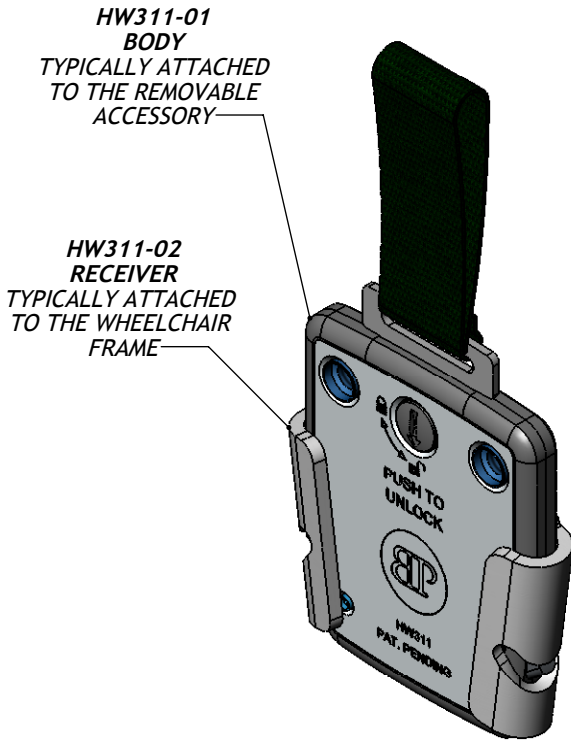




**Bodypoint**<sup>®</sup>

technical bulletin

**ARTICLE NO. HW311  
QUICK RELEASE ASSEMBLY  
SAFE LOAD LIMITS**



THE HW311 QUICK RELEASE WAS ORIGINALLY DEVELOPED TO EASE THE INSTALLATION AND REMOVAL OF THE HIP GRIP IN A WHEEL CHAIR.

THE QUICK RELEASE MAY BE APPLIED TO ANY ACCESSORY WHICH MIGHT REQUIRE FREQUENT REMOVAL FOR MAINTENANCE OR CONVENIENCE.

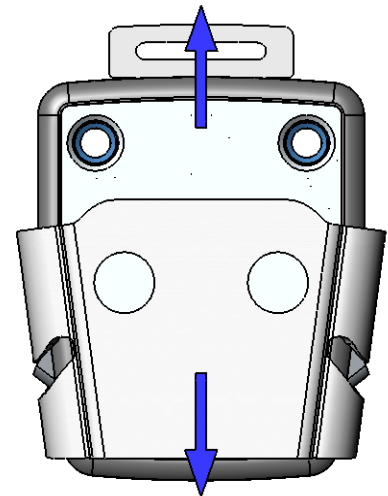
THIS DOCUMENT IS INTENDED TO PROVIDE THE USER WITH RECOMMENDED SAFE LOAD LIMITS FOR THESE OPTIONAL APPLICATIONS

**TENSILE LOAD LIMITS:**

THE HW311 WAS TESTED IN TENSION, THE LOAD APPLIED TO REMOVE THE HW311-01 QUICK RELEASE BODY FROM THE HW311-02 RECEIVER.

THE TYPICAL TENSILE STRENGTH IS 500 LBS (2225 N). THE PRODUCT FAILS BY SHEARING THE LATCH PIVOT PINS, THE QUICK RELEASE BECOMES DISENGAGED FROM THE RECEIVER

IT IS RECOMMENDED THAT THE LOAD IN TENSION BE LIMITED TO MAXIMUM OF 200 LBS (890N).



**TENSILE LOADING**

Note:  
Load limits stated in this document apply only to Bodypoint's current production version, which is built to suit an existing wheelchair application. If made using a modified receiver (fully closed), using higher strength materials or in a larger scale, the basic design is capable of supporting any desired load.

description			
<b>HW311 QUICK RELEASE LOADING DOC</b>			
drawing no.	date originated	drawn by	rev.
<b>D07-0831-21</b>	8/31/2007	J. TILDEN	<b>A</b>



**Bodypoint**<sup>®</sup>

technical bulletin

**COMPRESSION LOAD LIMITS:**

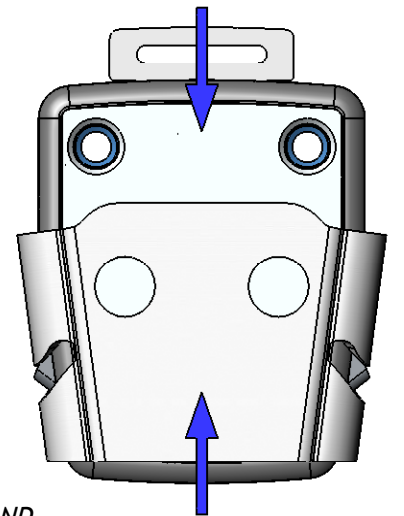
THE HW311 WAS LOADED IN COMPRESSION, FORCING THE HW311-01 QUICK RELEASE BODY INTO THE HW311-02 RECEIVER.

