

PROTEUS MMX – BILL OF MATERIAL – WORK ORDER

EAGLE TECHNOLOGY, INC.



BILL OF MATERIAL – WORK ORDER

OVERVIEW

There is Bill of Material (BOM) – Work Order Enhancement on the *Asset Master* page. From the *Assets Navigator*, select an asset and click the *Perform BOM* icon.

NOTE: This feature will only work when the UL feature is On.

STEP 1 – CREATE A PART AND GIVE IT A RUNTIME LIMIT

| Proteus mmx Home Assets Inventory | Personnel Providers Purchasing Reports Service Requests Work Orders Company R | lights Active Directory KPI Settings |
|--|---|---------------------------------------|
| Quick Links Inventory - Parts >> Parts | | |
| Parts | part-nov 15-01 | |
| Details Stockroom Parts Work Orders Asset History Atta | chments | |
| Part Number part-ngy 15-01 | | |
| Part Name part-nov 15-01 | | |
| Stock Class | v | Shelf Life |
| Part Size | Manufacturer | Description part 15-01 description |
| Measurement Unit | v Part 15-01 | PM Strategy |
| SMP No. | Frequency 5 | Standard Duration |
| Machine STOP or Running | AM Standard | Frequency (AM) |
| QM Matrix No. | Kaizen Type | Kaizen No. |
| Inventory Usage | Inventory Classification | |
| | Runtime Limit 110.00 | |
| Notes | | |

STEP 2 – CREATE BOM AND ADD PARTS WHICH HAVE RUNTIME LIMITS

- The user can add a single part multiple times.
- A new field—*Component Position*—is added and the *Edit* functionality is also added in the Parts Tab.

| proteus mmx Quick Lin | Home Asse | ts Inventory Personnel Providers tory - Bill Of Materials >> Bill Of Mater | Purchasing | Reports Service Reque |
|-----------------------------|------------------------|---|------------|-----------------------|
| Bill Of Materials | | | | BOM-nov 15 |
| Details | Attachments | | | |
| ■ + - ■ = : | - • • • ~ • • • | Sort By | Sort Order | ▼ |
| Part Number | Part Name | Component Position | | |
| part-nov 15-01 | part-nov 15-01 | part-nov 15-01 | | |
| part-nov 15-01 | part-nov 15-01 | part-nov 15-01-01 | | |
| part-nov 15-02 | part-nov 15-02 | part-nov 15-02 | | |

HOW CAN THE USER ENTER DATA IN THE COMPONENT POSTION FIELD?

The user will click the *Save* icon. After selecting a part, a window will populate to enter the **component position**.

| Bill Of Materials BOM-nov 15 Details Parts Attachments Part Number Part Name Component Position part-nov 15-01 part-nov 15-01 part-nov 15-01 part-nov 15-01 part-nov 15-02 part-nov 15-02 part-nov 15-02 part-nov 15-02 Submit | | BOM-nov 15 |
|---|---------------------|--------------------------------|
| Details Parts Attachm | ents | |
| ≥ + - ≡ ≡ ≡ ≡ ≈ | Sort By | Sort Order T |
| Part Number Part Nam | e Component P | t Position |
| part-nov 15-01 part-nov | 15-01 part-nov 15-(| |
| part-nov 15-01 part-nov | 15-01 part-nov 15-(| H(1-C |
| part-nov 15-02 part-nov | 15-02 part-nov 15-0 | -02 Component Position: Submit |

