**PIA Technical Standard TS-112 v2.0**
**Parachute Industry Association**
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# Harness/Container – AAD Installation Test Protocol

**SCOPE:**

The intent of TS-112 is to provide a recommended test matrix for any Harness/Container manufacturer (TSOA holder) to complete in order to authorize installations of specific AAD's into their products. This series of 36 simulated best practice, mid-range and worse case scenarios of rigging and malfunction possibilities is only a basic vehicle to accomplish primary confidence levels of interface between the AAD and the standard function of the TSO'ed components of the harness container system and reserve parachute.

All tests should be done with full cooperation between the Harness/Container manufacturer and the AAD manufacturer.

Completion of the TS-112 matrix by the Harness/Container manufacturer in no way approves function of the AAD and is not intended to be used by the AAD manufacture to qualify/validate any AAD.

Below is an outline of the test preparations and PASS/FAIL criteria.

Note: This test excludes "Pin Pull Type" AAD's.

| | |
|---|---|
| AAD Activation Test: | 3 consecutive tests to pass with the same cutter configuration. |
| Preparations: | All loops for testing must not be silicone treated.<br>All grommets must be free of any lubricant as oil or silicone, wipe off with isopropanol or equivalent.<br>Harness/Container strapped to dummy, horizontal position on floor. |

**Note:** Systems capable of "Drogue-Fall" must complete an additional 18 tests in Simulated Drogue-Fall.

**PASS/FAIL CRITERIA**

| | |
|---|---|
| PASS 1 | NO DELAY |
| PASS 2 | Slight delay (less than)<0.25sec (passed) |
| FAIL 1 | Hesitation (greater than) >0.25sec (failed) |
| FAIL 2 | Short launch of PC (less than) <50cm Bridle extraction (failed) |
| FAIL 3 | Container lock up |

**ALL 36 TESTS MUST PASS**

# TS-112 HARNESS/CONTAINER MANUFACTURER TEST MATRIX

**REQUIRED TEST**

| H/C MANUFACTURER **SMALLEST** MODEL SIZE | Model Size | Serial # | Res Par Size/Typ | Res Par Size/Typ | AAD PC LAUNCH EMPTY MAIN CONTAINER | | | | | | AAD PC LAUNCH FULL MAIN CONTAINER | | | | | | Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Recommended | | +.75" /19mm | | +1"/25.4mm | | Recommended | | +.75" /19mm | | +1"/25.4mm | | |
| | | | | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | |
| | | | | | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | | |
| | | | | | 3 | | 3 | | 3 | | 3 | | 3 | | 3 | | |

**REQUIRED TEST**

| H/C MANUFACTURER **LARGEST** MODEL SIZE | Model Size | Serial # | Res Par Size/Typ | Res Par Size/Typ | AAD PC LAUNCH EMPTY MAIN CONTAINER | | | | | | AAD PC LAUNCH FULL MAIN CONTAINER | | | | | | Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Recommended | | +.75" /19mm | | +1"/25.4mm | | Recommended | | +.75" /19mm | | +1"/25.4mm | | |
| | | | | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | |
| | | | | | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | | |
| | | | | | 3 | | 3 | | 3 | | 3 | | 3 | | 3 | | |

**REQUIRED TEST**

| H/C MANUFACTURER **w/DROGUE** SIMULATED DROGUE FALL | Model Size | Serial # | Res Par Size/Typ | Res Par Size/Typ | AAD PC LAUNCH EMPTY MAIN CONTAINER | | | | | | AAD PC LAUNCH FULL MAIN CONTAINER | | | | | | Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Recommended | | +.75" /19mm | | +1"/25.4mm | | Recommended | | +.75" /19mm | | +1"/25.4mm | | |
| | | | | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | |
| | | | | | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | | |
| | | | | | 3 | | 3 | | 3 | | 3 | | 3 | | 3 | | |

**OPTIONAL TEST**

| H/C MANUFACTURER **LG MID RANGE** MODEL SIZE | Model Size | Serial # | Res Par Size/Typ | Res Par Size/Typ | AAD PC LAUNCH EMPTY MAIN CONTAINER | | | | | | AAD PC LAUNCH FULL MAIN CONTAINER | | | | | | Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Recommended | | +.75" /19mm | | +1"/25.4mm | | Recommended | | +.75" /19mm | | +1"/25.4mm | | |
| | | | | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | |
| | | | | | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | | |
| | | | | | 3 | | 3 | | 3 | | 3 | | 3 | | 3 | | |

**OPTIONAL TEST**

| H/C MANUFACTURER **SM MID RANGE** MODEL SIZE | Model Size | Serial # | Res Par Size/Typ | Res Par Size/Typ | AAD PC LAUNCH EMPTY MAIN CONTAINER | | | | | | AAD PC LAUNCH FULL MAIN CONTAINER | | | | | | Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Recommended | | +.75" /19mm | | +1"/25.4mm | | Recommended | | +.75" /19mm | | +1"/25.4mm | | |
| | | | | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | |
| | | | | | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | | |
| | | | | | 3 | | 3 | | 3 | | 3 | | 3 | | 3 | | |