

Metered PMs

This document describes meter based PM scheduling based upon equipment or vehicle use rather than a fixed number of days, weeks, months or years. These screens are involved:

1. **Preventive Maintenance** –to set up interval between PMs based on miles/hours/cycles.
2. **Equipment** – enter weekly usage (for more accurate scheduling) and maximum meter value (to account for meter recycling)
3. **Meter Readings** – You must periodically (e.g.: daily or weekly) enter each equipment's hour meter value or mileage. Benchmate uses this information to adjust the Schedule Date for meter based PMs based on actual equipment use and remaining hours or miles to the next PM.

Preventive Maintenance Screen

The PM screen contains most of information necessary to schedule equipment and vehicle PMs based on usage. (Each equipment or vehicle can have several PMs.) These entries are:

- LAST DATE
- PROJECTED DATE
- INTERVAL (2 fields)
- SCH DATE
- LAST PM
- NEXT PM
- LAST METER
- MAX DAYS BETWEEN PMs

Job ID: PM-0008
LAST DATE: 01/16/2007
INTERVAL: 2500 HOURS
PROJ DATE: 01/15/2008
SCH DATE: 01/15/2008
STATUS: SCHD
PRIORITY: 3 LOTO?
LEAD SHOP: MECH
ASSIGNED TO:
EST TIME: 0:00 0:00
EST PARTS: 0:00 0:00

METER
LAST PM: 54500 HOURS NEXT PM: 57000 HOURS
LAST METER: 78901 HOURS ON: 01/15/2008
MAX DAYS BETWEEN PMs: 999 WKLY USE: 168 HRS/MILES/CYCLES

LAST DATE

The LAST DATE serves as a base for calculating the initial PROJ & SCH DATES. When a date is entered, Benchmate calculates the PROJ & SCH DATE dates based on the interval (hours or miles) and estimated usage.

For cycles, Benchmate sets the PROJ & SCH DATE to the LAST DATE + MAX DAYS or LAST DATE + 1 YEAR if there is no MAX DAYS. Note: PMs based on CYCLES are treated specially as it is difficult estimate the number of days before next PM is due. By setting a maximum interval, it is assured that the PM will be scheduled. When the meter value exceeds the NEXT PM value, Benchmate will change the SCH DATE to the current date so it will immediately appear on current job schedules.

INTERVAL

This consists of the number of hours/miles/cycles and the units themselves. Some examples:

- 3000 MILES
- 1000 HOURS
- 10000 CYCLES

PROJ DATE

The PROJECTED DATE is calculated based on estimated daily use for this equipment and miles/hours/cycles remaining. You may not enter a date in this field.

SCH DATE

The SCHEDULED DATE is the actual date the PM is to be done. Initially the SCH DATE is identical to the PROJ DATE. However, you may modify the SCH DATE to indicate when you want to do the job.

LAST PM

You must place a value in this field when setting up this PM. Benchmate will then update this value each time the job is closed (Service Log screen).

NEXT PM

Benchmate adds the INTERVAL to the LAST PM to determine the hours/miles/cycles at which the next PM should be performed.

LAST METER

These fields show the equipment hours/miles/cycles and date the last time the meter was recorded or the job closed.

MAX DAYS BETWEEN PMs

This field shows the maximum number of days allowed between PMs. Benchmate will not schedule a PM past the LAST DATE + MAX DAYS.

WKLY USE

This value is copied from the equipment screen to show the estimated equipment or vehicle use. It is used to get a better estimate of the number of days remaining before a PM when the equipment is typically used for only a few, predicable hours weekly. It is not used for CYCLES.

Equipment Screen

HRS/WK

The HRS/WK field helps to estimate the remaining days to the next PM if the equipment is usually operated for just a few hours daily. The example shows 168 hours per week which is 100% use.

BENCHMARK - EQUIPMENT SCREEN - SORTED BY EQUIPMENT ID

File View Screen Reports Validation Files Setup Special Critical Jobs Help

EQUIP SVC LOG WORK OR TRBL CL PM PROC SPARES VENDOR PURCHASE

EQUIP ID: GEN-1003 NAME: GENERATOR, GAS LOTO?

MFGR: CATERPILLAR

ACCOUNT: MODEL: S/N: 72B01035

COST CTR: SVC CONTACT:

BLDG: ZONE 2

LOCN: 2-379

NAMEPLATE DATA: SPECIAL INSTRUCTIONS - PRINT ON JOB TICKET?