| H Se | ome ettings/ | Assets Inventor Assets - Assets | y Personnel | Providers | Purchasing | Reports Serv | rice Requests | Work Orders | Company | Rights Active | Directory K | PI O Help |
|---------|-------------------|--------------------------------------|---------------|--------------------------------|----------------|-----------------------|-----------------------------|---------------------------------|---|---------------|-----------------------------|---------------------------|
| | Î | | 🕯 🎢 🗋 🖉 | | o 🐧 🔝 📗 | | 3 🔳 🔲 | Sort By Run | time Units | ▼ Sc | ort Order | * |
| | + | | asset- | Bill Of Material BOM-nov 15 | s | | | | | | | |
| | ÷ | | Asset-n | Part Number | Part Name | Component Position | Manufacturer Part Number | Current Component Runtime | Asset Runtime At Last Replacement | Runtime Limit | Last Replacement Date | Part description |
| | | | | part-nov 15-01 | part-nov 15-01 | part-nov 15-01 | P art 15-01 | 0.000000 | 0.000000 | T 110.000000 | T | part 15-01 description |
| re | | | | part-nov 15-01 | part-nov 15-01 | part-nov 15- 01-01 | Part 15-01 | 0.000000 | 0.000000 | 110.000000 | | part 15-01 description |
| id ► | * | | | part-nov 15-02 | part-nov 15-02 | part-nov 15-02 | Part 15-02 | 0.000000 | 0.000000 | 120.000000 | | part 15-01 description |

<u>STEP 3 – CREATE AN ASSET THEN ASSOCIATE THE ABOVE BOM TO IT</u>

NOTE: After the first time, never click the Save. Clicking Save will cause the data to be reset.

- Runtime Limit = Part Runtime Limit that is given in the Part Details from the Part Master page.
- Current Component Runtime = Asset Runtime (minus) Asset runtime at last replacement
- Asset Runtime at Last Replacement = The value given in Asset Runtime at part replacement (The value will reflect after the work order is closed)
- Last Replacement Date = Work Order Closed Date

LOGIC OF BOM – WORK ORDER ENHANCEMENT:

| As | sset | | Asso | ciated BOM | | |
|---------------|-----------------------------|------------------|---------------------------------|--|------------------|-----------------------------|
| Asset Name | Asset Runtime | Part Number | Current Component Runtime | Asset Runtime at Last Replacement | Runtime Limit | Last Replacement Date |
| | | - | | | | |
| Asset - 01 | At the start, it is 0 | Part – Nov 15-01 | 0-0=0 | 0 | 110 | |
| | Change 0 to 100 | | 100-0=100 | 0 | 110 | |
| | Change 100 to 110 | | 110-0=110 | 0 | 110 | |
| | | - | | | | |
| | At the start, it is 0 | Part – Nov 15-01 | 0-0=0 | 0 | 110 | |
| | Change 0 to 100 | | 100-0=100 | 0 | 110 | |
| | Change 100 to 110 | | 110-0=110 | 0 | 110 | |
| | | - | | | | |
| | At the start, it is 0 | Part – Nov 15-02 | 0-0=0 | 0 | 120 | |
| | Change 0 to 100 | | 100-0=100 | 0 | 120 | |
| | Change 100 to 110 | | 110-0=110 | 0 | 120 | |

NOTE: After associating the BOM to Assets, the **Current Component Runtime** will be equal to **Asset Runtime** for the first time (either asset runtime is 0 or 100).

STEP 1

Asset Runtime = 0

Part – Nov 15-01 = 110

Current component runtime will always be equal to \rightarrow

Asset Runtime (minus) Asset Runtime at Last Replacement

STEP 2

The user will change the asset runtime from 0 to 100, so the current component runtime will be equal to \rightarrow

Asset Runtime (minus) Asset Runtime at Last Replacement = 100-0 = 100

NOTE: The runtime limit is 110

STEP 3

In the 3rd step, the user will change the **asset runtime** to **110**, so that \rightarrow

Asset Runtime (minus) Asset Runtime at Last Replacement = 110-0 = 110

That is equal to the runtime limit.

