

Step 4. Click the **Next Block** icon to navigate to the **Meters** block.

Step 5. In the **Code** field, place the cursor in any field of the line to be removed.

Step 6. Click the **Remove Record** icon.

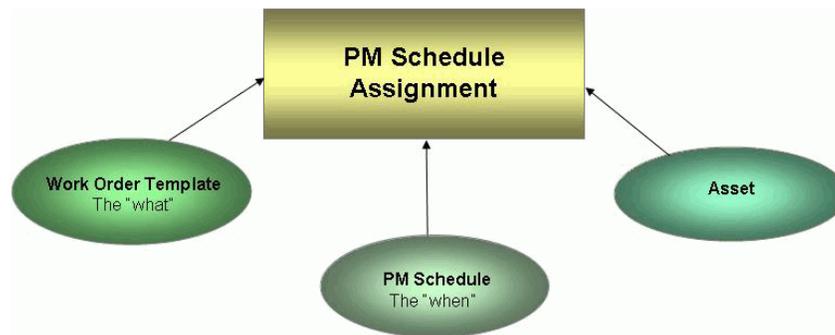
Step 7. Click the **Save** icon.

PM SCHEDULE ASSIGNMENT

The PM Schedule Assignment enables users to connect PM Schedules to assets that require routine maintenance. This form identifies what maintenance should be performed and when, for one or more assets. This multi-tab form allows users to:

- Assign PM Schedules to Assets – one or more PM Schedules to one or more assets
- Assign an Asset to PM Schedules – one asset to one or more PM Schedules
- Assign a PM Schedule to Assets – one PM Schedule to one or more assets

These separate tabs are essential as most assets will require multiple PM Schedules.



NAVIGATION

- Click Maintenance
- Click PM Schedule Assignment

PM Schedule		Assignment	
Name	Template Name	Begin Date	End Date
FORD - 5K	5000 MILE MAINTENANCE		

Ok	Δ	Identifier	Descriptives*	Other Identifiers
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	INV / 0105	FORD MOTOR COMPANY__TAURUS__SEDAN	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	INV / 0124	FORD MOTOR COMPANY__TAURUS__SEDAN	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	INV / 0125	FORD MOTOR COMPANY__TAURUS__SEDAN	
<input type="checkbox"/>	<input type="checkbox"/>			
<input type="checkbox"/>	<input type="checkbox"/>			
<input type="checkbox"/>	<input type="checkbox"/>			
<input type="checkbox"/>	<input type="checkbox"/>			

Message Complete

Step 1. Navigate to the **PM Schedule Assignment** form. The PM Schedules to Assets tab displays by default.

Step 2. In the **Name** field select the PM Schedule Name from the list of values. (e.g., Ford F150 - 15K Checkup).

Step 3. In the Template **Name** field select a work order template from the list of values (e.g., 12M/15K Servicing).

Step 4. Click the **Next Block** icon to enter assets in the **Assets** block. This section of the form is where users will select assets that should be assigned to the schedule.

- Enter individual asset Identifiers or,
- Click the Find icon to search and return assets based on the search criteria to the Assets block. Deselect any assets that should not be assigned by unchecking the check marks in the Delta column.

Step 5. Click the **Save** icon.

ASSET TO PM SCHEDULES

For the Asset to PM Schedules tab, the top portion of the form identifies the asset that will be assigned, and the bottom block identifies the PM Schedules.

NAVIGATION

- Click Maintenance
- Click PM Schedule Assignment
- Click Asset to PM Schedules tab

The screenshot shows the 'PM Schedule Assignment - asmd2050' window with the 'Asset to PM Schedules' tab selected. The form is divided into two main sections: 'Assets' and 'PM Schedules'.

Assets Section:

- Identifier:** INV / 0111
- Descriptives*:** FORD MOTOR COMPANY__TAURUS__SEDAN
- Other Identifiers:** (Empty dropdown menu)

PM Schedules Section:

PM Schedules			Assignment	
Ok	Name	Template Name	Begin Date	End Date
<input checked="" type="checkbox"/>	FORD - 5K	5000 MILE MAINTENANCE		
<input type="checkbox"/>				

Message: Complete

Step 1. Navigate to the **PM Schedule Assignment** form. The PM Schedules to Assets tab displays by default.

Step 2. Click the **Asset to PM Schedules** tab.

Step 3. Enter an asset identifier in the **Identifier** field.

- Optionally, search for and retrieve the desired assets by clicking the Find icon. Each asset that meets the search criteria will be returned to the form as a separate line item; use the scroll bar to define the PM Schedule assignment for each asset.

