# Engineering

The **Engineering** team can add the pressure vessel drawings, bill of material, and joints to the system.

## 1 Drawings

The **Drawings** tab in the **Data** menu used to add the drawings related with the pressure vessel.

1. Click **Drawings**

   The **Drawings** page opens.

image_1651064647999.png
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**Figure 1.1: Drawings page**

## Add a Drawing

If you want to add a drawing, do the following steps,

1. Click image_1651064711391.png (**ADD** button) in the **Drawings** See Fig 1.1.
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   The page shows a new box to add the details of the drawing.

image_1651064732879.png
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2. In the Drawing Number box, enter the drawing number.

3. In the Description box, enter the description for the added drawing.

4. In the Revision box, enter the revision number of the drawing.

5. In the Approved box, if the drawing has approved, select Yes otherwise select No. If there is no need for approval means select NA.

6. In the Sheets box, enter the sheet number.

7. In the Remarks box, enter your remarks if any.

8. Click Save.

The drawing is successfully added.

# Edit a Drawing

If you want to edit any existing drawing in the **Drawings** page, do the following,

image-1651064824216.png

1. Click Image not found or type unknown (Edit icon) in the **Edit** column for the respective drawing. See Fig 7.1.

The page shows the details of added drawing.

image-1651064843327.png

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2. Click on any box where you want to edit the details, and then edit the details in the respective box.

3. Click **Save**.

*Production users will be notified if there are any changes to the drawing.*

# Delete a Drawing

image-1651064894

If you want to delete any specific drawing from the list of drawings, you can use Image not found or type u (Delete icon) provided in the **Delete** field of the **Drawings** page.

# Attach a File into a Drawing

image-1651(

If you want to attach a file with any drawing listed in the **Drawings** page, you can use Image not found (Attach icon) provided in the **Attachment** column for the respective drawing.

# Attach a File into a Pressure Vessel Built Drawing

If you want to attach a file with any pressure vessel built drawing listed in the **Drawings** page, you

image-1651065007115.png

can use Image not found or type unknown (Attach icon) provided in the **As Built Drawing** column for the respective drawing.

# Export Drawings List

You can export a list of drawings added in the **Drawings** page in the excel formats by using excelimg.png

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(**Excel** button).

# 2 Bill of Material

Bill of Material is a comprehensive inventory of the raw materials, assembles, sub assembles, parts and components, as well as the quantity of each, needed to the pressure vessel module.

The **Bill of Material** menu used to add the bill of material details.

1. Click **Bill of Material**

The **Bill of Materials** page opens.

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**Figure 1.2: Bill of Materials page**

# Add a Bill of Material

If you want to add a bill of material, do the following steps,

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1. Click Image not found or type unknown (**ADD** button) in the **Bill of Materials** See Fig 7.2.

The page shows a new box to add the details of the bill of material.

image-1651065209995.png

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2. In the Drawing Number box, select the drawing number from a drop-down list.

3. In the Part No box, enter the part number.

4. In the Material Description box, enter the description for the bill of material.

5. In the Material Specification box, select the material specification.

6. In the Material Dimension box, enter the material dimension.

7. In the Qty box, enter the quantity of the material.

8. In the Remarks box, enter your remarks if any.

9. If the material is cut from a plate, select the checkbox of the Cutting from Plate? option.

10. In the **Group** box, select the group from a drop-down list.

11. In the **Point of Sale (POS)**box, select the POS from a drop-down list.

12. Click **Save**.

The bill of material is successfully added.

# Edit a Bill of Material

If you want to edit any existing bill of material in the **Bill of Materials** page, do the following,

image-1651065349619.png

1. Click Image not found or type unknown (Edit icon) in the **Edit** column for the respective bill of material. See Fig 7.2.

The page shows the details of added bill of material.

image-1651065372737.png

Image not found or type unknown

2. Click on any box where you want to edit the details, and then edit the details in the respective box.

3. Click **Save**.

# Clone a Bill of Material

The **Clone** option in the **Clone** column of the **Bill of Materials** page used to add a bill of material as a copy of the previously added bill of material, See Fig 7.2.

image-1651065434502.png

1. Click Image not found or type unknown (Clone icon) in the **Clone** column of the **Bill of Materials**

A new box opens to add the bill of material.

2. Enter the details of the bill of material.

The new bill of material will be added.

# Delete a Bill of Material

If you want to delete any specific bill of material from the list of bill of materials, you can use image-1651065500695.png

Image not found or type unknown (Delete icon) provided in the **Delete** field of the **Bill of Materials** page.

# Export Bill of Materials List

You can export a list of bill of materials added in the **Bill of Materials** page in the excel formats by excelimg.png

using Image not found or type unknown (**Excel** button).