GEN SN: 87675, CAT #6P41675
MOD #300-683361111
TYPE #22182, 300 KW, 375 KVA, 3 PH, 60
HZ, PF .8, 277/480 VOLTS

HRS/WK: 168 MAX METER:

METER

	DATE	READING	FUEL	BY
1	01/15/2008	78901	0.00	BILL W
2				
3				
4				
5				
6				
7				
8				

TEXT COMPONENTS SPARES HISTORY **METER** WARRANTY DOCUMENTS

Monday, October 13, 2008 NUM

F2 Add
F3 Edit
F4 Delete
F5 Window
F6 Print
F7 Next
F8 Prev
F9 Find

The PM Schedule Date is adjusted each time the equipment's run time meter is entered. For example, if the PM were scheduled in hours – say an interval of 1000 HOURS – and the equipment were used 40 hours per week (5.7 hours/day), Benchmate would initially schedule PM after 175 days (1000 hours/5.7 hours per day = 175 days) from the last date the meter was read.

Notes:

1. Weekly use must be a minimum of 4 hours or 25 miles. Otherwise, Benchmate will assume 24 hours daily or 35 miles weekly.
2. Weekly use is not used for CYCLES scheduling.

MAX METER

The maximum meter reading should be entered if it is likely the cumulative run-time will exceed the maximum meter value. If a value is entered, Benchmate will restart at zero should the cumulative run-time be exceeded.

METER WINDOW

The fifty most recent meter readings and associated dates are shown. This list is updated each time a meter value is entered on the Meter Readings screen or Forms.

Meter Data Entry

The equipment meter values (hours/miles/cycles) must be entered regularly for Benchmate to schedule PM service based on actual equipment usage. This can be done through the Meter Readings Screen, or the Meter Entry Form.

METER READINGS SCREEN

This screen is selected from the Menu Bar (**Screens** → **METER READINGS**).

BENCHMATE - METER READINGS SCREEN - SORTED BY EQUIP ID

File View Screens Reports Validation Files Setup Special Help

EQUIP SVC LOG WORK OR TRBL CL PM PROC SPARES VENDOR

EQUIPMENT METER READINGS (DATA ENTRY SCREEN)

EQUIP ID: NC-6295 N/C MACHINE

DATE: 08/29/2003

READING: 400

FUEL: 50.00

BY: ran

F2 Add
F3 Edit
F4 Delete
F6 Print

Each screen corresponds to a one meter reading for an equipment or vehicle. The following data must be entered.

EQUIP ID

This entry is validated against the Equipment file.

DATE

Represents the actual date the equipment or vehicle meter was read. While Benchmate inserts the current date into this field, it can be changed if the actual date is different.

READING

The value displayed on the equipment meter or vehicle odometer.

FUEL

The gallons (or liters) of fuel added. This field is optional. This information is used to prepare a Fuel Consumption report.

BY

Indicates the person entering the data.

The Meter Readings List View presents a 'spread sheet' like view of the meter readings. It can be sorted by either DATE or by EQID/DATE using **F9 Find**.

EQUIP ID	EQ NAME	DATE	READIN	FUE	I
CMP-1002	AIR COMPRESSOR	02/16/2001	46100	0.00	
CMP-1002	AIR COMPRESSOR	02/20/2001	46250	0.00	
CMP-1002	AIR COMPRESSOR	02/28/2001	46500	0.00	

METER ENTRY FORM

This screen can be used to:

1. Quickly enter meter data using a list view rather than one screen at a time and
2. Correct the most recent meter readings.

It is selected from the Menu Bar (Special → METER ENTRY FORM). It displays the current and previous meter reading for each equipment on the equipment list. You may create 10 lists. Select the form using the List ID field.

	EQID	NAME	CURRENT			BY	PF	
			DATE	METER	FUEL		DATE	METEI
0	B-2316	BUS, RENT	09/01/2003	4321	45.00		08/07/2003	35231
1	B-2321	BUS, RENT	09/01/2003	6678	12	ran	08/07/2003	12120
2	B-8214	BUS, RENT	09/01/2003	12345		ran	08/06/2003	0
3	B-8221	BUS, RENT					08/07/2003	93299
4	B-8233	BUS, RENT					09/02/2003	25
5	NC-6296	N/C MACHI					08/31/2003	0
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								

Buttons to the right of the form provide for creating forms and data entry.

The form is divided into three vertical regions:

1. The first contains the equipment information – the EQID & NAME. Entries must match up with equipment on the Benchmark Equipment screen.

2. The **CURRENT** area represents the most recent meter reading for the associated equipment. These entries can be changed in necessary. If the entry is empty, the most recent reading has been moved to the **PREVIOUS** area. The empty fields can be used for a new reading.
3. The **PREVIOUS** area contains the second most recent reading for the associated equipment. It can be used to compare against the **CURRENT** information and cannot be changed.

