Scope:
The Sole purpose of this test set, (Both Comb Impact and Vertical Lift and optional Skirt Deflection Unit) is to be used in determining the compliance or non-compliance of the adjustments of the escalator comb plates, relative to the satisfaction of ASME A 17.1-2000 ¶ 6.1.6.3.13, and Skirt Deflection limits set by Rule 802.3f in the same ASME code.

Safety:
All safety measures required by the user’s employer MUST be strictly followed to avoid injury. Full control of the escalator MUST be acquired before attempting any of these measurements. StopLoss is not responsible for results of accidents or negligence.
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Limited Warranty:
The AL-CIVL or AL-CIVL-SD test set covered in this manual is warranted by StopLoss Resources to the original purchaser against defects in workmanship and materials under normal use for a period of six months after the date of purchase. During that time StopLoss Resources will repair or replace, at its option, any part which is determined to be defective and is returned, with shipping costs prepaid by the customer, to StopLoss Resources.

Limits of Liability:
StopLoss Resources for consequential and incidental damages is expressly disclaimed. StopLoss Resources’ liability in all events is limited to and shall not exceed the purchase price.

Note: If this test set is used for any purpose other than that stated in the purpose section of this document, all warranties and liabilities are null and void.

Disclaimers:
The illustrations in this manual are for identification only. Actual product may very slightly from one issue to the next.
The application instructions for the test devices are suggestions only. The mechanics using these testers for demonstration of compliance must use their own knowledge, experience and judgment to apply the tool to the escalator.

Purpose:
To demonstrate compliance of ASME A 17.1-2000 ¶ 6.1.6.3.13 and of Rule 802.3f

Test Limits:
Test limits are set by the ASME code, or by the local authority, whichever is more stringent

Tests required by code which this kit covers
Skirt Deflection by Rule 802.3f.
Method of Test:
While the escalator is stopped, but monitored by its control circuitry (inspection mode), apply the testers, one at a time, to the comb plate and perform the specified tests. Watch for the change in the appropriate safety switch indicators.

Comb Impact Tester:
The Comb Impact tester is designed to compress the comb plate (front to back) to demonstrate the force required to trip the impact safety switch(es) of the plate. It may be applied to the comb plate on either side and at the center to determine the force needed to exercise the impact safety switches. Refer to the current revision of the ASME A 17.1-2000 ¶ 6.1.6.3.13 to determine compliance limits.

Comb Impact test procedure:
1. Remove enough of the comb from the plate to apply the inside face of the tester against the front edge of the plate. (The inspector may want to test the limits at either side, or the middle). Use the end of the tester that says “Comb End” where the comb was removed.
2. Pull the ends of the tester open enough to allow the inside face of the end plate (marked “Pit End”) to overlap the edge of the plate at the pit end. Manually compress the tester against the edges of the plate.
3. Place the meter between the hook ends of the screw hooks and the shackles into the hooks.
4. At the “Pit End” of the tester, allow the nut to unscrew just enough to see two threads of the hook thread exposed.
5. By hand, use the long threaded rod at the comb end to remove all slack in the hook system.
6. Zero the meter with the wheel in the back of the meter.
7. Zero the maximum pointer hand using a counter clockwise rotation, of the knob in the middle of the meter face.
8. Monitoring the switch indicators on the controller, use the red handle on the “Pit End” of the test set to apply pressure until the appropriate switch trips.
9. When the switch trips, the maximum indicator will be located at the number of pounds required to trip the switch.
10. Adjust the escalator so the switch trips at a value less that the maximum allowed and retest if necessary.
Vertical Lift Tester:
The Vertical Lift tester is designed to elevate the comb plate at the comb edge to demonstrate the force required to trip the vertical lift safety switch(es) of the plate. The test is usually performed in the center of the comb plate. Refer to the current revision of the ASME A 17.1-2000 ¶ 6.1.6.3.13 to determine compliance limits.

Vertical Lift procedure:
After taking appropriate steps to ensure the escalator is out of service and all safety precautions are followed and after removal of the comb at the appropriate spots of the comb plate, apply the Vertical Lift tester.

1. Place the dynamometer on the vertical lift tester, and place the tester on the step just under the comb plate edge, so the floating bracket lifted by the tester will elevate the comb plate edge.
2. Zero the dynamometer with the wheel on the back of the meter.
3. Zero the maximum pointer hand using a counter clockwise rotation, of the knob in the middle of the meter face.
4. Watch for the escalator safety switch indicator to report the tripped switch.
5. Using the red handle, elevate the top screw hook to pulls up on the comb plate.
6. When the safety switch indicator reports a tripped switch, read the red maximum pointer and record the results.
7. If the reading is out of compliance, adjust the escalator and repeat the test.
Optional SD unit:
The New SD unit is for use in making Skirt Deflection measurements (Not to be confused with the Step Indexing Tool).
At this time, the requirements are that with the application of 150 lbs of force, the skirt must not deflect more than 1/16\textsuperscript{th} of an inch.

This device when placed onto a step and properly set up, will measure the distance the skirt moves as a force is applied to the skirt, starting at 0 lbs to 150 lbs while measuring the movement with the Vernier Caliper (included).

1. Without a meter or a caliper mounted on the SD unit, push the mandrel of the unit back to the frame of the SD unit until the disk at the end of the mandrel stops the movement at the housing.

2. Place the unit on the step in the first available step groove, pointing the pushing foot towards the skirt needing the test.
3. Loosen the large knob to allow the meter to be placed between the hook of the mandrel and the pulling post.
4. When the meter is in place, tighten the meter hook to just take up all slack in the mechanism.
5. Tighten the space further, allowing the skirt foot to settle in on a position, and remove any further meter or mechanism movement. A safe force to apply for this is about 50 lbs.
6. Pull the vernier caliper out far enough to exceed the distance between the “V” notch mounting the caliper, and the outside of the disk mounted at the end of the mandrel.
7. Mount the Vernier Caliper on the main frame of the SD unit and tighten the Allen head screws while holding the caliper firmly into the “V” notch made for it.

8. Push the moving end of the caliper in to touch the disk on the mandrel

9. Loosen the pull on the meter until the meter reads zero
10. The foot of the mandrel should be flat against the skirt
11. If anything has moved, re adjust to remove any linkage play.

Begin the measurement
12. Again, bring the moving caliper blade to the disk and “Zero” the caliper.
13. Begin tightening the tension wheel until the meter reads 150 lbs.
14. Read the movement of the skirt on the vernier caliper.
15. If the escalator fails, make repairs and test again from step 10 above.

Remove the tool by removing the 150 lbs through the meter, and then remove the attachment to the step by loosening the two wing nuts. Move the unit to the opposite skirt or, the next step to be used for the test.

**Contents of Test set:**

1. Case with foam
2. Dynamometer with Calibration Certificate (Used on all three units).
3. Comb Impact tester
4. Vertical Lift tester
5. One red actuating handle (fits both the Comb Impact and Vertical Lift Units)
6. Skirt Deflection Unit (if purchased) including vernier caliper
7. This User’s Manual

**Quality Certificate:**

I Certify that the CIVL Test Set has been made from brand-new, never used, first-grade materials by first grade workmanship, in conformance to the contract stipulated quality, specifications and capability.

By____________________ Date ___/___/_____

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