# Import Multiple Bill of Materials

If you want to import multiple bill of materials together, do the following,

image-1651065599643.png

1. Click Image not found or type unknown (**TEMPLATE** button) on the **Bill of Materials** See Fig 1.2.

A template will be downloaded as an excel worksheet to enter the details of bill of materials.

image-1651065633244.png

Image not found or type unknown

2. Enter the relevant details in the required columns on the excel worksheet.

3. Once you have added the bill of materials details in the excel worksheet, save the excel worksheet on your computer.

image-1651065675933.png

4. Click Image not found or type unknown (**IMPORT** button). See Fig 1.2.

A new box opens for importing the excel worksheet saved on your computer.

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image-1651065714372.png

5. Click Image not found or type unknown (**Browse** button) to select the excel worksheet to be uploaded.

6. Select the excel worksheet you want to upload from your computer.

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7. Click Image not found or type unknown (**Upload** button) to export the bill of materials details that are included in the excel worksheet.

The details of the bill of materials in the worksheet will be displayed in the **Bill of Materials** page.

# 3 Joints

In Pressure Vessel, joints are formed by welding two or more workpieces (metal or plastic) according to a particular geometry. If you want to add a joint,

The **Joints** tab in the **Engineering** menu used to the weld joints.

1. Click **Joints** in the **Engineering**

The **Weld Joints** page opens.

