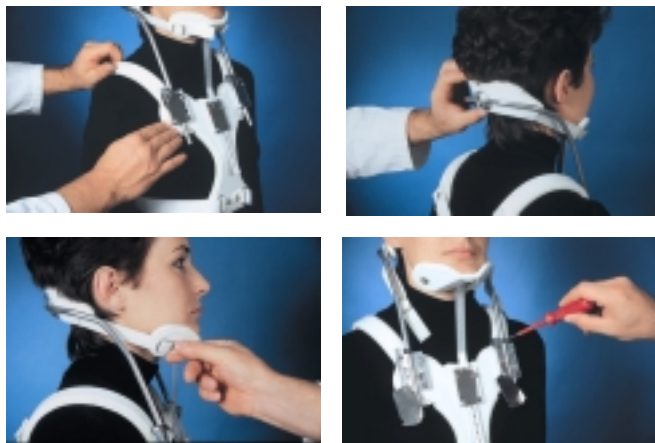


# TECHNICAL INFORMATION

## 2.2.2.



## Cervical Orthosis

T e c h n i c a l   D e s c r i p t i o n   a n d   I n s t r u c t i o n



# 1. INTRODUCTION AND TECHNICAL DESCRIPTION

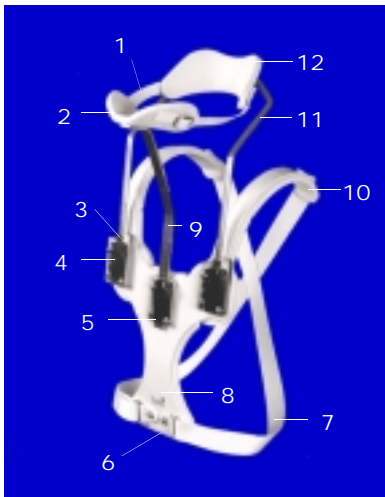
## 1.1. PRODUCT NAME

NAKR1      Cervical Orthosis, size 1  
 NAKR2      Cervical Orthosis, size 2

## 1.2. RANGE OF APPLICATION

ING Cervical Orthosis is used for the treatment of patients struck by cervical spinal injuries of both traumatic and non-traumatic etiology. The Cervical Orthosis is provided as an assembly unit set for individual treatment. The orthosis is prescribed by a medical doctor, fabrication and fitting are performed by the orthotist.

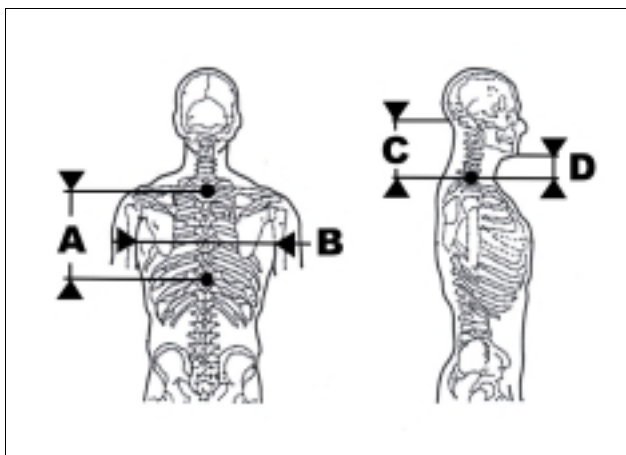
Advantages of the orthosis are adjustability at any time and improved wearing comfort (minimal weight, hygienic qualities, mobility of a patient). The Cervical Orthosis does not ensure the same fixation compared with the plaster cast.



## 1.3. TECHNICAL DESCRIPTION

The ING Cervical Orthosis consists of front plate (8), shoulder supports (10), mandibular (2) and occipital (12) pads. The mandibular pad is attached to central safety latch (5) via mandibular post (9). The occipital pad is attached to the side safety latches via occipital post (11). The Cervical Orthosis is fixed over the trunk using the shoulder straps. The mandibular and occipital pads are attached together via strap (1).

