INTRODUCTION

The different robot types can be equipped with the SpotPack or DressPack options, designed for Spot welding and Material handling applications.

A DressPack brings different customer signals, media such as compressed air, cooling water and weld power, depending on chosen application and variant, to axis 3 or to axis 6.

A SpotPack comprises DressPack, Power unit and Water and Air unit.

The models show Dress Packs with external routing and with changeover connection between lower arm and upper arm.

General
- Details, cables and fastenings are modeled when robot is in its synchronization position.
- A cable package is modeled as one body that represents the same area.

Scope of models
- Earlier DressPack3D models also included the robot. Later models include only the DressPack, which has to be combined with the corresponding robot model to form a complete model. Simulation models however include robot and corresponding kinematics.

Naming

The zip files are named as follows: Spotpack-<irb family>-<irb model>-<version>_ <type of component>_rev1_<CAD format>_j, c or s_.ZIP

Where j=joints, c=complete, s=simulation, indicates type of model.

Available formats are:
3D CAD IGRIP, SAT, SolidWorks, STEP and Parasolid
Simulation RobCAD (eMWorkplace)

Example: Spotpack-ibb66X0_Irb6650-200-275_Dresspack-Silver-Line_rev1_iges_j.ZIP

A joints model in format IGES of a Silver Line DressPack for IRB 6650 – 200/2.75

File or part name within the zipped package may have other naming, due to historical reasons or limitations of CAD or simulation tool to be used.

Location of models

The Dress and SpotPack models are available for downloading from www.abb.com by selecting ABB Product guide/Robotics and then Product range and finally CAD Models.

The models are categorized according to type of product and robot family.
Dress and SpotPack Models - Information

CREATE A COMPLETE MODEL OF SEPARATE DRESSPACK AND ROBOT MODELS

The procedure is explained by using SolidWorks as example.

1. Download and unzip the DressPack and the robot files.

   Note: A separate document “Dress and SpotPack Models - Revision Guide” gives information regarding, which robot model version/revision to be combined with a DressPack model version/revision.

2. Open the DressPack and robot assembly files in separate windows and save them before proceeding.

3. Insert the DressPack into the robot assembly file
   - Use the standard planes for manually mating the DressPack correctly.
   - Or use drag and drop. Drag the DressPack into the robot tree.
     The DressPack finds the right locations automatically.

Complete model
PREREQUISITES TO BE CONSIDERED IN 3D LAYOUT AND SIMULATION WORK UTILIZING DRESSPACK MODELS

Orange Line
The DressPack is divided into different parts. These are position marked and below comments of each position is given. These are valid for all variants regardless of adaptations to applications, like Material handling or Spot welding, or to mechanical arm variants.

Position no 1: Process cable support axis 6
Moving pattern: Follows axis 6 turning.
Note: Maximum movement of axis 5 is ± 110 degrees.
Production tolerance: Approximately +/- 5 mm.
Assembly tolerance: Could be assembled freely (rotation decided by customer) around axis 6 at +/- 180 degrees.
## Dress and SpotPack Models - Information

### Position no 2: Process cable package, axis 3 - 6

- **Moving pattern:** Divided in three parts. Front part follows Pos 1 movement, middle part follows axis 4 movement and rear part follows axis 3 movements.
- **Production tolerance:** Approximately +/- 50 mm.
- **Assembly tolerance:** Approximately +/- 100 mm. Movement tolerance could not be defined.

### Position no 3: Retracting unit

- **Moving pattern:** Describes a rotation movement in x-y plane with origo at the arms base, -20 degrees backward and + 60 degrees forward relatively a position perpendicular to the upper arm.
- **Production tolerance:** Approximately +/- 50 mm.
- **Assembly tolerance:** Approximately +/- 50 mm. Movement tolerance could not be defined depends on movement combinations of axis 3-6.