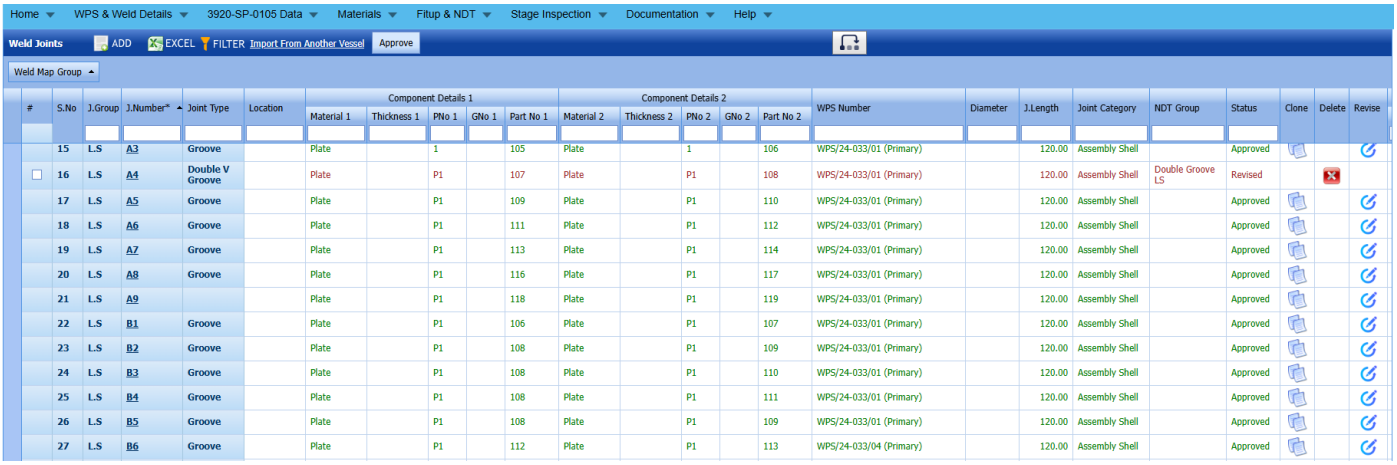


**Figure 1.3: Weld Joints page**

# Add a Weld Joint

If you want to add a weld joint, do the following steps,

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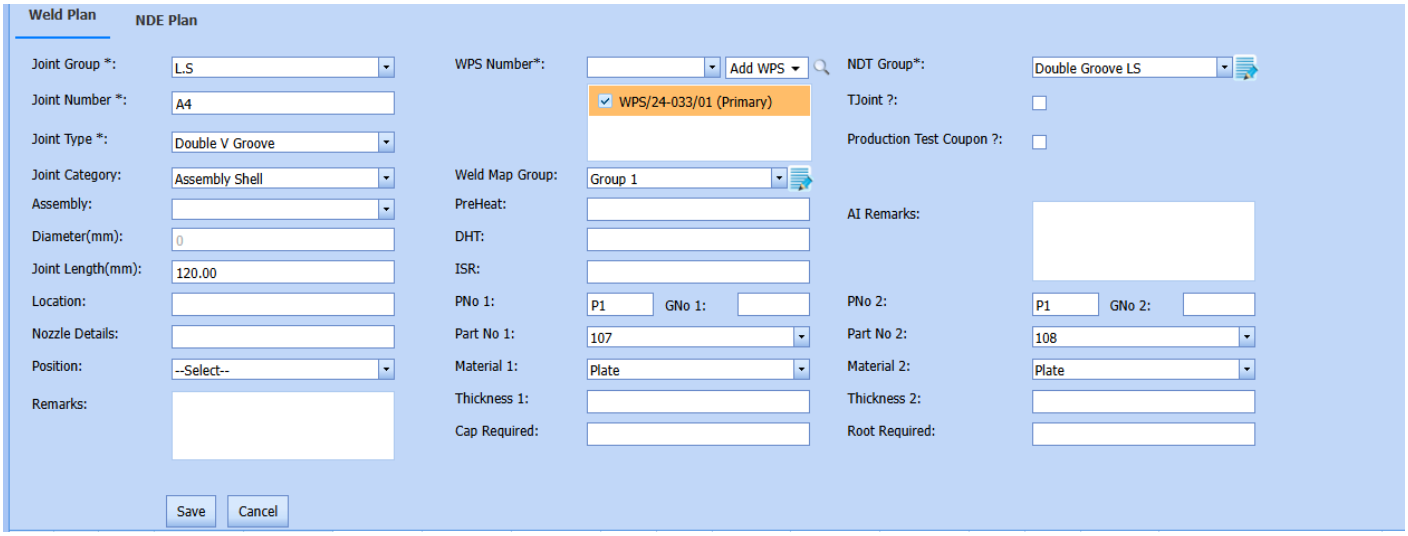
1. Click Image not found or type unknown (**ADD** button) in the **Weld Joints**

The page shows a new box to add the details of the weld joint.

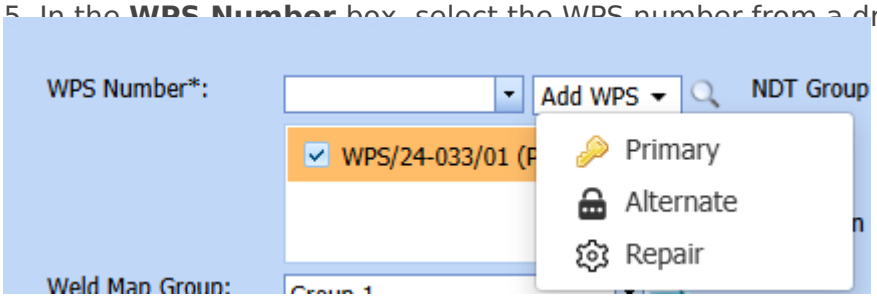



2. In the Joint Group box, select the joint group name.

3. In the Joint Number box, enter the joint number.

4. In the Joint Type box, select the joint type.

5. In the **WPS Number** box, select the WPS number from a drop-down list and click




either Primary or Alternate or Repair as type.

The selected WPS number will be added.

6. In the NDT Group box, select the NDT Group name.

7. In the Location box, enter the location name.

8. In the Nozzle Details box, enter the nozzle details.

9. In the Joint Length (mm) box, enter the joint length.

10. In the Material 1 box, select the first material and enter their group number, thickness and part number in the respective boxes.

11. In the Material 2 box, select the second material and enter their group number, thickness and part number in the respective boxes.

