The Northwestern University Ring Type Harness for Below Elbow Amputees

by

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Introduction

Current practice requires a custom made harness for each upper extremity amputee as he is being fitted. Northwestern University Prosthetic Research Centre has developed a universal harness that is easily adjusted to fit all B/E amputees. The harness is referred to as the NU-RT Harness.

The basic component of the NU-RT Harness is a stainless steel ring at the back cross to serve as the distribution centre for the four diverging straps of the Figure 8 harness. By the use of appropriately placed buckles, adjustment is made to the size of the axilla loop, the length of the control attachment strap and the length of the suspensor strap.

The NU-RT Harness provides several important advantages. Fitting time is greatly reduced by prefabrication. Periodic replacement, especially of the axilla loop pad, is easily made . The harness is readily and completely adjustable to all B/E amputees and will fit either right or left arm amputees. The rotatory action of the straps sliding around the ring as the extremities change position causes the ring to lie flat in all working conditions.

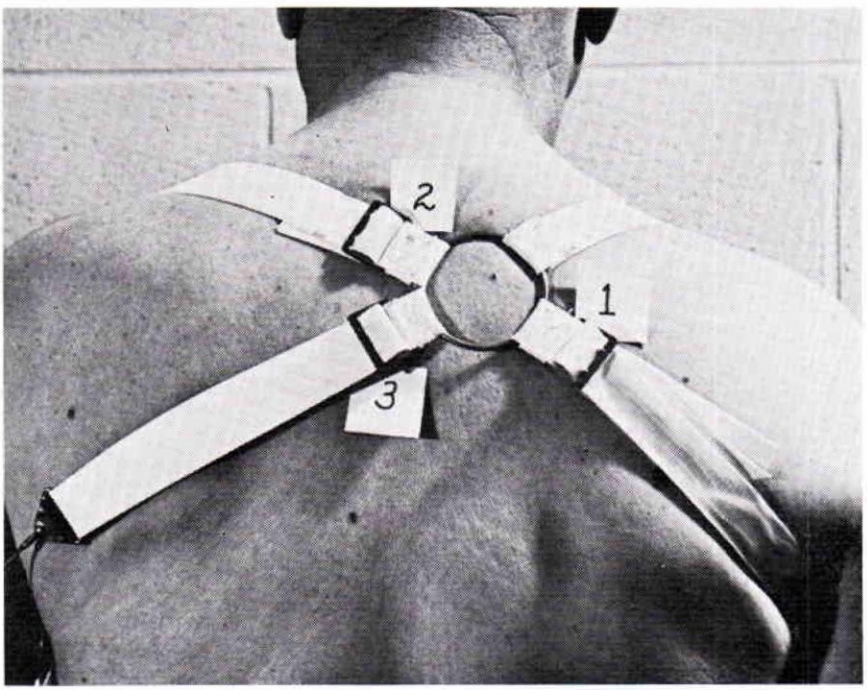
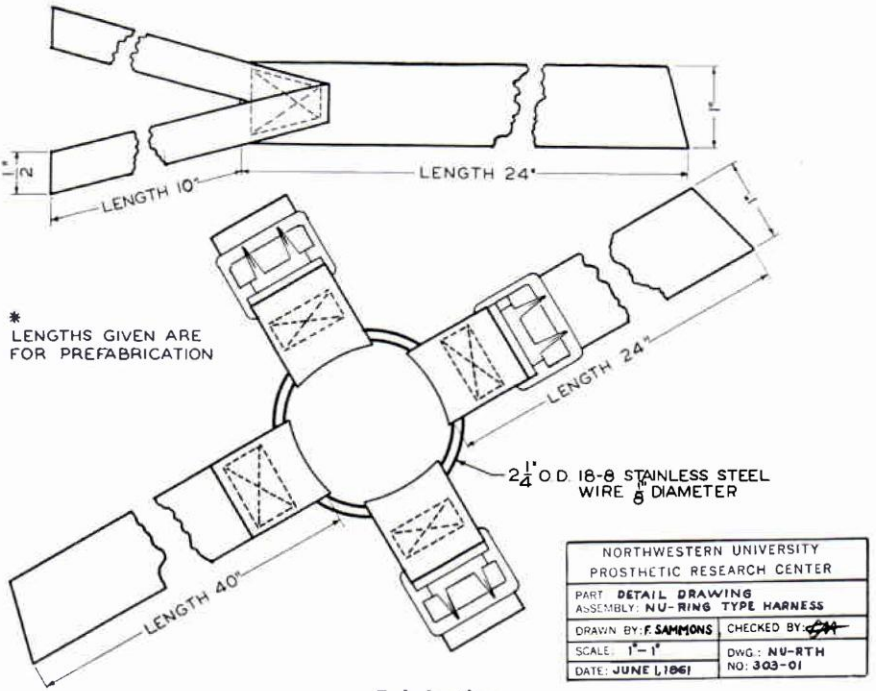