Step 4. Click the **Next Block** icon to associate one or more PM Schedule definitions in the **PM Schedules** block.

Step 5. Click the **Save** icon.

PM SCHEDULE TO ASSETS

For the PM Schedule to Assets tab, the top portion of the form identifies the PM Schedule that will be assigned, and the bottom block identifies the assets.

NAVIGATION

- Click Maintenance
- Click PM Schedule Assignment
- Click PM Schedule to Assets tab

The screenshot shows the 'PM Schedule Assignment - asmd2050' window with the 'PM Schedule to Assets' tab selected. The form is divided into two main sections: 'PM Schedule' and 'Assets'.

PM Schedule Section:

PM Schedule		Assignment	
Name	Template Name	Begin Date	End Date
FORD - 5K	5000 MILE MAINTENANCE		

Assets Section:

Ok	Identifier	Descriptives*	Other Identifiers
<input checked="" type="checkbox"/>	INV / 0123	FORD MOTOR COMPANY__TAURUS__SEDAN	
<input type="checkbox"/>			

Message: [Empty text box]

Step 1. Navigate to the **PM Schedule Assignment** form. The PM Schedules to Assets tab displays by default.

Step 2. Click the **PM Schedule to Assets** tab.

Step 3. Select a PM Schedule **Name** from the list of values.

Step 4. Click the **Next Block** icon to enter assets in the **Assets** block.

- Enter individual asset Identifiers or,
- Click the Find icon to search and return assets based on the search criteria to the Assets block. Deselect any assets that should not be assigned to the specified PM Schedule by unchecking the check marks in the Delta column.

Step 5. Click the **Save** icon.

MODIFY PM SCHEDULE ASSIGNMENTS

Use the PM Schedule Assignment form to not only create new assignments but to modify existing assignments as well. Assignments can be added or deleted from an existing PM Schedule assignment.

ADD ADDITIONAL PM SCHEDULE ASSIGNMENTS

- Step 1.** Navigate to the **PM Schedule Assignment** form. The PM Schedules to Assets tab displays by default.
- Step 2.** Click the **Asset to PM Schedules** tab.
- Step 3.** Enter a specific asset or click the **Find** icon to search and return assets based on the search criteria.
- Step 4.** Click the **Next Block** icon to navigate to the **PM Schedules** block.
- Step 5.** In the **Name** field, place the cursor in a blank field and select a PM Schedule **Name** from the list of values.
 - If no blank lines display, then click the Insert icon to display a new line.
- Step 6.** Click the **Save** icon.

DELETE PM SCHEDULE ASSIGNMENTS

- Step 1.** Navigate to the **PM Schedule Assignment** form. The PM Schedules to Assets tab displays by default.
- Step 2.** Click the **Asset to PM Schedules** tab.
- Step 3.** Enter a specific asset or click the **Find** icon to search and return assets based on the search criteria.
- Step 4.** Click the **Next Block** icon to navigate to the **PM Schedules** block.
- Step 5.** In the **Name** field, place the cursor in any field of the line to be removed.
- Step 6.** Click the **Remove Record** icon.
- Step 7.** Click the **Save** icon.

ROUTINE ACTIVITIES

METER READINGS

The Meter Readings form enables users to record meter reading results for assets. The multi-tab form allows users to:

- **Record Meter Readings to Assets** – this tab would be used if a user needed to record odometer results for several different assets
- **Record Asset to Meter Readings** – this tab would be used when there is one asset with several defined meters and all meter readings can be recorded at one time

METER READING TO ASSETS.

NAVIGATION

- Click Maintenance
- Click Meter Reading

Step 1. Navigate to the **Meter Readings** form. The Meter Readings to Assets tab displays by default.

Step 2. Select a meter **Code** from the list of values.

- Description, Type, and UOM auto populate.

Step 3. Click the **Next Block** icon to enter assets in the **Assets** block.

- Enter individual asset Identifiers (Descriptives field auto-populates) or,
- Click the Find icon to search and return assets based on the search criteria to the Assets block.
- Deselect any assets that should not be assigned to the specified meter reading by unchecking the check marks in the Delta column. Note that only the last reading can be adjusted/changed.

Step 4. Tab to the **Reading** field and enter a value.

Step 5. Tab to the **Date** field. The Date defaults to the current date.

- If necessary, the value of the Date field may be changed.
- Note that a meter reading can be backdated only if the reading value entered is higher than readings recorded prior to the date of the backdated reading and lower than any readings recorded after the backdated reading.

