



The Technology of Human Performance

Treatment Guidelines – Hand

These guidelines may be applicable to a variety of diagnosis, injuries and dysfunctions. Use your clinical judgment when proceeding on any course of treatment.

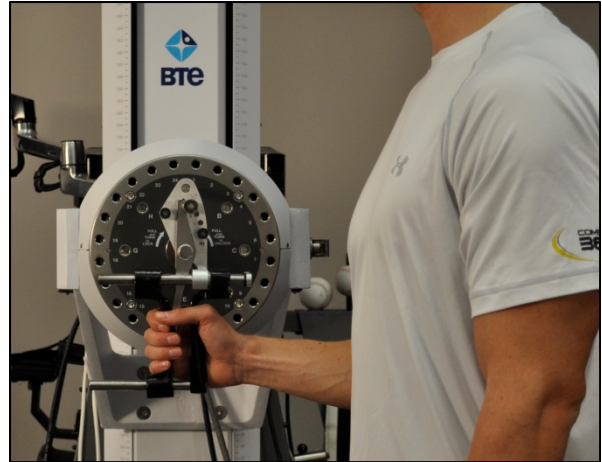
Description	The following represents suggested areas of assessment and uses of the PrimusRS for clients' with hand involvement. This assessment focuses on the hand, however, you are encouraged to evaluate the client as a whole.
Contraindications	Treatment needs of a hand can vary greatly based on diagnosis and intervention goals. Utilize your clinical knowledge and skills in determining the appropriateness of any treatment plan prior to beginning a program with a client. Always consider client safety a priority.
Early Intervention	Hand strengthening may begin as early intervention with the use of the Isometric Exercise mode. There may also be ROM deficits that will need to be addressed when appropriate for diagnosis and/or surgical procedure.
Establish need	<ol style="list-style-type: none"> 1. Strength – implement an isometric comparison test for grip and/or pinch to compare injured side to non-injured side. 2. Endurance – to further establish need. 3. Effects of repetition, if indicated 5. Work or other functional tolerance (hand tools, ADL, etc...)
Develop Treatment	<p>Isometric and dynamic strength (endurance) of hand function can be measured by performing specific functional tasks (grip, pinch, etc...). This will help determine if there is a weak area to focus on.</p> <p>Initiate a treatment program that includes the hand motions for which you have established a need. Set initial resistance at 30% of current strength level. Perform exercise to fatigue. Set new goal based on exercise result for next session.</p> <p>In addition, you may perform a task analysis to determine appropriate exercises based on return to work, ADL or other functional needs.</p>
Primus Attachment Suggestions	<p>#162 - grip #151 - tip pinch, palmar pinch, lateral pinch #502/504 - grip/pinch with rotation #202 - pinch with rotation, intrinsic strengthening #302/301 – grip/pinch with rotation #103 – tool use (3/4 inch or 19mm wrench)</p>

Positioning Suggestions

Grip



Grip – Position client on the right side of the PrimusRS.



Grip – Set height so the elbow is at approximately 90 degrees flexion.

Set-up:

Exercise Head: Number five position. Have the client stand on the right side of the exercise head for both right and left hands.

Attachment: 162

Tool Setup: For a neutral position setup, attach the 162 tool with the stabilization pin in the “A” position. The grip width can be set to one of 5 positions. For isometric activities, any setting may be used. For dynamic activities, positions 3, 4, or 5 are most effective.



Overhead View

Client Positioning Chair Setup: The Positioning Chair is not required for this activity. If a seated position is desired, the Positioning Chair, or alternative chair may be used. For safety and stability, use a chair that does not have wheels, or the wheels can be locked.

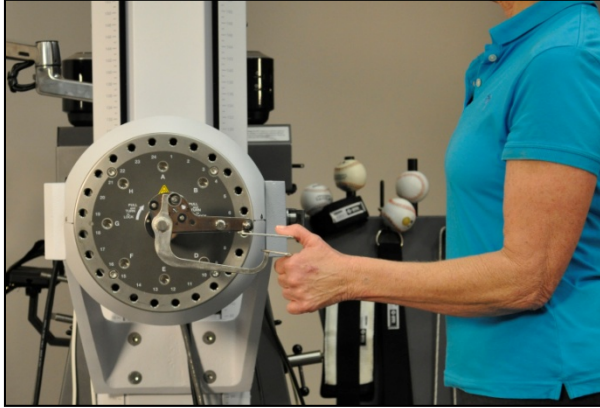
Alternate Set-Up Ideas: The following setup changes may be made to better simulate a functional work or ADL activity, or to accommodate a ROM limitation the client may have.

