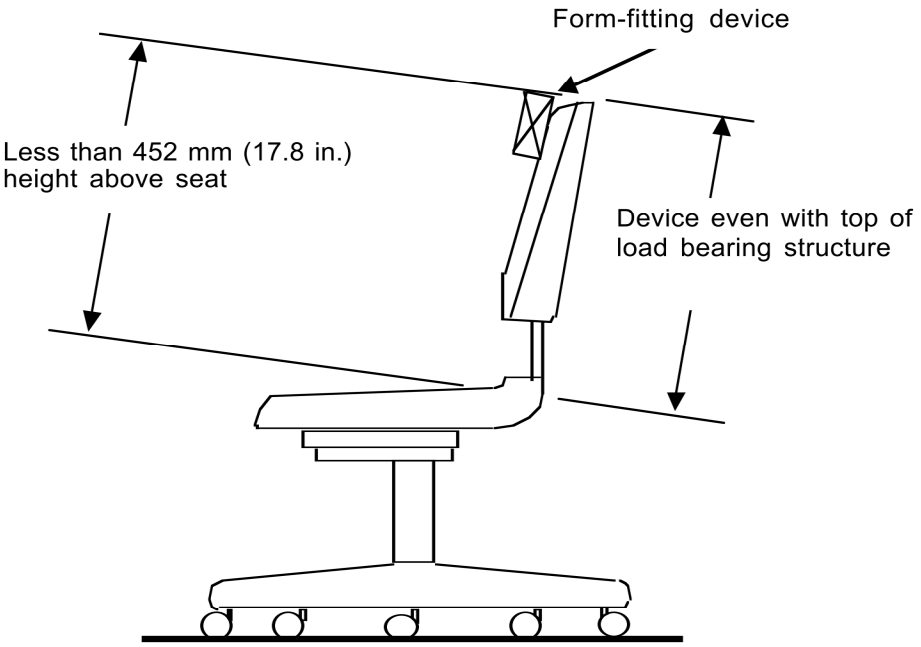

Figure 5c - Positioning of Form-Fitting Device for Backrests Lower than 452 mm (17.8 in.) Backrest Strength Test - Static - Type I

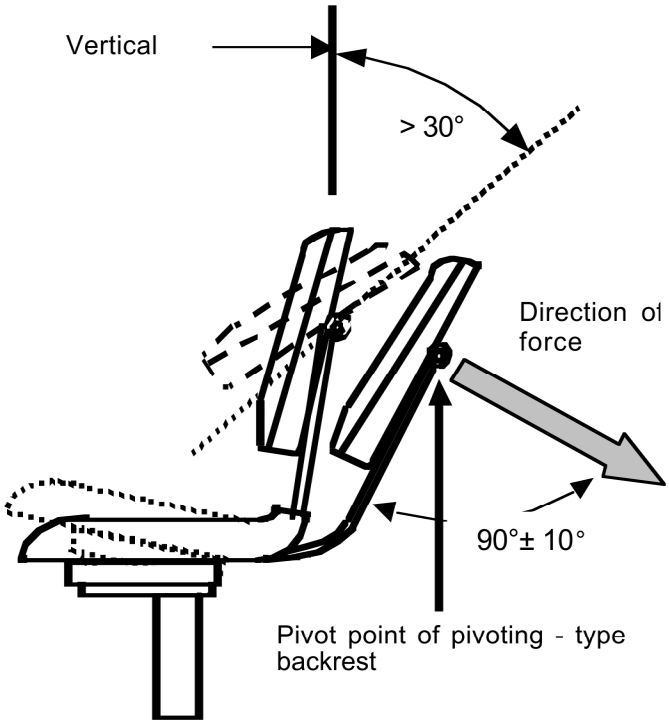

Figure 5d - Force Application for Backrests that Pivot Greater than 30° Backrest Strength Test - Static - Type I