Step 6. Tab to the **Additional Information** field and double click if field is extended (optional).



Step 7. Double click in the **Document** field and enter document type, identifier, and organization then click the Save icon to save the information and close the pop-up box (optional).

Step 8. Click the **Save** icon.

ASSET TO METER READINGS

For the Asset to Meter Readings tab, the top portion of the form identifies the asset for which the readings will be entered, and the bottom block identifies the meter readings.

NAVIGATION

- Click Maintenance
- Click Meter Reading
- Click Asset to Meter Readings tab

Meter Reading - asmd2080

Meter Readings to Assets | **Asset to Meter Readings**

Assets

Identifier: INV / 0123 Descriptives*: FORD MOTOR COMPANY__F100__TRUCK

Other Identifiers: [Dropdown]

Meters

Ok Code	Description	Type	Reading	UoM	Date	Document*	Additional Information*
<input checked="" type="checkbox"/>	ODOMETER	ABSOLUTE	13500	MI	04/25/2008	CUSTODIAN RECEIPT__01	
<input type="checkbox"/>							
<input type="checkbox"/>							
<input type="checkbox"/>							
<input type="checkbox"/>							
<input type="checkbox"/>							
<input type="checkbox"/>							
<input type="checkbox"/>							
<input type="checkbox"/>							
<input type="checkbox"/>							

Message Complete

Step 1. Navigate to the **Meter Readings** form. The **Meter to Assets** tab displays by default.

Step 2. Click the **Asset to Meter Readings** tab.

Step 3. Enter an asset identifier in the **Identifier** field.

- Descriptives and any existing meter readings display.
- Optionally, search for and retrieve the desired assets by clicking the Find icon. Each asset that meets the search criteria will be returned to the form as a separate line item.

Step 4. Click the **Next Block** icon to record one or more meter readings in the **Meters** block.

Step 5. Select the first blank line in the **Meters** block or click on the Insert icon to add a new record.

- Optionally, select an existing meter reading record and edit the reading. An existing reading may only be updated if the reading value entered is higher than readings recorded prior to the date of the updated reading and lower than any readings recorded after the updated reading.

Step 6. Select a meter **Code** from the list of values.

- Description, Type, and UOM auto populate.

Step 7. Tab to the **Reading** field and enter a value.

Step 8. Tab to the **Date** field. The Date defaults to the current date.

- If necessary, the value of the Date field may be changed.
- Note that a meter reading can be backdated only if the reading value entered is higher than readings recorded prior to the date of the backdated reading and lower than any readings recorded after the backdated reading.

Step 9. Tab to the **Additional Information** field and double click if field is extended (optional).

Step 10. Double click in the **Document** field and enter document type, identifier, and organization then click the Save icon to save the information and close the pop-up box (optional).

Step 11. Click the **Save** icon.

RUN PM SCHEDULER

The PM Scheduler can be run manually or it can be set to run automatically. The scheduler will determine if, based on recorded meter readings or dates/elapsed days, any assets fulfill their assigned PM Schedules and require maintenance. If an asset requires maintenance and the **Generate Work Order?** checkbox was checked, a work order will be generated based on the work order template that was associated to the asset during the PM assignment process.

NAVIGATION

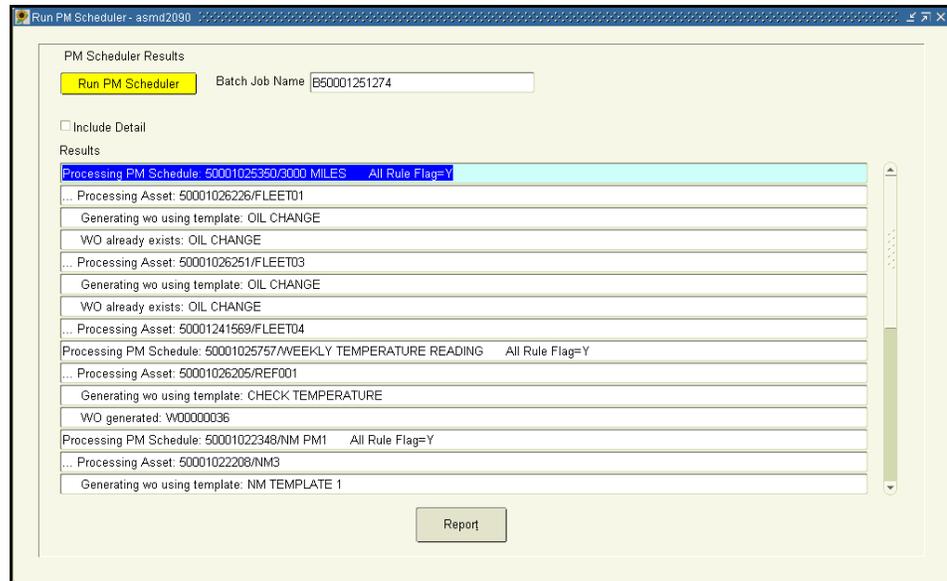
- Click Maintenance
- Click Run PM Scheduler