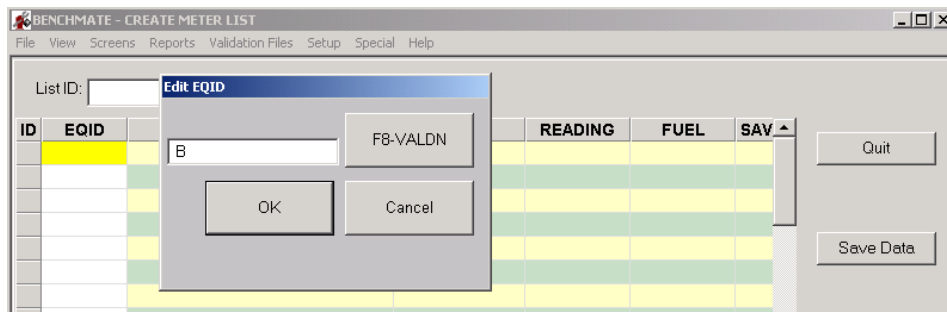
The buttons, right side of the screen, are arranged in two groups – **Data Entry** and **List Commands** – plus the **Print** button.

List Commands

The three buttons in this group create, modify and delete the equipment lists.

Create List

This button is used to create new lists. Each list is stored in the database and can be recalled for data entry. Clicking **Create List** displays an empty screen with the **EQID** column enabled for data entry.



Each **EQID** entry is validated against the Equipment file. When a valid entry is selected, the Equipment Name is copied to the list. When you click **Save Data**, you will be asked to name the list. Pick a name that is easy to remember such as “Bus Route”. The list is then saved and may be recalled at any time.

Edit List

Click this button to add, change or delete equipment on the selected list. Do not use to enter meter or fuel data.

Delete List

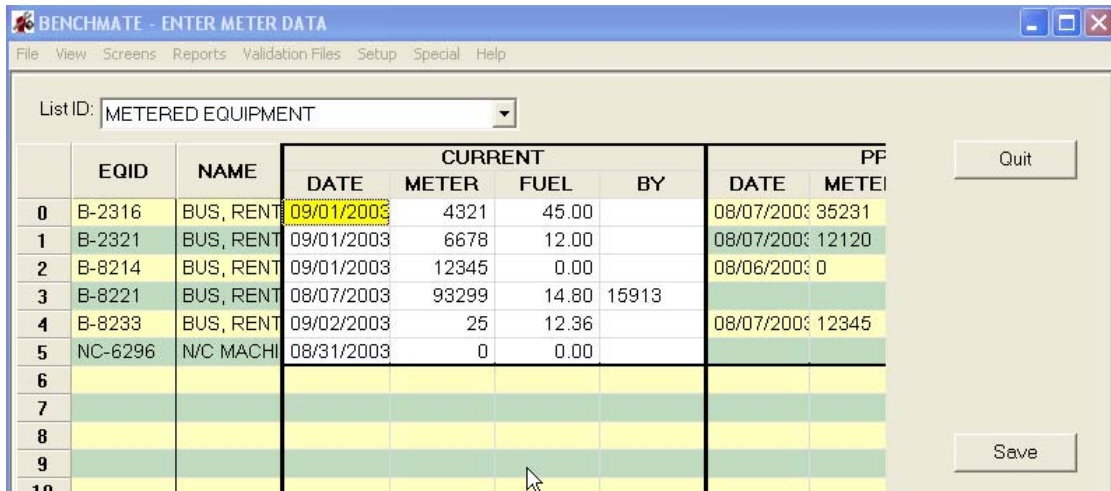
Click this button to delete the displayed list. You will be asked to confirm before the list is deleted.

Data Entry

These buttons control data entry into the meter reading fields – **DATE**, **READING**, **FUEL** & **BY**.

Enter Data

Use this button to modify **CURRENT** meter data or enter new data if an entry is empty. These entries are shown with a white background with the active field highlighted (yellow background). When you click **Save**, the modified entries will be saved and the associated **PM** screens updated.

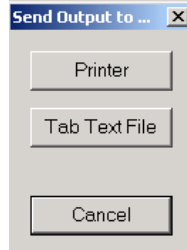


New Data

Use this button to create an empty CURRENT area for new meter data. The PREVIOUS area will show the most recent data. When the Save button is clicked, the new entries will be saved to the Meter Readings file and the associated PMs updated.

Print

Click to print the displayed list. You may send the output to either the selected printer or to a tabbed text file.



The tabbed text file can be loaded into a spreadsheet or database. A 'blank' – with only the equipment list – tabbed text form can be loaded into a database or spreadsheet for data collection. The completed form can then be downloaded into Benchmark database to update the PM schedules.

BUS LIST						
ID	EQID	NAME	DATE	READING	FUEL	
1	BUS-0035	BUS, 1995 GMC, 25 PASSENGER	01/24/2002	46500	45	
2	BUS-0039	BUS, 1996 GMC, 25 PASSENGER	00/00/0000	0	0.0	
3	BUS-0040	BUS, 1996 GMC, 50 PASSENGER	00/00/0000	0	0.0	