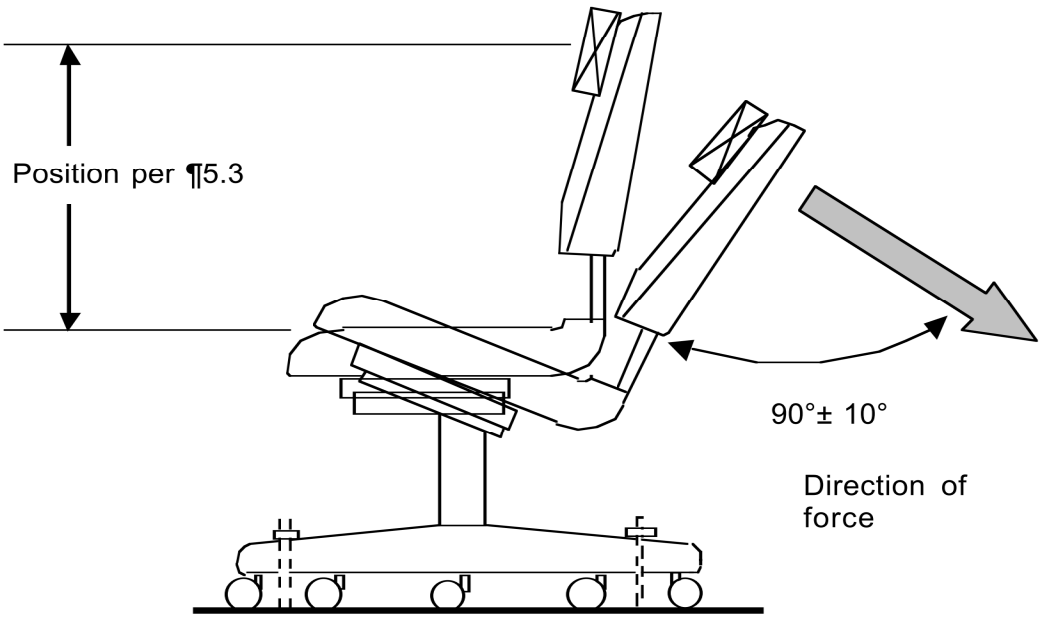

Figure 5e - Force Application for All Other Backrests
Backrest Strength Test - Static - Type I

5 Backrest Strength Test - Static - Type I (See Figures 5a through 5e)

5.1 Applicability

This backrest strength test shall be performed on Type I chairs. For chairs with tilt locks, locking the chair changes the chair type (See Section 4) and must also be tested according to Section 6 in the upright locked position. An additional chair may be used for the Section 6 testing.

5.2 Purpose of Test

The purpose of this test is to evaluate the ability of the chair to withstand stresses such as those caused by the user exerting a rearward force on the backrest of the chair.

5.3 Test Setup

5.3.1 The chair shall be placed on a test platform in an upright position and the base shall be restrained from movement, but shall not restrict movement of the backrest or arms of the chair. Figure 5e shows one acceptable method of restraining the chair.

5.3.2 If adjustable features are available, all adjustments shall be set at normal use conditions, except for height-adjustable pivoting backrests which shall have the pivot point set at its maximum height or 406 mm (16.0 in.) whichever is less.

5.3.3 After making the above adjustments, determine points 406 mm (16 in.) and 452 mm (17.8 in.) above the seat. (See Figure 5a). Mark these points on the vertical centerline of the backrest.

a) If the top of the load-bearing structure/surface of the backrest is greater than or equal to 452 mm (17.8 in.) above the seat, position the center of the form-fitting device (See Definition 2.10) 406 mm (16 in.) above the seat. (See Figure 5b).

b) If the top of the load-bearing structure/surface of the backrest is less than 452 mm (17.8 in.) above the seat, position the top of the form-fitting device even with the top of the load-bearing structure/surface. (See Figure 5c).

c) If the unit has a pivoting backrest rest that stops at a position less than or equal to 30 degrees rearward of vertical (with the support structure in its most upright position), position the form-fitting device as directed in a) or b). If the unit has a pivoting backrest that stops at a position greater than 30 degrees rearward of vertical (with the support structure in its most upright position), position the center of the form-fitting device at the height of the pivoting point. (See Figure 5d).

5.3.4 Attach a loading device (front push or back pull) to the horizontal center of the backrest as determined above. The force shall be applied 90° ± 10° to the plane of the backrest(s) when at the back stop position. (See Figure 5e). If applying the load with a cable and pulley system, the cable must initially be a minimum of 750 mm (30 in.) in length from the attachment point to the pulley. Note: Where the design of the chair does not allow the transfer of force(s) from the loading device to the load-bearing structure/surface, a bridging device not exceeding 89 ± 13mm (3.5 ± 0.5 in.) in height may be used to span the width of the load-bearing structure/surface. The plane of the backrest may be defined by the front of the CMD upright.

5.4 Test Procedures

5.4.1 Functional Load

a) A force of 890 N (200 lbf.) shall be applied to the backrest at the backstop position for one (1) minute. If the backrest/tilt lock mechanism will not accept the load due to gradual slipping of the adjustment mechanism during the load application, set the backrest to its most rearward (stopped) position, then apply the specified load(s).

b) Remove the load and evaluate the product in accordance with the acceptance level in 5.5.1.

5.4.2 Proof Load

a) A force of 1334 N (300 lbf.) shall be applied to the backrest at the backstop position for one (1) minute. If the backrest/tilt lock mechanism will not accept the load due to gradual slipping of the adjustment mechanism during the load application, set the backrest to its most rearward (stopped) position, then apply the specified load(s).

b) Remove the load and evaluate the product in accordance with the acceptance level in 5.5.2.

5.5 Acceptance Level

5.5.1 Functional Load

There shall be no loss of serviceability to the chair.

5.5.2 Proof Load

There shall be no sudden and major change in the structural integrity of the chair. Loss of serviceability is acceptable.