The screenshot shows a web application window titled "Run PM Scheduler - asmd2090". The main content area is titled "PM Scheduler Results". It features a yellow "Run PM Scheduler" button, a text input field for "Batch Job Name", and an unchecked "Include Detail" checkbox. Below these is a table with 15 rows under the heading "Results". A "Report" button is located at the bottom right of the form area.

Step 1. Navigate to the **Run PM Scheduler** form.

Step 2. Optionally, select the checkbox to **Include Detail** for the PM Scheduler results.

Step 3. Click the **Run PM Scheduler** button.



Step 4. Click the **Report** button to generate a report output of the form details.



GENERATE WORK ORDERS

Work orders (WOs) can be created manually or generated via the PM Scheduler. WOs can only be generated from the PM Scheduler for routine maintenance that has been previously defined in a work order template. Additionally,

- Work orders for random/urgent repairs must be created manually
- Work orders identify the work order cause and type and list the tasks that are to be performed
- Work orders provide areas for costs, dates, comments and meter reading results that are acquired during the maintenance activity

AUTO-GENERATE WORK ORDERS

NAVIGATION

- Click Maintenance
- Click Work Order

The screenshot shows the 'Work Order' form with the following data:

Work Order	
Number	W50001022403
Description	5000 MILE MAINTENANCE TEMPLATE
Cause Type	PREVENTATIVE
Type	MAINTENANCE
Template Name	5000 MILE MAINTENANCE
Template Description	5000 MILE MAINTENANCE TEMPLATE
Status	PLANNED
Scheduled Start Date	05/09/2008
Identifier	INV / 0105
Other Identifier	
Comments	

Work Order Line Items				
Ok	Sequence	Task	Description	Completed?
<input checked="" type="checkbox"/>	1	OILCHG	OIL CHANGE	<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>

Meter						
Code	Description	Reading	Unit of Measure	Date	Document*	Additional Information*

Step 1. Navigate to the **Work Order** form.

Step 2. In the **Number** field select a work order number from the LOV.

- The “W” prefix identifies that this is the WO that was generated by running the PM Scheduler.
- See “Setting Default Prefixes” on page 11-30., for additional information on the use of prefixes.

Step 3. Press the **Tab** key and the form’s fields auto-populate.

Step 4. Click the **Save** icon.

SETTING DEFAULT PREFIXES

Note that a default prefix can be used for auto-generated work orders as follows:

NAVIGATION

- Click Admin
- Click User Extensibility
- Click Enter Registered Application Parameter Values

Parameters For: REGISTERED APPLICATIONS

Application	Category	Code	Description	Set?
ASSETS	DEFAULT	DPREFWOF	Default prefix for generating forecasted work order numbers	<input type="checkbox"/>
			Value	
ASSETS	DEFAULT	DPREFWOIN	Default prefix for generating work order instance numbers	<input type="checkbox"/>
			Value	
ASSETS	DEFAULT	DPREFWOTM	Default prefix for generating work order template numbers	<input type="checkbox"/>
			Value	
			Value	<input type="checkbox"/>
			Value	<input type="checkbox"/>
			Value	<input type="checkbox"/>
			Value	<input type="checkbox"/>
			Value	<input type="checkbox"/>
			Value	<input type="checkbox"/>

Reset Value

MANUALLY-GENERATE WORK ORDERS

NAVIGATION

- Click Maintenance
- Click Work Order

Step 1. Navigate to the **Work Order** form.

Step 2. In the **Number** field enter a Work Order Number or enter a period (.) in the Number field and press the Tab key to auto generate a Work Order Number.

Step 3. Select a **Template Name** from the list of values or choose a work order cause type and order type.

Step 4. Update the Status by selecting a value from the LOV.

Step 5. Enter **Scheduled Start** and **End Dates** and any necessary **Comments**.

Step 6. Enter the asset identifier associated to the work order. This field is not required.

