

## Exacta™ Hydraulic Hand Dynamometer

### Service Tips:

The Exacta™ Hydraulic Hand Dynamometer is designed to provide years of dependable service, with minimal maintenance. To make sure the instrument is reading accurately, we suggest occasionally making the few checks listed below. If you detect a problem, return the instrument.

### Posts

Remove the adjustable handle and check that each post moves slightly within its guide by exerting pressure on the sides of the post. Place a small amount of lubricant on the two guides once annually. If excessive friction exists between the post and guide, return the dynamometer for service.

### Hydraulics

To check the hydraulic mechanism, first remove the adjustable handle. While keeping an eye on the top post, push down on the bottom post. Generally, both posts should move about  $\frac{1}{8}$ " (3.2 mm) with top and bottom posts moving in opposite directions. Although highly unlikely, movements of less than  $\frac{1}{16}$ " (1.6 mm), indicates a probable leak in the hydraulic system, which requires service.

### Handle

Hold the instrument normally and look carefully at the way the forks of the adjustable handle are supported on the posts. Each fork should touch the post close to its center. If they do not, return the instrument to North Coast Medical for adjustment.

### Peak-Hold Needle

Check for excessive friction in the peak-hold assembly by turning the peak-hold needle knob (which is centered on the gauge) counter-clockwise. If the peak-hold needle does not travel with the gauge needle when the handle is being activated, return the instrument for service. If the peak-hold needle should disconnect from the support fitting, it can be repositioned easily. Unscrew the face cover and turn it upside down. The diamond shaped section of the needle's wire should clip snugly around the brass fitting of the peak-hold assembly.

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### Limited One-Year Warranty:

North Coast Medical warrants this dynamometer to be free from defects in workmanship and materials for one year from the date of purchase. If this instrument is found to be defective during the one-year period, North Coast Medical will repair or replace it, at its discretion. Thereafter, if a defect occurs, there will be a service charge for repairs. This warranty gives specific legal rights. There may be other rights, which vary from state to state.

**Warranty does not apply to defects which can be corrected through instrument calibration, or damages due to dropping. Please use the wrist strap to avoid accidental damage.**

**Note: When disposed of, this unit may leak oil.**



North Coast Medical, Inc.  
780 Jarvis Drive, Suite 100  
Morgan Hill, CA 95037 – U.S.A.

EC REP



ICON (LR) Limited  
South County Business Park  
Leopardstown, Dublin 18  
D18 X5R3, Ireland



North Coast Medical, Inc.  
[www.ncmedical.com](http://www.ncmedical.com)

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**EXACTA™**  
Precision & Performance

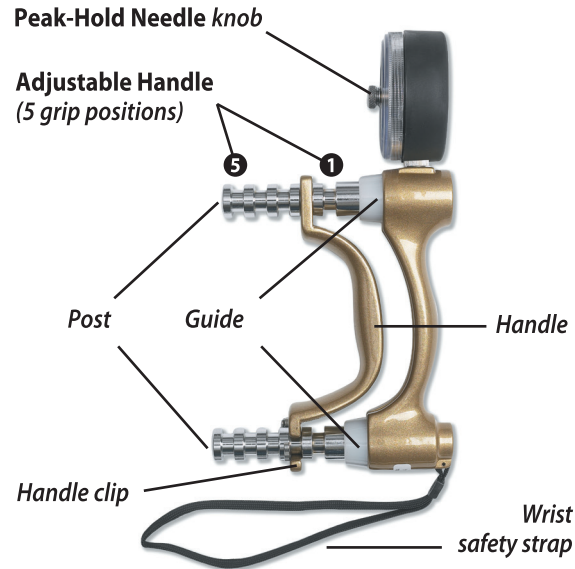
# Hydraulic Hand Dynamometer



*Years of reliable service  
with minimal maintenance.*

**REF NC70142**

## Exacta™ Hydraulic Hand Dynamometer



The Exacta™ Hydraulic Hand Dynamometer offers numerous features for standard screening procedures as well as for assessing hand trauma and disease.

- **Dual-Scale Readout:**

Displays grip force in pounds and kilograms (200 lbs. or 90 kg maximum reading).

- **Peak-Hold Needle:**

Automatically retains the highest reading on the peak-hold needle, offering convenience and ease of recording. This reading will remain on the gauge until it is reset.

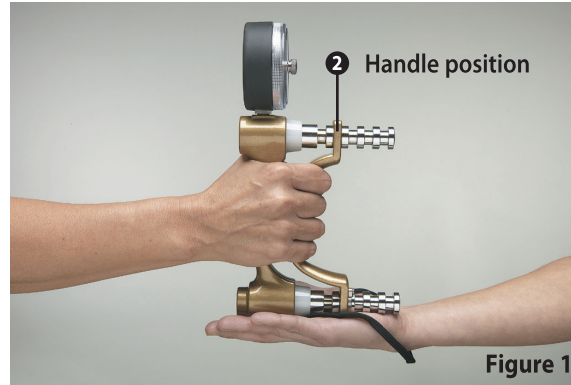
- **Accurate and Reproducible:**

It is isometric in use, with almost no perceptible motion of the handles, regardless of grip strength. This ensures accurate, reproducible results.

- **Adjustable Handle (positions ① to ⑤):**

To accommodate various size hands, the handle adjusts to five grip positions: from 1 3/8" to 3 3/8" (3.5 cm to 8.6 cm) in half-inch increments. Since grip strength also may vary in an individual patient, this feature allows the evaluator to quantify grip strength for different size objects.

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### Instructions For Use:

1. Set the adjustable handle to the desired position. Make sure that the handle clip is located at the lower (furthest) post from the gauge. If you do not replace the handle to the correct position, inaccurate readings will result.
2. Rotate the peak-hold needle counter-clockwise until it reaches zero.
3. Using the wrist safety strap ensures the continued accuracy of the Exacta™ Hydraulic Hand Dynamometer by minimizing the chance of dropping and damaging the instrument. Let the patient arrange the instrument so that it fits in the hand comfortably. Request that the patient squeeze with maximum strength. The peak-hold needle will automatically record the highest force exerted.
4. After the patient has used the Exacta™ Hydraulic Hand Dynamometer, record the reading.
5. Reset the peak-hold needle to zero before recording new readings.

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### Suggested Standard Procedures:

1. Have patient sit comfortably. The shoulder should be adducted and neutrally rotated. The elbow should be flexed to 90°. The forearm and wrist should be in a neutral position.
2. Place the Exacta™ Hydraulic Hand Dynamometer in the patient's hand. Use the wrist safety strap and gently support the base to prevent accidental dropping (Figure 1).
3. Grip force should be applied smoothly, without rapid wrenching or jerking motion. A 0° to 30° wrist extension is permissible as maximal grip is achieved. Wrist positions other than extension or those exceeding 30° extension should be noted in the chart.
4. Documenting Results
  - a. Generally, use the second dynamometer handle position (Figure 1) and test each hand three times. Test the normal hand, followed by the injured hand. The mean of three trials is recorded in either pounds or kilograms.
  - b. To determine maximal effort, test each hand three times in all five handle positions. Test normal hand followed by injured hand. Record the average. Repeating the test after short rest periods helps determine if a patient is exerting maximum effort.

*If the patient has carried out the test with full effort, there will be less than 10% variation in results for various grip positions. Larger, inconsistent variation between the tests indicates that the patient has not exerted maximum effort.*