### Position no 4: Process cable package, base - axis 3

- **Moving pattern:** Divided in three parts. Upper part follows axis 3 movements, middle part follows lower arm movement and lower part follows axis 1 movement.
- **Production tolerance:** Approximately +/- 50 mm.
- **Assembly tolerance:** Approximately +/- 50 mm. Movement tolerance could not be defined.

### Position no 5: Process cable attachments, base - axis 3

- **Moving pattern:**
- **Production tolerance:** Approximately +/- 5 mm.
- **Assembly tolerance:** Approximately +/- 10 mm.

### Not shown in sketch: Water and Air unit

- **Production tolerance:** Approximately +/- 30 mm.
- **Assembly tolerance:** Approximately +/- 20 mm. Not valid for hoses.

### Not shown in sketch: Power unit

- **Production tolerance:** Approximately +/- 30 mm.
- **Assembly tolerance:** Approximately +/- 20 mm. Not valid for in and outgoing cables.
Silver Line
The DressPack is divided into different parts. These are position marked and below comments of each position is given. These are valid for all variants regardless of adaptations to applications, like Material handling or Spot welding, or to mechanical arm variants.

Position no 1: Process cable support, axis 6
Moving pattern: Follows axis 6 turning.
Note: Maximum movement of axis 5 is ± 110 degrees.
Production tolerance: Approximately +/- 5 mm.
Assembly tolerance: Could be assembled freely (rotation decided by customer) around axis 6 at +/- 180 degrees.
**Position no 1a: Ball joint housing**

Alternative design: **Important note:**

From fall 2004 the design has been changed and the corners of the housing reaches out about 15 mm more.

Silver Line models of revision 1 for both IRB 66X0 and IRB 7600 have the previous design of Ball joint housing.

Differences are shown in the following sketches.

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<tr>
<th>Current design</th>
<th>Previous design</th>
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<td><img src="image1" alt="Current design" /></td>
<td><img src="image2" alt="Previous design" /></td>
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**Position no 2: Process cable package, axis 3 - 6**

Moving pattern: Divided in three parts. Front part follows Pos 1 movement, middle part follows axis 4 movement and rear part follows axis 3 movements.

Production tolerance: Approximately +/- 50 mm.

Assembly tolerance: Approximately +/- 100 mm. Movement tolerance could not be defined.

**Position no 3: Hose support**

Moving pattern: Assembled to rear part of upper arm.

Production tolerance: Approximately +/- 25 mm.

Assembly tolerance: Approximately +/- 50 mm.
### Dress and SpotPack Models - Information

**Position no 4: Retracting unit**

**Moving pattern:** Describes a rotation movement in x-z plane with origo at the arms base, -20 degrees forward axis and + 90 degrees backward relatively an upright position.

**Production tolerance:** Approximately +/- 50 mm.

**Assembly tolerance:** Approximately +/- 50 mm. Movement tolerance could not be defined depends on movement combinations of axis 3-6.

**Position no 5: Upper arm protection**

**Production tolerance:** Approximately +/- 20 mm.

**Assembly tolerance:** Approximately +/- 30 mm.

**Position no 6: Process cable package, base - axis 3**

**Moving pattern:** Divided in three parts. Upper part follows axis 3 movements, middle part follows lower arm movement and lower part follows axis 1 movement.

**Production tolerance:** Approximately +/- 50 mm.

**Assembly tolerance:** Approximately +/- 50 mm. Movement tolerance could not be defined.

**Position no 7: Process cable attachments, base - axis 3**

**Production tolerance:** Approximately +/- 5 mm.

**Assembly tolerance:** Approximately +/- 10 mm.

**Not shown in sketch: Water and Air unit**

**Production tolerance:** Approximately +/- 30 mm.

**Assembly tolerance:** Approximately +/- 20 mm. Not valid for hoses.

**Not shown in sketch: Power unit**

**Production tolerance:** Approximately +/- 30 mm.

**Assembly tolerance:** Approximately +/- 20 mm. Not valid for in and outgoing cables.