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# Report of Hitch Testing
Performed on a **Ball Mount Design**
in Accordance with SAE J684 Table 3
Class 4 (10,000 lbs. GVWR)
Model/Part No.: **PB4D**

Prepared for:
HitchTek LLC
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## Introduction:

This report presents the results of testing performed on one ball mount design in accordance with the latest version of SAE J684 (Reaf. MAY2014), Table 3, and VESC V-5. This project was authorized by Joseph Herlihy of the HitchTek LLC under P.O. No. 30-800 (TSI #834). The product was received on April 4, 2017 with the work performed on April 11 through 12, 2017.

## Summary of Results:

| **Specimen** / Part Number | **SAE J684 Table 3** as a Hitch Component, Rating Tested, GVWR | **Comments** |
|---|---|---|
| **1** / PB4D | Class 4 (10,000 GVWR) | **Complies** (Total change in ball axis 0.6°) |

**Note:** For projected ratings in excess of the 10,000-pound limit of the SAE J684 standard, extrapolated values are used for the test loads.

As Received

## Test Procedure:

Per SAE J684, Table 3. The test specimens are placed in an essentially non-yielding receiver simulation according to the manufacturers recommended installation instructions. All forces are then applied through an essentially non-yielding, mating fixture with an onset rate of not more than 150 lbs./sec. A preload of 400 pounds is used for initial and final deformation measurements.

## Instrumentation:

The verification of load cell accuracy used for this project is by an Instron Model 3385H, serial #3217 with an NIST traceable calibration due date of December 5, 2017.

## Sample as Submitted:

Type of Device: Hitch Component, ball mount for nominal 2" receivers.

**Specimen Detail:** 1 / **PB4D**

Insert (shank): Nominal 2.0"sq. O.D., 0.17" wall, 8.0" median length, with full butt-weld at 75º (± 1º) to ball support platform. The hole to accommodate a 0.63" lock-pin is centered 2.5" from the inserted end. **Permanent Marking:** (hand written) PB4D

Ball Platform: Nominal 0.75" x 2.5" x 10.8" long with a nominal 75º bend producing a 3.6" horizontal platform for ball. The hole accommodates a 1" shank ball. **Permanent Marking:** None Apparent

Offset/Extension: 4.0" drop and 27" rise with a 7.3" extension from anticipated location of the receiver lip to the ball centerline (9.8" from hole to hole).

**TEST RESULTS:**

| Specimen Number | SAE J684, Table 3, Required Proof Loads for a 10k GVWR, lbs. | | | | | Overloaded in **Step a.** to a higher projected GVWR/fail |
|---|---|---|---|---|---|---|
| | a. Downward Compressive **5,180 & 5,180** | b. Tensile Downward **3,830 & 1,500** | c. Compressive Downward **3,830 & 1,500** | d. and e. Trans. **2,500** | Complies (J684 6.3.2), **Yes / No** (º change) | |
| **1** (position) | 0.6° (drop) | 0.5° (rise) | < 0.6° (drop) | No visible change | **Yes** (**1.2°**) | Loaded to a 15.5k rating with a residual change of 7.5°, could satisfy a higher projected rating |

The final position of the ball axis **did not depart** more than 5° from the original, nominally vertical, position following the application of *the required* test loads. (5º permitted)


Following Overload – 1.6° Bend in Tube and 5.9° in Ball Platform

**Sample Disposition:**

Test specimens from this project will be returned per client request. mydocsprojects17035jjh,cca