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1 Introduction

1.1 The System

Otto Bock has further advanced the software for the fabrication of sockets for transfemoral prostheses. With TF Design, prosthetists can make use of state-of-the-art application technology for individual socket fabrication, giving them an excellent alternative to conventional plaster techniques for individual, modern socket design.

The Otto Bock TF Design program offers prosthetists the possibility to create and process all data needed for a test- or interim socket at one go. Furthermore, they can use the software to select all prosthetic components needed for the prosthesis. After completion of prosthetic components selection, you just have to save the data and e-mail your order directly to the Otto Bock Service Fabrication. Based on your data we will fabricate your unique test socket out of ThermoLyn®. If ordered, the selected components will be pre-assembled and sent to the prosthetist for trial fitting.

1.2 Sending Orders

Before working with TF Design the residual limb of the patient must be measured. The individual measurements should be noted down for later entry into the software.

The software procedure involves

- entering patient data,
- entering socket specification,
- assessment and, where needed, adjustment of the three dimensional socket model which the program calculates,
- Manual adjustment of the socket view (optional),
- selection of fabrication instructions and order options,
- emailing of the data to the Otto Bock Service Fabrication for production.

2 Installation

2.1 Computer Hardware – Recommended Specification

For 32-bit platforms:

- PC with a Pentium IV 650 / 3.4 GHz processor (x86) or faster
- 1 GB RAM

For 64-bit platforms:

- PC with an Intel Core2 (x64) or better
- 2 GB RAM

For 32-bit and 64-bit:

- At least 1 GB free hard drive space
- Graphics card with Open GL support
 - Minimum resolution 1024 x 764
 - 32 bit / 16.7 million colours
- CD-ROM drive or DVD-ROM drive
- Mouse and keyboard

2.2 Computer Hardware – Minimum Requirements

The minimum requirements for computer hardware for TF Design are as follows:

- PC with a Pentium III/ 1000 MHz processor (x86) or faster
- 512 MB RAM
- At least 1 GB free hard drive space
- Graphics card with Open GL support
 - Minimum resolution 1024 x 764
 - 32 bit / 16.7 million colours
- CD-ROM drive
- Mouse and keyboard

2.3 Software Specification

A Windows operating system is required for the application of TF Design.

The following 32-bit operating systems are supported:

- Microsoft Windows XP Professional SP2 or newer;
- Microsoft Windows XP Home Edition SP2 or newer;

- Microsoft Vista (all editions except Vista Starter);
- Microsoft Windows 7

The following 64-bit operating systems are supported:

- Microsoft Windows 7

Service pack 2 for Windows Vista or service pack 3 for Windows XP are strongly recommended.

In addition, a correctly configured e-mail program (e. g. Outlook, Outlook Express, Mozilla Thunderbird, etc.) and a web browser (Internet Explorer 8, Firefox 3.5) are required. In the course of the installation process, the following components will be installed, unless they are already existing on the target system:

- Microsoft XML 6.1
- Microsoft.NET Framework 2.0
- Microsoft SQL Server 2005 Express SP3

Before launching the installation, the installation program checks if you have sufficient free space on your hard drive and returns an error message if this is not the case. If this occurs, a corresponding amount of space must be freed up on the hard drive. All components required by the Otto Bock software will be automatically copied onto your hard drive by the installation program.

2.4 Installation

To run the installation program, start Windows and insert the Otto Bock TF Design CD into the CD-ROM drive. Installing the software requires administrative rights.

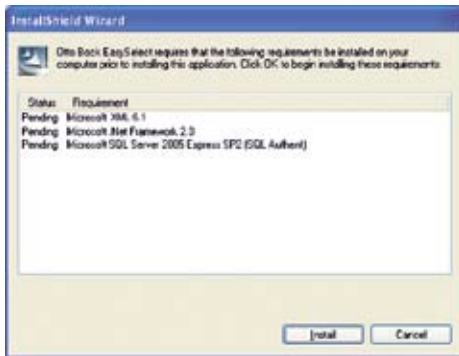
Installation by CD is normally launched automatically after the CD is inserted. If this is not the case, browse to the CD-ROM drive in Windows Explorer and start the program SETUP.EXE by double-clicking it.