- Change the positioning pin location to change the angle of the forearm in relation to the client’s body.
- Change the height of the exercise head for more realistic functional setup (e.g., overhead or in a stooped position).
- Change the exercise head angle to go from a neutral grip position to one more supinated or pronated.

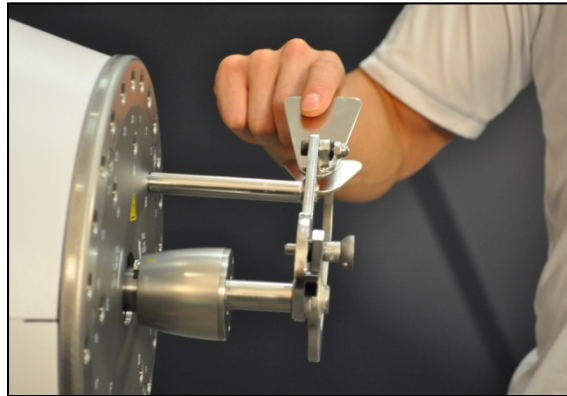
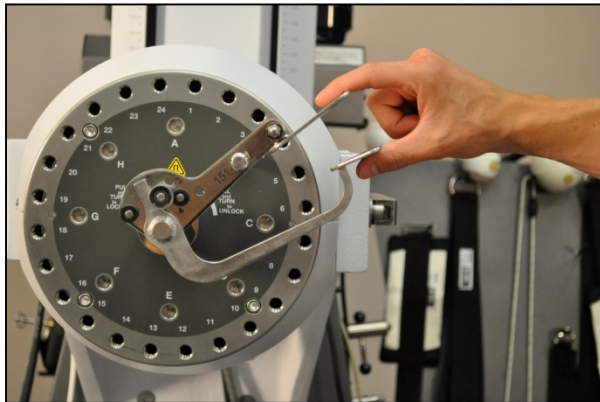
Pinch

The three standard pinch positions are represented below.

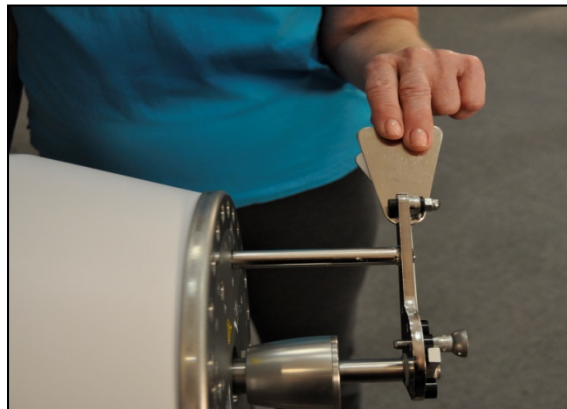
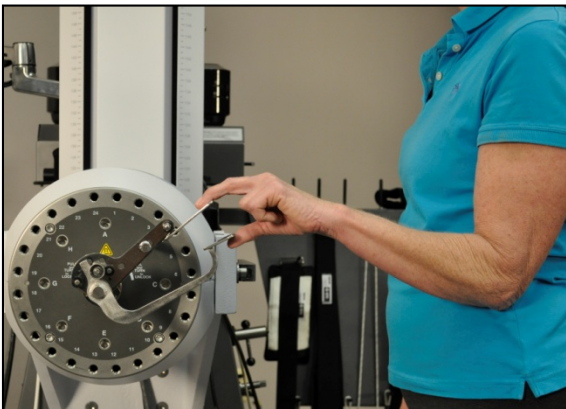
Key Pinch



Tip-to-Tip Pinch



Palmar Pinch



Pinch (continued)

Set-up:

Exercise Head: Number five position

Attachment: 151

Tool Setup:

Key Pinch – For a neutral position setup, attach the 151 tool with the stabilization pin in the “C” position. The pinch width can be set to one of 4 positions. For isometric activities, any setting may be used. For dynamic activities, positions 2, 3, or 4 are most effective.