THE ULTIMATE COMPRESSIVE STRENGTH IS 1000 LBS (4450N).  
THE PRODUCT DOES NOT FAIL BY SEPARATING, BUT THE QUICK RELEASE BODY BECOMES JAMMED IN THE RECEIVER AND IS DIFFICULT TO REMOVE.  
ULTIMATELY THE BRACKET WHICH APPLIES THE LOAD TO THE QUICK RELEASE BODY WILL TOUCH THE RECEIVER AND LIMIT FURTHER TRAVEL.  
DESIGNING THIS BRACKET APPROPRIATELY WILL LIMIT THE TRAVEL THAT WEDGES THE BODY INTO THE RECEIVER AND ALLOW EASY REMOVAL FROM THE RECEIVER UP TO THE LOAD WHICH CAUSED THE FASTENERS TO FAIL. (~2000 LBS, ~ 8900N)

**RESULTS OF APPLYING COMPRESSIVE LOADS TO THE QUICK RELEASE ASSEMBLY:**

50 LBS IN COMPRESSION, BODY JAMS IN RECEIVER, CAN EASILY BE SEPARATED BY HAND  
100 LBS IN COMPRESSION, BODY JAMS IN RECEIVER, VERY DIFFICULT TO SEPARATE BY HAND  
150 LBS IN COMPRESSION, BODY JAMS IN RECEIVER, REQUIRES 30 LBS TENSION TO SEPARATE  
200 LBS IN COMPRESSION, BODY JAMS IN RECEIVER, REQUIRES HAMMER BLOW TO SEPARATE  
1400 LBS IN COMPRESSION, RECEIVER STRETCHES AND BODY MAY BE EASILY REMOVED, CONNECTION IS LOOSE

OVERLOADING THE QUICK RELEASE IN THIS MANNER (COMPRESSION) DOES NOT RESULT IN A DANGEROUS CONDITION.



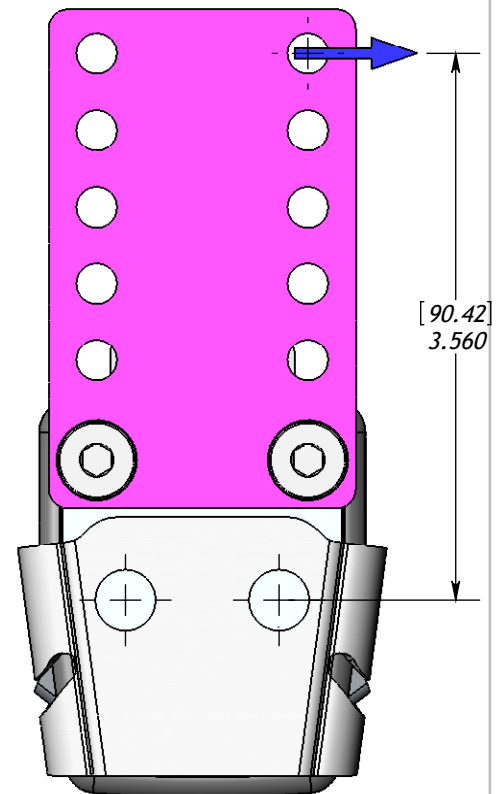
**COMPRESSION LOADING**

**SIDE LOADING LIMITS:**

THE HW311-02 RECEIVER WAS BOLTED TO A STRUCTURE, AND A LOAD WAS APPLIED THRU A LEVER BOLTED TO THE HW311-01 BODY

THE HW311 WAS LOADED BY APPLYING A MOMENT TO THE ASSEMBLY, A LOAD TRANSVERSE TO THE QUICK RELEASE AT A DISTANCE FROM THE RECEIVER MOUNTING HOLES.  
IT IS SAFE TO APPLY A MOMENT OF 1460 INCH LBS (170 NM) TO THE QUICK RELEASE ASSEMBLY.  
THIS IS EQUIVALENT TO APPLYING A LOAD OF 410 LBS AT A DISTANCE OF 3.56 INCHES FROM THE CENTER OF THE RECEIVER MOUNTING HOLES.

THIS LOADING RESULTS IN THE RECEIVER STRETCHING AND THE BODY BECOMING LOOSE IN THE RECEIVER. THERE IS NO CATASTROPHIC FAILURE UNTIL THE BOLTS FAIL IN SHEAR (~2000 LBS)



**SIDE LOADING**

**Note:**  
Load limits stated in this document apply only to Bodypoint's current production version, which is built to suit an existing wheelchair application. If made using a modified receiver (fully closed), using higher strength materials or in a larger scale, the basic design is capable of supporting any desired load.

description			
<b>HW311 QUICK RELEASE LOADING DOC</b>			
drawing no.	date originated	drawn by	rev.
<b>D07-0831-21</b>	8/31/2007	J. TILDEN	<b>A</b>