After the installation program starts, the Setup Wizard presents a series of screens. Additional components are installed if required e.g. Microsoft.Net 2.0 Framework and Microsoft SQL Sever 2005 Express.

**Notice:**

For the function of the Otto Bock Data Station, Microsoft XML 6.1, Microsoft Net Framework 2.0 and Microsoft SQL Server 2005 SP3 Express are required in the so-called „Mixed Mode“.

- If Microsoft XML 6.1, Microsoft.Net Framework 2.0 and Microsoft SQL Server 2005 Express SP have not been installed yet, the following dialogue appears at the start of the installation process:



After clicking the “Install” button, follow the pre-defined installation process. This process can take some time.

- Read and agree to the license agreement
- Enter the name and company



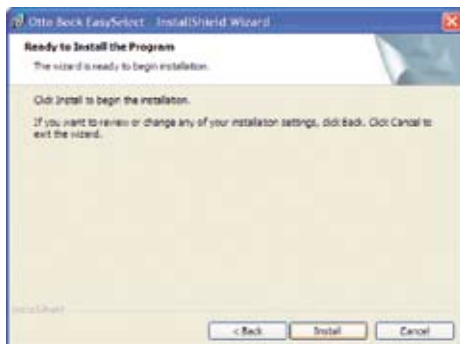
- Register the software with Otto Bock. You then receive product information from Otto Bock. However, it is possible to skip this step, although it is not recommended.

- A summary of the data that will be sent to Otto Bock when clicking the button “E-Mail Registration” will be shown. Another option is to click the “Print” button and fax your information to Otto Bock.

- After registration is complete or skipping the registration process this dialogue is shown. Select the “Next” button to continue.



The actual installation process is launched when the “Install” button is clicked.



At the end of the installation process, an icon for starting the Otto Bock software will be created on the Windows desktop.



Otto Bock Data Station

**Note:**

The installation program creates an icon for the Otto Bock Data Station and not for TF Design! The Otto Bock Data Station is the platform for Otto Bock software.

2.5 Uninstalling

To uninstall the Otto Bock TF Design software, use the Windows uninstall function. Open the Control Panel on the start menu. Choose the “Software” function to display all installed software packages.

Select the entry “Otto Bock TF Design”. Click the button “Add/Remove” to remove all components of TF Design from the hard drive. However, the patient data will not be deleted. This data is normally found under C:\Program Files\Microsoft SQL Server\MSSQL.1\MSSQL\Data\dmjobs.dat.mdf.

2.6 Starting the Program


The installation program adds an entry to the Windows start menu and the Windows desktop. The default location is “Start | Programs | Otto Bock | Otto Bock Data Station”. Alternatively, you can double-click the Otto Bock Data Station icon on the desktop.

After launching the Otto Bock Data Station, please create a new patient, switch to the task type tab, and select the correct amputation height. You may also need to select the required options. For **TF Design**, you require the option “**Component Selection**”.

For more details, please see the online help file for the Otto Bock Data Station (also see section 3).

2.7 Closing the Program

You can close Otto Bock TF Design using one of four methods:

- “Exit” command on the “File” menu
- The “Close Window” button 
- Closing via the task bar
- Key combination Alt + F4.

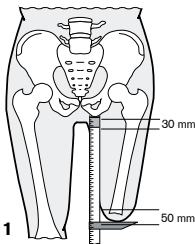
3 Measurements

Because every socket design is based on relatively few measurements, it is important that these measurements are taken carefully. Repeating each measurement once or twice is recommended in order to ensure that the values obtained are reliable. Make a note of all measurements taken so you can subsequently enter them in the software. At Otto Bock, residual limb measurements are taken according to the following procedure:

3.1 Measuring the Length of the Residual Limb

Length of the residual limb from the ischial tuberosity to the end of the residual limb (Fig. 1). Use the Otto Bock Body Caliper 743S10, which will provide you with a reliable residual limb length measurement. Take the measurement along the residual limb axis. If the residual limb is in a highly abducted position, tilt the body caliper accordingly.