- |   |                      |    |                     |
|---|----------------------|----|---------------------|
| 1 | pad strap            | 7  | shoulder strap      |
| 2 | mandibular pad       | 8  | front plate         |
| 3 | safety ring          | 9  | mandibular pad post |
| 4 | side safety latch    | 10 | shoulder support    |
| 5 | central safety latch | 11 | occipital pad post  |
| 6 | roll guide           | 12 | occipital pad       |



## 2. MEASUREMENT

### 2.1. MEASUREMENTS

The ING Cervical Orthosis is to be assembled and adjusted according to the following measurements:

- A vertical length from sternal notch to xyphoid process
- B horizontal width from axilla to axilla
- C vertical length from occipital process to the shoulder horizontal line
- D vertical length from mandibular arch to the shoulder horizontal line



## 2.2. MEASURING PROCEDURE

**The measurements represent the straight lengths.**

Measure the length from the sternal notch to the xiphoid process - measurement A.



Measure the length from the left axilla to the right axilla - measurement B.



Measure the length from the occipital process to the shoulder horizontal line - measurement C.



Measure the length from the mandibular arch to the shoulder horizontal line - measurement D.



### 3. FITTING OF THE ORTHOSIS

#### 3.1. ADJUSTMENT OF THE TRUNK PART

Fit the front plate to conform the contours of the chest.

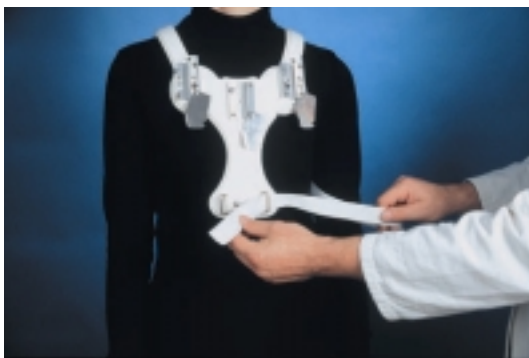
The upper edge of the front plate should be placed approximately 5-10 cm bellow the sternal notch. The lower edge of the front plate should overlap the xyphoid process.



Attach the shoulder supports to the front plate. The connecting screws could be placed into 2 different holes at the side safety latch.

The width adjustment, angulations and the shape of the shoulder supports do the correct contact between the shoulder supports and the trunk.

Fix the position of the shoulder supports by tightening screws reliably.



Cross the shoulder straps over the back and pull them thru the roll guides of the front plate.

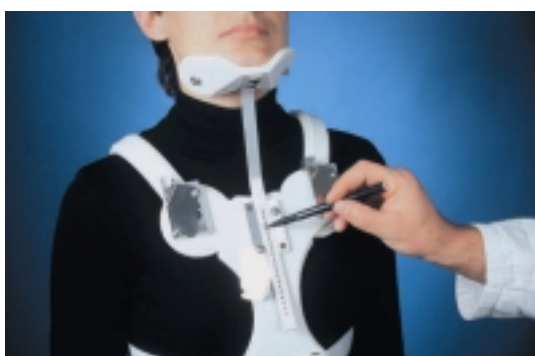


Tie the straps around the waist and fix them together both with hook and pile closure.



### 3.2. ADJUSTMENT OF THE MANDIBULAR SUPPORT

Keep the head of the patient in prescribed position during adjustment of the orthosis.



Place the mandibular pad post with pinholes over the pin of the central safety latch.



Turn clockwise the plate of the safety latch around the lower screw and fix the plate by tightening both the upper and lower screws.



Fit the mandibular pad to conform the contours of the lower jaw.



### 3.3. ADJUSTMENT OF THE OCCIPITAL SUPPORT

Release softly the safety rings.

Move the rings upwards over the post rods and fix them softly.



Place the occipital support over the neck and slide the rods of the occipital post into the side safety latches.

The safety rings fit in grooves of the side safety latches.



Preset the shape of the post of the occipital support - if necessary.



The height of the occipital pad is achieved by the position of the rings on the rods.

Fix the screws of the rings reliably.



Fit the occipital pad.

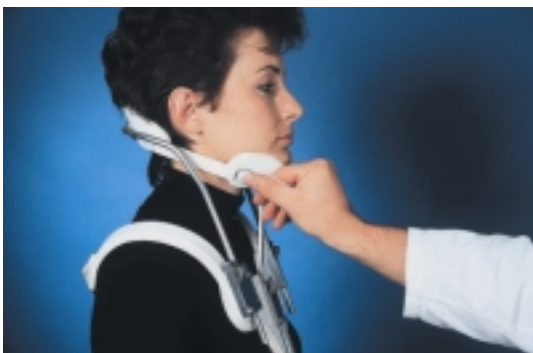


Lock the adjusted occipital supports in the side safety latches.

