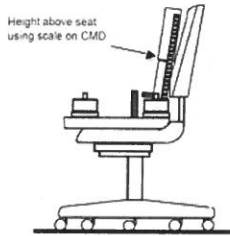
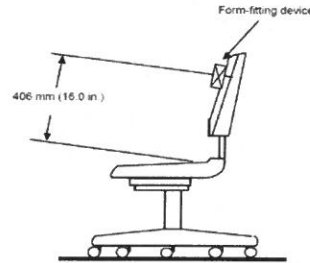


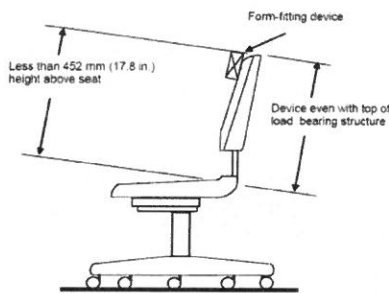
**NORTHFIELD METAL PRODUCTS**  
 195 Bathurst Dr., Waterloo, ON, N2V 2B2  
**CHAIR TESTING DESIGN ENGINEERING**  
**(ANSI/BIFMA x 5.1 - 2017)**



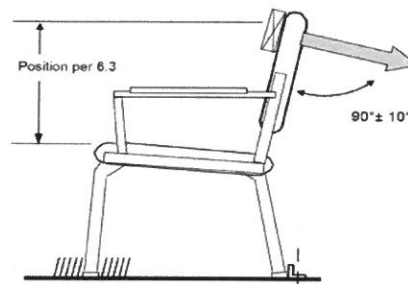
**Figure 6a - Height Determination  
 Backrest Strength Test - Static - Type III**



**Figure 6b - Positioning of Form-Fitting Device for Backrests Higher than 452 mm  
 (17.8 in.) Backrest Strength Test - Static - Type III**



**Figure 6c - Positioning of Form-Fitting Device for Backrests Lower than 452 mm  
 (17.8 in.) Backrest Strength Test - Static - Type III**



**Figure 6d - Force Application  
 Backrest Strength Test - Static - Type III**

**SECTION 6 BACK STRENGTH TEST- STATIC - TYPE III**

**(CHAIRS WITH FIXED SEAT with FIXED BACKREST)**

(Test does apply to chairs with backrest height greater than (7.9 in. (200 mm))

**PRODUCT TESTED:** T-4001 TA TL N15811

**DATE RECEIVED :** APR 7, 2020

**PURPOSE:** 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.

**Direction:** The following test procedures shall be used:

- A) The chair shall be placed on a test platform in an upright position with the base shall be restrained from movement, but shall not restrict movement of the backrest or arms of the chair. Figure 6d shows one acceptable method of restraining the chair.
- B) On chairs with adjustable features, 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 16 in. (406 mm) whichever is less.
- C) Determine points 16 in. (406 mm) and 17.8 in (452 mm) above the seat. (See figure 6a). Mark these points on the vertical centerline of the backrest.
- D) If the top of the load-bearing structure/surface of the backrest is greater than or equal to 17.8 in. (452 mm) above the seat, position the center of the form-fitting device 16 in. (406 mm) above the seat. (See figure 6b)
- E) If the top of the load-bearing structure/surface of the backrest is less than 17.8 in. (452 mm) above the seat, position the top of the form-fitting device even with the top of the load-bearing structure/surface. (See figure 6c)
- F) Attach a loading device (front push or back pull) to the horizontal center of the backrest as determined in steps (D and E) above. With the backrest at its back stop position, apply a force that is initially 90 degrees +/- 10 degrees to the plane of the backrest (see figure 6d). The force is not intended to be maintained at 90 degrees +/- 10 degrees throughout the loading of the backrest. If applying a load with a cable and pulley system, the cable must initially be a minimum of 30 in. (762 mm) in length from the attachment point to the pulley. The angle of the backrest plane may be determined by the angle of the plane of the front of the CMD upright. 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 1.5 to 4 in. (38 to 102 mm) 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.

- G) A functional load of 150 lbf (667 N) 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). Remove the load and record findings in accordance with the functional load acceptance level.
- H) A proof load of 225 lbf (1001 N) 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). Remove the load and record findings in accordance with the Proof load acceptance level.

ACCEPTANCE LEVEL: There shall be no loss of serviceability.

**RECORD OF TEST**

Height of backrest from seat surface 26" in. Test Number: 20-0035  
 Does unit have a pivoting backrest Y    N       Test Date : APR 20,2020  
 Angle of travel of the pivoting backrest    N/A Tested By : B.DUXBURY  
 Center of Form fitting device placed at 16 in. Y    X       Cycles per min    N/A  
 Top of form fitting device place even with top of backrest Y          X   

Functional Load (150 lbf 1 min)             Conclusions:    PASSED        
 Comments:    NO DAMAGE      

Proof Load (225 lbf 1 min)                          
 Comments:    then took it up to 350 lbs. with no damage      

Pull Angle:    64.6°   

APPROVED BY:    Valerie Bradley     
 Engineering Manager/Designate