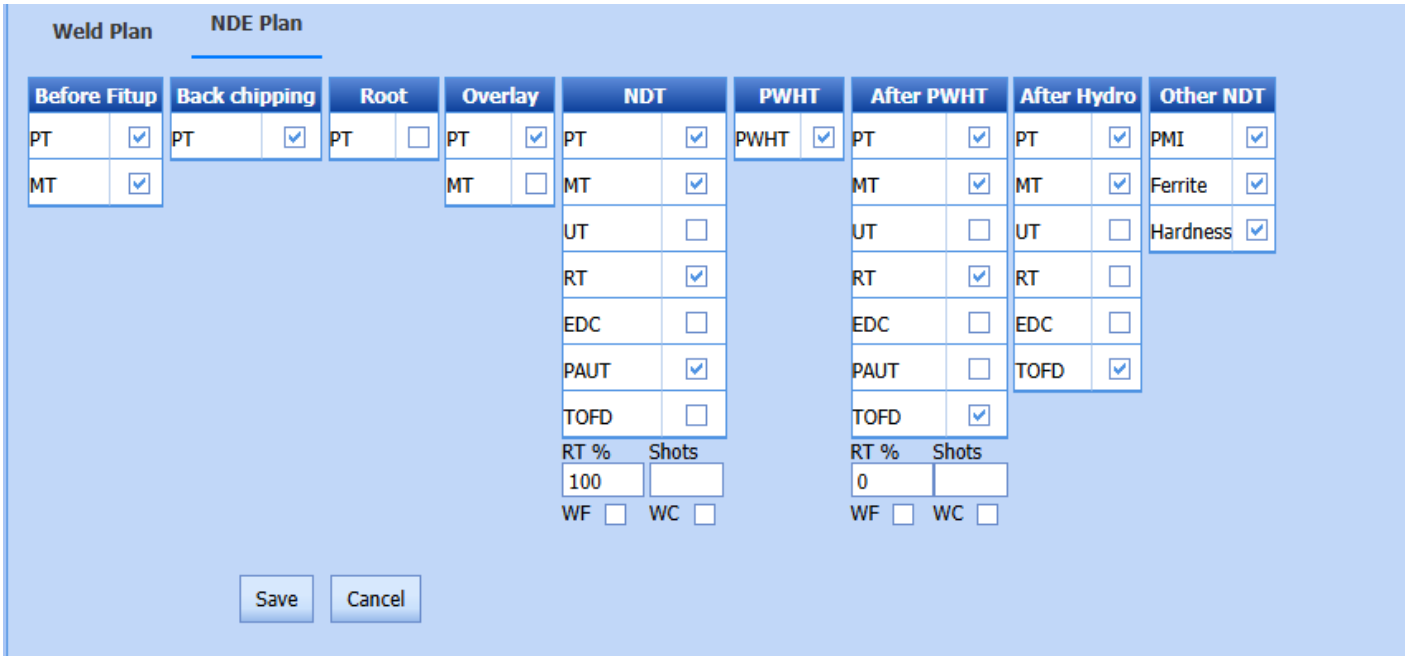
12. In the **Position** box, select the position of the weld joint.

13. If the joint to be done is T joint, select the checkbox of the **Is T Joint**

14. In the **Remarks** box, enter your remarks if any.

15. Click **Save**.

17. Select the NDE Plan Tab and if required change the NDT to be performed in the Before Fit up, Back Chipping, Before PWHT, PWHT, and Other NDT fields.

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**Note**: The NDT type displayed in all above fields can be modified based on your requirement. For example, you can add and remove the NDT type by navigating into the **NDT Requirements** tab. To know in detail, see the topic, "**NDT Requirements**".

**Before Fit up** – If you select any NDT type listed in the **Before Fit up** option for a joint, the selected NDT type should be completed before adding the Fit up inspection request for the joint. For example, if you select both **RT** and **MT,** you must do both RT and MT.

**Back Chipping** - If you select any NDT type listed in the **Back Chipping** option for a joint, the selected NDT type should be completed before adding the weld visual inspection request for the joint.

**NDT** - If you select any NDT type listed in the **NDT** option for a joint, the selected NDT type should be completed after performing the weld visual inspection for the joint.

**PWHT** - If you select any NDT type listed in the **PWHT** option for a joint, the selected NDT type should be completed after performing the above NDT.

**Other NDT** - If you select any NDT type listed in the **Other NDT** option for a joint, the selected NDT type should be completed after performing the above PWHT.

The weld joint is successfully added.

# Edit a Weld Joint

If you want to edit any existing weld joint in the **Weld Joints** page, do the following,

1. Click on the joint number for the respective weld joint to edit. See Fig 1.3.

   The page shows the details of added weld joint.

2. Click on any box where you want to edit the details, and then edit the details in the respective box.

3. Click **Save**.

# Duplicate a Weld Joint

If you want to duplicate any existing weld joint,

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1. Click Image not found or type unknown (Add icon) of the respective weld joint.

   The selected weld joint will be added as duplicated one including the revised joint number.

# Delete a Weld Joint

image-16

If you want to delete any specific weld joint from the list of added weld joints, you can use Image not fo

(Delete icon) provided in the **Delete** field of the **Weld Joints** page.

# View Welding Work Instruction Detail

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If you want to view the welding work instruction detail, click Image not found or type unknown (Print icon) provided in the **Report** column.

# Export Weld Joints List

You can export a list of weld joints added in the **Weld Joints** page in the excel formats by using excelimg.png

Image not found or type unknown (**Excel** button).

# Import Weld Joints from Another Vessel

You can import the weld joints of another vessel into the current vessel by using the specific functionality given in the **Weld Joints** page.

1. Click **Import from Another Vessel** option in the **Weld Joints**

   The **Import from Another Vessel** window opens.

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2. If you want to import the pressure vessel joints from current project, select **Current Projects** or if you want to import the pressure vessel joints from any other project, select **All Projects**.

3. In the **Equipment** box, select an equipment from which you want to import the joints.

4. Click **OK**.

The joints of the selected equipment will be added in the **Weld Joints** page.

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