Fix the screws reliably.



Check the positioning and fitting of the occipital post.



Attach the strap of the occipital pad to the mandibular pad.





## 4. CHECK-OUT

The procedure should be as follows:

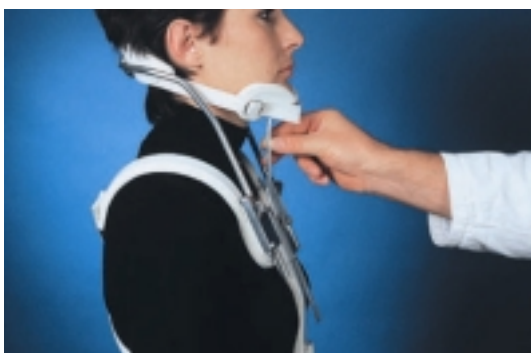
- positioning and fitting of the front plate



- positioning and fitting of the shoulder supports



- fitting, crossing and fastening of the shoulder straps



- positioning of the mandibular post
- enabling the clearance between the mandibular post and the neck



- positioning and fitting of the mandibular pad



- fitting of the occipital post
- the clearance between the occipital post and the neck



- positioning and fitting of the occipital pad

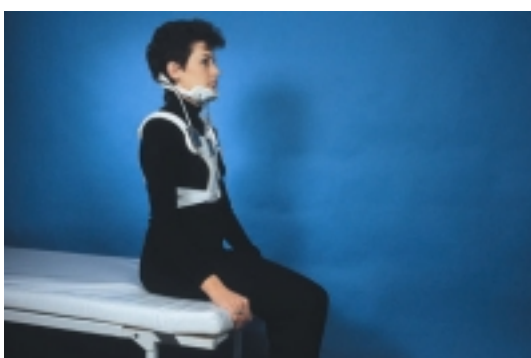


- fastening of the strap between the pads



## 5. FUNCTIONAL INSPECTION

Important:  
Consider the health state of the patient during the functional inspection.

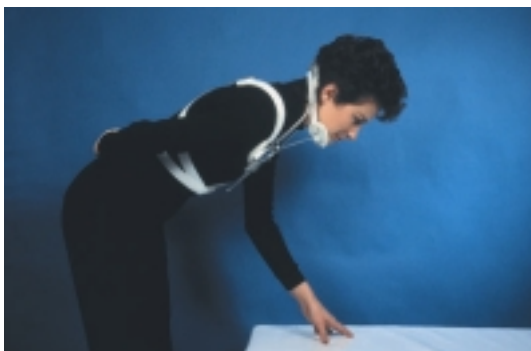


The inspection is focused on the following activities:

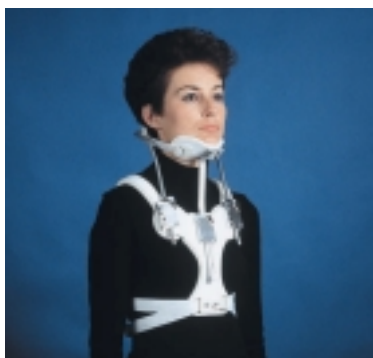
- staying and sitting



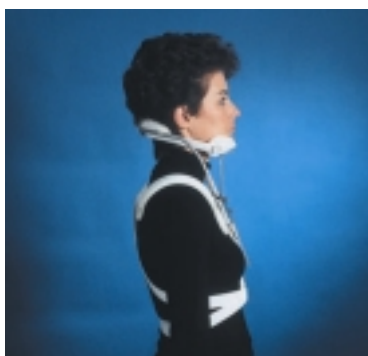
- laying



- forward bend and declination



Ventral view of the cervical orthosis.



Lateral view of the cervical orthosis.



Dorsal view of the cervical orthosis.

#### **Some recommendations for user of the cervical orthosis:**

- Prevent handling with the locking mechanism, especially during the walking, standing, sitting, etc.
- Prevent any modifications at set up cervical orthosis – e.g. releasing of the screws, readjustment of the belt length, reshaping the cervical orthosis, etc.
- In case of any trouble regarding the cervical orthosis visit and/or inform the working place fabricating your cervical orthosis.
- The orthosis may be worn applied over the underclothes – we recommend especially cotton T-shirts of sweat suction type
- You may wear standard dresses over the cervical orthosis





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