Tip-to-Tip Pinch – For a neutral position setup, attach the 151 tool with the stabilization pin in the “B” position. The pinch width can be set to one of 4 positions. For isometric activities, any setting may be used. For dynamic activities, positions 2, 3, or 4 are most effective.

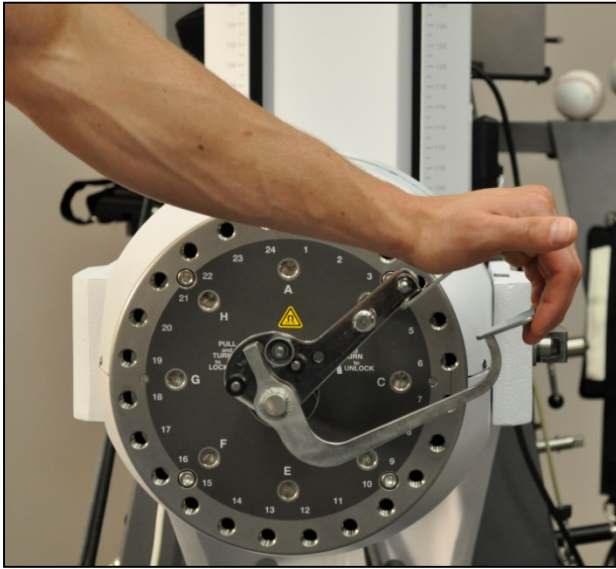
Palmar Pinch – For a neutral position setup, attach the 151 tool with the stabilization pin in the “B” position. The pinch width can be set to one of 4 positions. For isometric activities, any setting may be used. For dynamic activities, positions 2, 3, or 4 are most effective.

Client Positioning Chair Setup: The Positioning Chair is not required for this activity. If a seated position is desired, the Positioning Chair, or alternative chair may be used. For safety and stability, use a chair that does not have wheels, or the wheels can be locked.

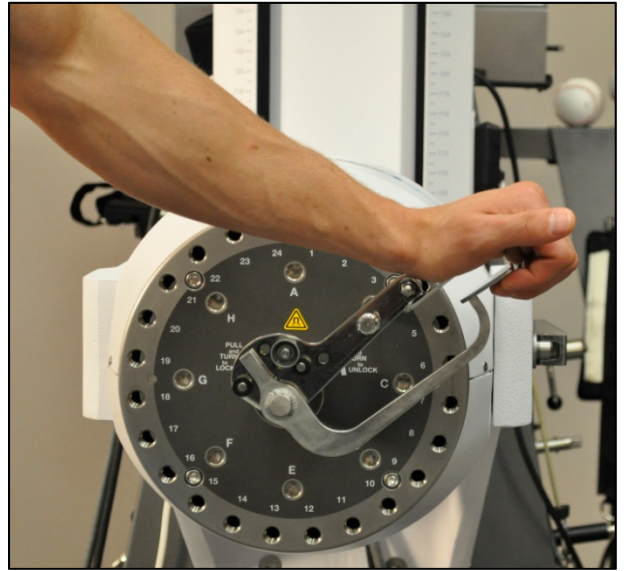
Alternate Set-Up Ideas: The following setup changes may be made to better simulate a functional work or ADL activity, or to accommodate a ROM limitation the client may have.

- Change the positioning pin location to change the angle of the forearm in relation to the client’s body.
- Change the height of the exercise head for more realistic functional setup (e.g., overhead, or in a stooped position).
- Change the exercise head angle to target a neutral, supinated, or pronated position.

Finger Flexion



Position client on the left side of the PrimusRS.



Set height so the wrist is in slight extension.

Set-up:

Exercise Head: Number five position

Attachment: 151

Tool Setup: Attach the 162 tool with the stabilization pin in the “B” position. The range of motion can be set to one of 4 positions, depending on hand size and desired ROM. For dynamic activities, positions 2 or 3 will be most effective.

Client Positioning Chair Setup: The Positioning Chair is not required for this activity. If a seated position is desired, the Positioning Chair, or alternative chair may be used. For safety and stability, use a chair that does not have wheels, or the wheels can be locked.

Alternate Set-Up Ideas:

- Place a pad on the upper plate of the 151 tool where the heel of the hand is placed to make the exercise more comfortable for the client.
- Change the height of the exercise head for more realistic functional setup (e.g., overhead, or in a stooped position).
- Change the exercise head angle to target a neutral, supinated, or pronated position.