- Palpate the skin in order to place the body caliper against the ischial tuberosity. The residual limb musculature must be relaxed when doing so, in order to keep the body caliper from slipping off.
- Exert only light pressure on the end of the residual limb when determining the length of the residual limb.
- The residual limb length measurement will, in many cases, determine the socket length directly. If necessary, the socket length can be made longer, for example when only little soft tissue covers the distal end of the femur (Fig. 1).



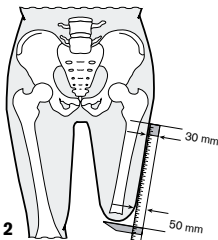
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3.2 Measuring the Residual Limb Circumferences

The most proximal circumference is measured 30 mm below the level of the ischial tuberosity.

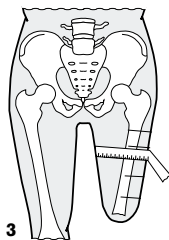
The residual limb length is already set on the body caliper.

- Starting with the caliper at the setting used to measure the limb length, transfer it to the lateral side of the limb. Mark the limb at the bottom of the shaped end of the caliper, i.e. 30 mm below the ischial tuberosity (see arrow in Fig. 2). Make a mark 50 mm above the distal end of the limb.



2

- Between the initial proximal and distal points (30 mm below the ischial tuberosity / 50 mm above the distal end of the residual limb), make markings for additional circumference measurements. Space out the additional measurements as appropriate making sure that the measurements are at least 30 mm apart (Fig. 3).
- Take a total of no more than five measurements, including the initial measurement and the last distal measurement (50 mm above the end of the residual limb). Measurements made below 50 mm can be highly unreliable due to the contoured form of the distal end of the residual limb. Ask the patient to tense the limb muscles to see the effect on the measured circumference. If the measurement is significantly affected by muscle tension, record an average reading from the tensed and relaxed states.
- When using the Measuring Tape 743B1, try to keep the tension constant, or use the Spring-loaded Measuring Tape 743B4.
- Ensure that the measuring tape is orthogonal in relation to the axis of the residual limb.



3.3 Measurements with a Liner

In case of a fitting with a liner, the liner has a compression effect on the residual limb. For this reason, the residual limb measurements used for the fabrication of the socket must be taken with the liner applied.

- First determine the correct liner size according to the application instructions provided by the manufacturer.
- After selecting the right liner size, the liner is rolled over the residual limb before measuring. The circumferences and length are now determined with the liner applied, as previously described in section 3.2.
- Applying the liner compresses the residual limb and therefore causes a volume reduction. For this reason it is recommended not to apply any further reduction to the measured circumferences in the software and, as a result, the reduction should be set to zero percent.
- The exact socket length measurement is also determined by measuring with the liner applied.

3.4 Measuring the Bony ML Dimension

- From behind, at the level of the fold of the buttock, push the body caliper upward with slight pressure until the medial, smaller, angled arm of the caliper reaches the bony structure of the ischial tuberosity.
- The body caliper must be in a perfectly horizontal position. Exert slight pressure on the lateral arm of the caliper and read the measurement.

3.5 Measuring the Soft Tissue ML Dimension

- Apply the body caliper at the precise height of the highest proximal circumference measurement (30 mm below the ischial tuberosity).
- The body caliper must be in a perfectly horizontal position. Exert slight pressure on the soft tissue and read the measurement. Now you can begin designing the socket in Otto Bock TF Design using the measurements you have taken.

4 Online Help and Program Version _____

4.1. Advice for Using Online Help

After launching the Otto Bock Data Station, the integrated help file supports you during your tasks. You will find it in the menu "Help | Otto Bock Data Station Help F1". It also contains the online help for TF Design 8.

4.2 Determining the Program Version

You can determine the program version using the menu "Help | About...". This opens a window that contains information regarding the version of the Otto Bock Data Station and TF Design 8 you have installed.

You should have this information available whenever you contact one of our support representatives.