The same formula will work for another part; Part – Nov 15-01 and Part – Nov 15-02

| STEP 4 | | | | | | |
|---|---|---|---|--|--|--|
| Click on the New | i con on BOM | screen to c | reate a wor | k order. | | |
| Proteus Marx Home Quick Links Settings | Assets Inventory Personnel sAssets - Assets | Providers Purchasing | Reports Service Requests | Work Orders Company | Rights Active Directory | Logged in as : Administr Help O Log (|
| MMX37 Test site 123 ALL-DO NOT USE April Chandigath Clinical Reference Laboratory Campus | | L A | | Sort By Runtime Units | ▼ Sort Order | |
| Contractors ASTA-Residence DT1009-1009 Central Crossroads Academy DT1015-1015 Central DT1015-1015 Central DT1080 Quality Hill | + Asset-n | Part Number Part Name | Component Manufacture Position Part Number | er Current Asset Runtin Component At Last Runtime Replacemen | ne Runtime Limit Last Replacement Date | Part description |
| Academy T10C-Ten Central Parking Garage T10W - 10th & | | part-nov 15-01 part-nov 15-0 | 1 part-nov 15-01 Part 15-01 | 110.000000 0.000000 | 110.000000 | part 15-01 description |
| Wyandotte Garage JT1308-1308 Pennsylvania McGuff T11400-1400 Baltimore DT14400-1400 Baltimore | | part-nov 15-01 part-nov 15-0 | 1 part-nov 15- Part 15-01 01-01 | 110.000000 0.000000 | 110.000000 | part 15-01 description |
| ← ← DI1440-1440 E. 42.00 | | part-nov 15-02 part-nov 15-0 | 2 part-nov 15-02 Part 15-02 | 110.000000 0.000000 | 120.00000 | part 15-01 description |
| | | | | | | |
| | | | | | | |

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As the user clicks on *New*, the below screen will populate.



If one part is added multiple times, then they will require replacement at the same time (**Screenshot-01**). At the time of work order creation, there will only one (1) part and one (1) stockroom for both (**Screenshot-02**).

| MMX37 Test site 123 ALL-DO NOT USE April Chandigarh Clinical Reference | | | I 🗋 🛷 Asset | Bill Of Materia | iterials | | | Sort By Run | itime Units | ¥ | Sort Order | |
|---|--|---|--|-----------------|------------------|-----------------------|---|---|---|--------------|--------------------------------|--|
| Laboratory Campus Contractors DASTA-Residence DI1009-1009 Central Crossroads Academy DT1015-1015 Central DT1080 Quality Hill Academy | • | | Asset- | Part Number | Part Name | Component Position | Manufacturer Part Number Part 15-01 | Current Component Runtime | Asset Runtime At Last Replacement 0.000000 | Runtime Limi | it Last Replacement Date | Part description T |
| | SHOT | -01 | | part-nov 15-0 | 1 part-nov 15-01 | part-nov 15- 01-01 | Part 15-01 | 110.000000 | 0.000000 | 110.000000 | | description part 15-01 description |
| | | | | port nov 19 0. | 2 part nov 15 02 | pur nov 15 02 | 101119.02 | 110.000000 | 0.000000 | 120.000000 | | description |
| proteus | tome Assets | Inventory | Personnel | Providers | Durchasing | Reporte Ser | vice Requests | Work Orders | Company | Bights Act | tive Directory | Logged O He |
| MX37 Test site 123 ALL-DO NOT USE April | iome Assets rettingsAssets - As | Inventory sets ? 🔀 😪 /T /N | Personnel | Providers | Purchasing | Reports Ser | vice Requests | Work Orders | Company | Rights Act | tive Directory | |
| VIX37 Test site 123 ALL-Do NOT USE 1, April (Chandigarh) (Chincia Reference Laboratory Campus (. Ontractors DASTA-Residence D.DSTA-Residence D.DSTA-Residence D.DSTA-Residence D.DSTA-Residence D.DSTA-Residence | tome Assets ettingsAssets - Ass | Inventory sets | Personnel | Providers | Purchasing | Reports Ser | Manufacturer Part Nomber | Work Orders | Company Company | Rights Act | tive Directory | KPI Cogged KPI Co |
| VX37 Test site 123 ALL-Do NOT USE 140 (Danadarah) (Dan | tome Assets - Assets- Assets - | Inventory | Personnel Asset Asset Asset-r Asset-r | Providers | Purchasing | Reports Ser | Wice Requests | Work Orders Sort By Rut Current Stockrooms | Company | Rights Act | Sort Order | KPI He |

NOTE: If the part is not in any stockroom, then first add the part to any stockroom, then create the work order.

