Optotrak Certus 3020 Strober Adapter Guide

Revision 2
August 2005

IMPORTANT
Please read this entire document before using the 3020 Strober Adapter

Revision Status

Revision Number	Date	Description
2	31/08/05	Removed ToolBench reference. Update template

Part number: IL-1070075

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Printed in Canada.

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Read Me First!

Read this section before continuing with the rest of the guide.

Warnings

In all NDI documentation, warnings are marked by this symbol. Follow the information in the accompanying paragraph to avoid personal injury.

1. To maintain type BF isolation, all components between the e-type ports on an e-type System Control Unit and the patient must meet or exceed the certifications and approvals of the Optotrak Certus System. Serious personal injury could result if the appropriate type of isolation is not maintained.
2. For warnings specific to the devices in your measurement system please refer to all the manuals accompanying your system.

Cautions

Caution! In all NDI documentation, cautions are marked with the word "Caution!". Follow the information in the accompanying paragraph to avoid damage to equipment.

For cautions specific to the devices in your measurement system please refer to all the manuals accompanying your system.

Disclaimers

All Northern Digital Inc. tracking systems are designed to exclusively use NDI specific components (e.g. Position Sensors are manufactured to track NDI markers). NDI is not responsible for any outcome that should arise from using non-NDI components

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Updates

NDI is committed to continuous improvements in the quality and versatility of its software and hardware. To obtain the best results with your NDI system, check the NDI Partner Site regularly for update information:

http://support.ndigital.com

1 Introduction

The 3020 strober adapter is s-type and is only compatible with s-type ports on Optotrak Certus System Control Units. It is designed to permit Optotrak 3020 strobers to be used with the Optotrak Certus System.

To use the 3020 strober adapter, you must be familiar with the Optotrak Certus System. Please see the *"Optotrak Certus User Guide"* for additional information about the Optotrak Certus System.

This guide provides information on:

- 3020 strober adapter capabilities
- connecting the 3020 strober adapter to the System Control Unit and Optotrak 3020 strobers
- troubleshooting problems on the 3020 strober adapter

1.1 Related Accessories

Other strobers that are available for the Optotrak Certus System include the:

- marker strober, which can activate up to 24 markers attached to RJH connectors
- axon strober, which has a DB25 connector that can be used for either markers, rigid bodies or a tool
- tool strober, which has four, 10 pin, tool ports that accommodate tools with SROM files

2 Strober Capabilities

The 3020 strober adapter connects an Optotrak Certus System Control Unit to any of the Optotrak 3020 System strobers. The 3020 strober adapter can only be used with s-type strober ports. (The e-type components are intended for applications that require type BF isolation.) The e-type System Control Unit includes two e-type strober ports and a single s-type strober port. All of the strober ports on the s-type System Control Unit are s-type.

The 3020 strober adapter is detected by software and can be named through application software.

2.1 Limitations

There are a number of limitations on the 3020 strober adapter, as follows:

- A maximum number of 255 markers can be connected through the 3020 strober adapter.
- Only one 3020 strober adapter can be connected to each strober port, but three 3020 adapters can be used in total on an s-type System Control Unit.
- Only one 3020 adapter can be used on an e-type System Control Unit.
- The total number of markers cannot exceed 512 (the maximum number of markers for an Optotrak Certus System).
- If the 3020 strober adapter is part of a daisy chain of Optotrak Certus strobers, it must be the last part of the chain.

3 Connecting the 3020 Strober Adapter

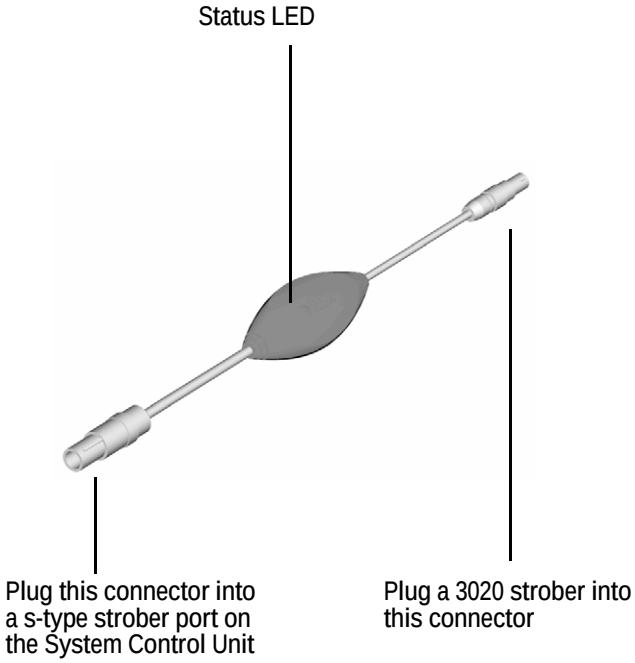

Figure 3-1: 3020 Strober Adapter

3.1 Strober Status LED

The strober status light flashes in one of three default patterns:

- a slow flash means the strober is connected to, and has communicated with, the System Control Unit
- a fast flash usually means the markers are being activated. If the strober powers on with a fast flash, it may, in rare cases, mean there is a communication problem.
- a solid light means there is a communication problem. See "Troubleshooting" on page 6.

Note: More detailed technical descriptions of the Optotrak Certus System components are included in the "***Optotrak Certus User Guide***".

3.2 Strober Activation Order

The markers connected to Optotrak 3020 strobers, which are themselves connected to the 3020 strober adapter, will be activated in sequence, starting with the first Optotrak 3020 strober connected to the 3020 strober adapter.

The order in which strobers and tools are activated is determined by the strober port to which they are connected. All the strobers which are connected to strober port 1 are activated before the strobers on port 2, which are activated before the strobers on port 3.

Tools and tool strobers are activated so that the tools connected to a tool strober are activated directly after the tool strober itself, and before the next strober in the chain. See Figure 3-2 on page 5, where the strobers and tools are numbered I to VIII.

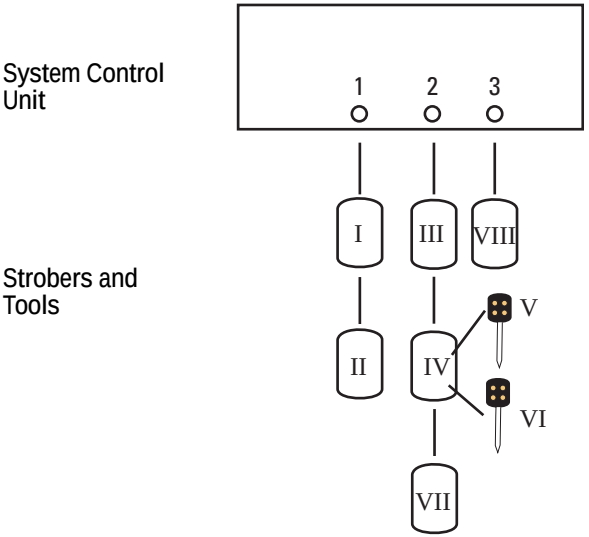

Figure 3-2: Strober and Tool Activation Order

3.3 Strober Extension Cable

Warning!

To maintain type BF isolation, all components between the e-type ports on an e-type System Control Unit and the patient must meet or exceed the certifications and approvals of the Optotrak Certus System. Serious personal injury could result if the appropriate type of isolation is not maintained.

The strober extension cable can be used to increase the distance between:

- the strober and the System Control Unit
- two strobers

Both s-type and e-type strober extension cables are available. Check that the colours of all connectors match each other. The keying for the different types of connectors is also unique to prevent using a s-type strober extension cable in an e-type port.

4 Troubleshooting

The strober connector won't fit into the strober port connector on the System Control Unit.

You may be trying to connect a s-type connector into an e-type connector. Check that the colour of the connectors match. The 3020 strober will only connect to s-type strober ports and s-type strober extension cables.

When the strober is plugged into the System Control Unit, the strober status LED is off, a solid green or flashing quickly.

The strober connector may not be firmly seated in the receptacle. Check that all connectors are firmly connected. There is an audible 'click' when a connector is correctly seated.

Either the strober or the strober extension cable (if used) is faulty. To determine if either of these possibilities is the source:

1. Connect another strober to the extension cable. If the second strober works, there is a problem with the first strober.
2. Connect the strober without the extension cable. If the strober operates correctly, there is a problem with the extension cable.

Markers are missing.

The marker connector may not be firmly seated in the receptacle. Check that all connectors are firmly connected. There is an audible 'click' when a connector is correctly seated.

Use the IR detection strip to determine if the marker is activated.

Ensure that the marker is directly facing the Position Sensor.

Ensure markers are within the measurement volume

Check for broken wires.

5 Equipment Symbols

These symbols are either on the 3020 strober adapter or in this guide, and have the following meanings:

Table 5-1: Symbols

Symbol	Meaning	Location
	Follow the information in this paragraph to avoid personal injury	Documents
	Static sensitive: Take electrostatic discharge precautions	3020 strober adapter