FIG. 1—1. Axilla loop. 2. Inverted Y suspensor. 3. Control Attachment strap.



Fabrication

The harness is fabricated from dacron tape. The strap length given in the detail drawing should be adequate for the majority of amputees.

The ring is made with a 2¼" O.D. and fabricated from 18-8 stainless steel wire ⅛" in diameter.

Heavy duty sewing is used since no further change in stitching is needed.

The axilla loop pad is not installed during prefabrication.

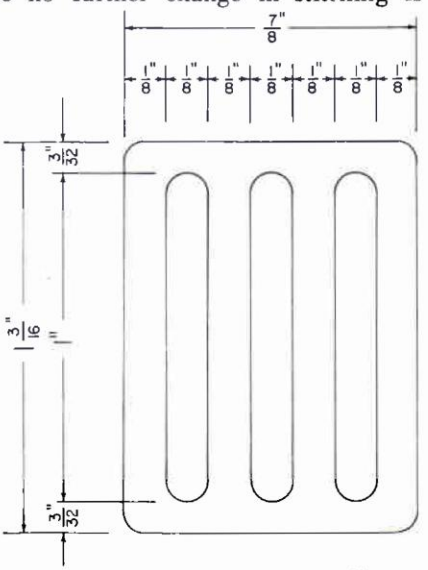
The inverted Y suspensor strap is separate from the ring. Construction of this part may be varied to meet the needs of the prosthesis.

Fitting

The harness is fitted as illustrated in the accompanying photograph (Fig. 3).

The axilla loop pad is installed. The ring is usually fitted toward the axilla loop side about 1" from the centre line. Pressure in the axilla is built up if the axilla loop is too small, although advantages in suspension and available work in the control cable are realized if the ring is fitted well over on the sound side.

The harness is adjusted to amputee preference.



Preferred 4-bar taber type buckle for NU-RT harness.

FIGURE 2

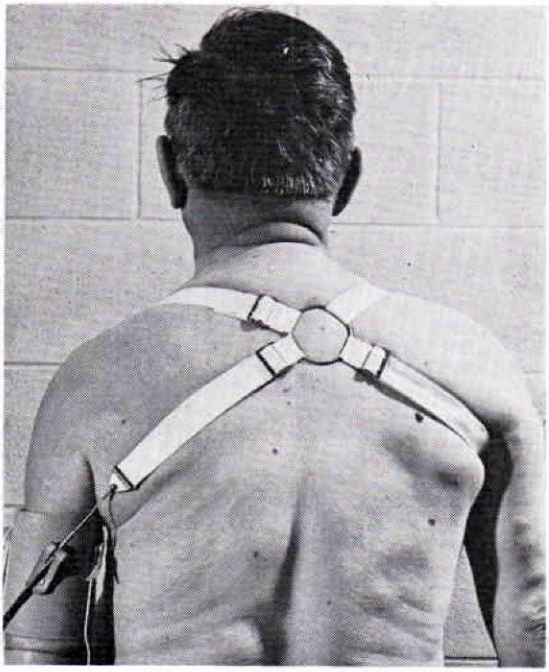


FIGURE 3