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WORK ORDER CREATED:

For **Replacement Required Part**, select stockroom (if the part is added in multiple stockrooms) then click on *Create* and work order will be created with the description: *"Component service required"*

NOTE: The Work Order Type would be *Preventive Maintenance*.

| Proteus mmx Quick Links | Home Settings | Asset | s Inve Orders - | entory Personnel | Providers Purchasing | Reports Service Requests | Work Orders Comp | any Rights | Active Directory |
|---|------------------|----------|--------------------|-------------------|------------------------|-------------------------------|-------------------|--------------|------------------|
| MMX37 Test site 123 ALL-DO NOT USE April Chandigarh Clinical Reference | Î | Employe | e | ☎ ♥ 🛇 🌡 🕼 | | ontractor | Work Order Number | Target | rder Descending |
| Laboratory Campus | | 4 | • | Work Order Number | Job Number | Description | Work Order Type | Priority Nam | e Worl |
| DT1009-1009 Central | | <u>/</u> | | | T | T T | | T | T |
| Crossroads Academy The Crossroads Academy The DT1015-1015 Central | | | | 20171115018 | | Component service required | | | |
| Academy | | | | 20171115016 | | Component service required | | | |
| Parking Garage + A DT10W - 10th & | | | | 20171115010 | | work order only checking bom | DemandMaintenance | | |
| Wyandotte Garage | | | | 20171114001 | | Component service | | | |

Edit the created work order go to the *Parts Tab.*

Quantity Allocated will be **two (2)** if there are two of the same parts are replaced at the same time. It could be **three (3)**, if 3 of the same parts are added.

| pro | teus | Home Assets | Inventory | Personnel | Providers | Purchasing R | teports S | Service Requests | Work Orde |
|-----------|------------------------|-----------------------------|-------------|-------------|------------|----------------|-------------|-------------------|------------|
| | Quick Links | SettingsWork Ord | lers - Work | Orders >> W | /ork Order | | | | |
| Nork Orde | 51. | | | | | 20171 | 115018 | | |
| Details | Tasks and La | bor Parts | Tools | Causes | Email | Attachments | Cour | nter Measures | Prever |
| Stockro | oom Parts — 🐂 🗮 🗐 🛑 | | Sort B | Y | | ▼ Sort Orde | er | • | |
| | Part Number | Part Name | 1 | Stockroom | ¥i | Quantity Requi | ired 🔫 | Quantity Allocate | ed Un T |
| | part-nov 15-01 | part-nov 15 | 5-01 | 2104 stock | room | 1 | | 2 | |

The **BOM Screen** on the asset will be changed to the one displayed below.

CASE 01: IF WORK ORDER IS CLOSED

| As | sset | | Asso | ciated BOM | | |
|---------------|-------------------------|------------------|---------------------------------|--|------------------|-----------------------------|
| Asset Name | Asset Runtime | Part Number | Current Component Runtime | Asset Runtime at Last Replacement | Runtime Limit | Last Replacement Date |
| | | | | | | |
| Asset - 01 | 110 | Part – Nov 15-01 | 0 | 110 | 110 | WO Closed Date |
| | Change 110 to 120 | | 120-110 = 10 | 110 | 110 | |
| | | | | | | |
| | 110 | Part – Nov 15-01 | 0 | 110 | 110 | WO Closed Date |
| | Change 110 to 120 | | 120-110 = 10 | 110 | 110 | |
| | | | | | | |
| | 110 | Part – Nov 15-02 | 110 | 0 | 120 | |
| | Change 110 to 120 | | 120 | 0 | 120 | |

NOTE: The *Current Component Runtime* will be updated to 0 because the work order is closed.