Step 7. Click the **Next Block** icon to move to the **Work Order Line Items** block.

- The middle block of the form identifies the routine tasks that need to be performed in order to complete the work order.
- The **Completed?** boxes should be left blank during the definition process. These boxes will be used to check off each task as it is completed by the technician.

Step 8. In the **Task** field select tasks from the list of values.

- Tasks may be entered manually rather than selected from the LOV if the Administrator has set the Parameter allowing Tasks to be created by users.

Step 9. Add as many tasks as is required to complete the work order.

Step 10. Update the Sequence if required by overwriting the number that displays in the field.

Step 11. Click the **Next Block** icon to move to the **Meter** block.

- The bottom block of the form provides an area for users to enter the meter readings at the time of service
- Meter readings are not required from the Work Order form

Step 12. Click the **Save** icon when all information has been added.

COMPLETE WORK ORDERS

After generating a work order the work order can be used to perform the tasks as they are defined on the work order. Once the tasks are completed, then the work order is ready to be **completed** and finalized in the system.

NAVIGATION

- Click Maintenance
- Click Work Order

The screenshot shows a software interface for managing work orders. The main form is titled "Work Order" and contains the following data:

- Work Order Details:**
 - Number: W50001022403
 - Description: 5000 MILE MAINTENANCE TEMPLATE
 - Cause Type: PREVENTATIVE
 - Type: MAINTENANCE
 - Additional Information*:
 - Identifier: INV / 0105
 - Other Identifier:
 - Template Name: 5000 MILE MAINTENANCE
 - Template Description: 5000 MILE MAINTENANCE TEMPLATE
 - Status: PLANNED
 - Cost: \$75.00
 - Scheduled Start Date: 05/09/2008
 - Scheduled End Date: 05/10/2008
 - Actual Start Date: 05/09/2008
 - Actual End Date: 05/10/2008
 - Comments: FORD MOTOR COMPANY TAURUS SEDAN
- Work Order Line Items:**

Ok	Sequence	Task	Description	Completed?	Additional Information*
<input checked="" type="checkbox"/>	1	OILCHG	OIL CHANGE	<input checked="" type="checkbox"/>	
<input type="checkbox"/>				<input type="checkbox"/>	
<input type="checkbox"/>				<input type="checkbox"/>	
- Meter:**

Code	Description	Reading	Unit of Measure	Date	Document*	Additional Information*
ODOMETER	ODOMETER 2	4900	MI	05/09/2008 04:46:16	CUSTODIAN RECEIPT_010	Used upgraded oil, type T15C

Step 1. Navigate to the **Work Order** form.

Step 2. Click the **Find** icon.

Step 3. In the **Number** field enter a desired WO name.

Step 4. Click the **Find** icon to retrieve the work order.

Step 5. In the **Work Order** block define the following:

- Actual Start Date
- Actual End Date
- Cost
- Click the **Status** field and select **COMPLETED**

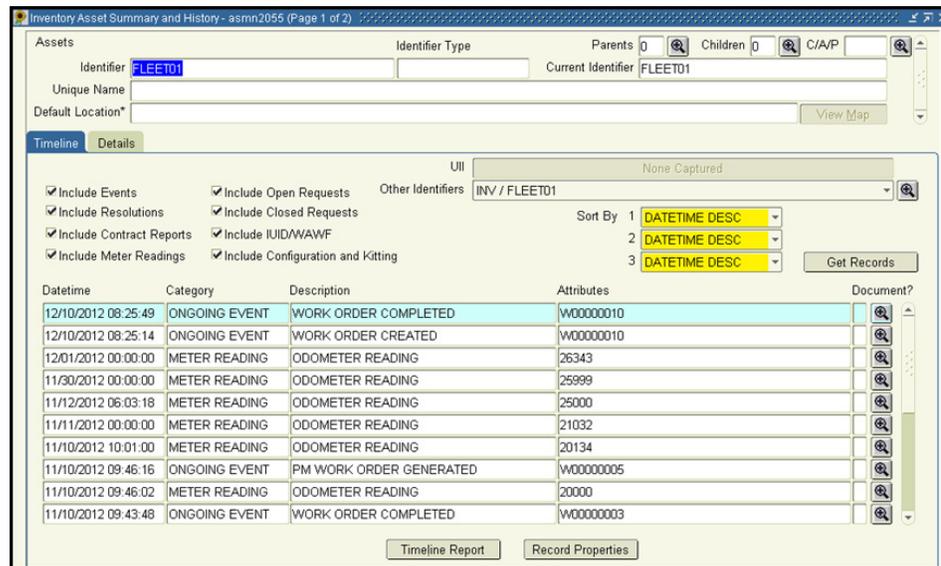
Step 6. In the **Work Order Line Items** block, check the **Completed?** checkbox by each completed task.