Asset Runtime at last replacement will be changed to 110 because it is at asset runtime at the part replacement time.

The Runtime Limit will be the same because it is given from the Part Master Page.

The Last Replacement Date will be the date when the work order is closed.

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CASE 02: IF THE WORK ORDER IS NOT CLOSED/CANCELLED

| As | sset | | Asso | ciated BOM | | |
|---------------|-------------------------|------------------|---------------------------------|--|------------------|-----------------------------|
| Asset Name | Asset Runtime | Part Number | Current Component Runtime | Asset Runtime at Last Replacement | Runtime Limit | Last Replacement Date |
| | | | | | | |
| Asset - 01 | 110 | Part – Nov 15-01 | 0 | 110 | 110 | WO Closed Date |
| | Change 110 to 120 | | 120-110 = 10 | 110 | 110 | |
| | | | | | | |
| | 110 | Part – Nov 15-01 | 0 | 110 | 110 | WO Closed Date |
| | Change 110 to 120 | | 120-110 = 10 | 110 | 110 | |
| | | • | | | | |
| | 110 | Part – Nov 15-02 | 110 | 0 | 120 | |
| | Change 110 to 120 | | 120 | 0 | 120 | |

The **Current Component Runtime** for **Part – Nov-02** will not be updated to 0 because the work order is not closed/cancelled and the **Asset Runtime at Last Replacement/Last Replacement Date** is also not updated.

As the user increases the **Asset Runtime**, the **Current Component Runtime** will be updated but another work order will not be created for same part until it is closed or cancelled.

NOTE: Until the work order of the related part is closed or cancelled, another work order will not be created for the same part. The user will be notified of this occurrence when they click the *New* button.

| proteus | Home | Assets | Inventory | Personn el | proteusn No parts ne | nmx.com say: eed replacemen | 5 | | : | × Comjany | Rights Acti | ve Directory I | Logger O He | .d In a elp |
|--|------------|-----------|------------|------------|--------------------------------|--------------------------------|-----------------------|-----------------------------|---------------------------------|---|---------------|-------------------------------|---------------------------|----------------|
| Quick Links | Setting | sAssets - | Assets | | | | | | ОК | | | | | |
| MMX37 Test site MAX37 Test site ALL-DO NOT USE | ^ | | | Ma 🗋 👍 | Rill Of Mai | torials | | | | he U <mark>n</mark> its | • | Sort Order | | ^ |
| k April | | | <u>é</u> . | asset- | Bill Of Material BOM-nov 15 | s | | | | | | | , |] |
| Accontractors Accontractors Accontractors Accontractors DASTA-Residence DT1009-1009 Central Crossroads Academy | | • | | Asset-r | Part Number | Part Name | Component Position | Manufacturer Part Number | Current Component Runtime | Asset Runtime At Last Replacement | Runtime Limit | t Last Replacement Date | Part description | |
| Academy DT1015-Tentral Academy DT10C-Ten Central | I | | | | part-nov 15-01 | part-nov 15-01 | part-nov 15-01 | ▼ Part 15-01 | 20.000000 | 110.000000 | 110.000000 | 11/15/2017 | part 15-01 description | 1 |
| Parking Garage ★ DT10W - 10th & Wyandotte Garage ★ DT1308-1308 Pennsylvania McGuff | I | | | | part-nov 15-01 | part-nov 15-01 | part-nov 15- 01-01 | Part 15-01 | 20.000000 | 110.000000 | 110.000000 | 11/15/2017 | part 15-01 description | |
| m to 1400-1400 Baltmore m to DT14440-14440 E. 42nc | i ▼ | | | | part-nov 15-02 | part-nov 15-02 | part-nov 15-02 | Part 15-02 | 130.000000 | 0.000000 | 120.000000 | | part 15-01 description | |