Step 7. In the **Meter** block, in the **Code** field, use the list of values to select one or more assigned meters to record readings, if applicable.

Step 8. Click the **Save** icon to save the work order.

Step 9. If clicking the **Summary and History** icon one will notice that the work order is now complete for asset **FLEET01**.

- Maintenance transactions create timeline events that allow users to follow what has happened to a given asset for audit purposes.



- Click the magnifying glass icon to view the meter reading.

Meter Reading - asmd2080

Asset to Meter Readings

Assets

Identifier: INV//FLEET01 Descriptives*: FORD_TAURUS_SEDAN

Other Identifiers: [Dropdown]

Meters

Ok Code	Description	Type	Reading	UOM	Date	Document*	Additional Information*
<input type="checkbox"/> OM	ODOMETER READING	ABSOLUTE	26343	MI	12/01/2012 12:00:00 AM		
<input type="checkbox"/>							
<input type="checkbox"/>							
<input type="checkbox"/>							
<input type="checkbox"/>							
<input type="checkbox"/>							
<input type="checkbox"/>							
<input type="checkbox"/>							
<input type="checkbox"/>							
<input type="checkbox"/>							

Message: [Text Area]

MAINTENANCE REPORTS

The Sunflower Enterprise includes the following reports for managing Maintenance.

- Work Order (Global Information) Report
- Work Order by Status Report
- Work Order by Schedule Report
- Work Order by Asset Report
- PM Scheduler Logs Report
- Work Order Template Report
- Meter Reading Report

ABOUT REPORTS

Each Interest Asset module has its own set of reports. Launch Reports by performing any of the following:

- Use the particular Interest Asset module's menu and selecting Reports from the drop down list (i.e. **Maintenance > Maintenance Reports**).
- Select the Reports drop down list and choosing the appropriate report module (i.e. **Reports > Maintenance Reports**).
- Select the **Sunflower Enterprise Reports** hyperlink from the **Production Screen**, which opens the Reports Main Menu screen. Then select the appropriate report module (i.e. **Maintenance Reports**).

The Sunflower Enterprise database is queried whenever a report is created and executed. Reports display real-time information. Therefore, an afternoon report will differ from a morning report by reflecting any changes made during the day. This is also true for the Previously Run Reports feature, which can rapidly speed up repetitive reporting.

There are several output options available for reports.

- PDF (using Adobe Acrobat)
- HTML
- Text (not available for all reports)

Output choices depend upon the report selected. Acrobat and HTML are standard options provided for the vast majority of reports.

OVERVIEW

Seven reports are available in Sunflower Assets 5.0 in order to address the concerns of Maintenance personnel. The following pages provide an overview of each report and a report illustration.

- Work Order (Global Information) Report
- Work Order by Status Report
- Work Order by Schedule Report
- Work Order by Asset Report
- PM Scheduler Logs Report
- Work Order Template Report
- Meter Reading Report

NOTE: The report parameters page provides a wealth of fields that may be chosen to utilize to group, sort, and more in order to generate a report with as much or as little details as required. The report illustrations shown use a minimum amount of report criteria. It is up to the user to decide on the appropriate criteria to use to generate a meaningful report for consumption.

Work Order (Global Information) Report

Use the **Work Order (Global Information) Report** to generate a report detailing available work orders.

Work Order by Status Report

Use the **Work Order by Status** report to generate a report for work orders grouped by status. Generate this report in either a summary or detail view. The summary report view displays the number of work orders per status area while the detail view will display the work order header information in addition to the number of work orders per status.

Work Order by Schedule Report

Use the **Work Order by Schedule** report to display all work orders that have been scheduled for a specified date range.

Work Order by Asset Report

Use the **Work Order by Asset** report to show a summary or detail view of work orders by asset. The summary level displays the number of work orders against the asset and the associated cost of the work order while the detail view displays the work order header information for each asset as well as the summary information.

Work Order Template Report

Use the **Work Order Template** report to display the details of one or more work order templates.

PM Scheduler Logs Report

Use the **PM Scheduler Logs** report to generate a detail or summary view of work orders generated through the PM Scheduler.

Meter Reading Report

Use the **Meter Reading** Report to generate meter reading details for a specific asset, catalog or location.