SCENARIO 01: PART – NOV 15-01 NEEDS REPLACEMENT AND PART – NOV 15-02 WORK ORDER ALREADY CREATED

| Quick Links | Home Settin | e Ase ngsAsse | sets ets - A | Inventory Assets | Personne | I Providers | Purchasing | Reports Ser | vice Requests | Work Orders | Company | Rights Activ | e Directory | крі | |
|--|----------------|------------------|-----------------|---------------------|-------------------|-------------------------------|---------------------------------|-------------------------|---------------|----------------------|------------------------|--------------|---------------------|---------------------------|--|
| MMX37 Test site 123 April Chandigath Clinical Reference Laboratory Campus Contractors Description Contractors Description Constroade Constroade Constroade Constroade Constroade Description Descript | Â | | | | hti 🗋 🖉 | L ⊚ 🖂 Bill Of Ma | o 🐧 🔝 terials | | | Sort By Run | time Units | ▼ S | ort Order | | |
| | | + | | 6 - 6 | (💌 asse Asset | Bill Of Materia BOM-nov 15 | BIII Of Materials BOM-nov 15 | | | | | | | Part | |
| | | | | | Asset | | | Position | Part Number | Component Runtime | At Last Replacement | | Replacement Date | description | |
| | | | | | | part-nov 15-0: | 1 part-nov 15-0: | l part-nov 15-01 | Part 15-01 | 110.000000 | 110.000000 | 110.000000 | 11/15/2017 | part 15-01 description | |
| | -p | | | | | part-nov 15-0: | 1 part-nov 15-0: | l part-nov 15- 01-01 | Part 15-01 | 110.000000 | 110.000000 | 110.000000 | 11/15/2017 | part 15-01 description | |
| | × F | | | | | part-nov 15-0 | 2 part-nov 15-02 | 2 part-nov 15-02 | Part 15-02 | 220.000000 | 0.000000 | 120.000000 | | part 15-01 description | |

Click on *New* to create a work order.

Here, only one part will display because another part's work order is not closed/cancelled.

| proteus | Home | Assets | Inventory | Personnel | Providers | Purchasing | Reports S | ervice Requests | Work Orders | Company | Rights Act | tive Directory | КРІ | o Help ර |
|---|------------|----------|-----------|-----------|--|---|---|-----------------------------------|---|--|-------------|----------------|---|--|
| Quick Links | SettingsAs | sets - A | ssets | | | | | | | | | | | |
| MMX37 Test site ALI-DO NOT USE April Chandigarh Clinical Reference Laboratory Campus Contractors DATA-Residence DT1009-1009 Central DT1009-1009 Central DT1009-1015 Central DT105-1015 Central DT105-1015 Central DT105-1015 Central DT105-1015 Central Parking Garage DT100-100 & Bultmon DT14440-14440 E. 42n | d v | | | Asset | Bill Of Materia Bill Of Materia BOM-nov 1 Part Number part-nov 1 part-nov 1 | A Control of Cont | Component Rootbion cooms for par r D1-01 01-01 2 part-nov 15- | Manufacturer bart Number ts | Sort By Ru Current Stockrooms 2104 stock | Asset Runtime Asset Runtime of Loci com V 0.000000 | Runtime Lim | Sort Order | t Part descri X descri part 1 descri | v te v te |

SCENARIO 02: DELETE PARTS FROM WORK ORDER (CREATED FROM BOM)

- 1. The *Current Component Runtime* is higher than the Runtime Limit.
- 2. The work order is created but not closed/cancelled.
- 3. Go to that created work order then *Delete* the added parts.
- 4. Now, go to *Assets*. At the **BOM** window, click on *New*, then it should allow the user to create a new work order.

SCENARIO 3: CREATE WORK ORDER, THEN ADD BOM PARTS

- 1. The *Current Component Runtime* is higher than the **Runtime Limit.**
- 2. The work order is created (suppose it is **WO-01**) but not closed/cancelled
- 3. Create another work order (suppose it is **WO-02**) from the *Work Order* module, using the same asset that has the **BOM** associated.
- 4. Now, *Close/Cancel* work order (WO-02). It is not created form the **BOM** but it still affects the **BOM**.