

# Hand Grip Strength Demonstration Inside Full Pressure Suit

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Using the FS full pressure suit we briefly looked at hand grip strength of an individual male. These readings were taken outside of the suit with a naked hand, then taken inside the suit with no pressure, then suit with pressure. Because the generic brand grip strength tester was not large enough to fully fit all fingers we tested nude range with four fingers and three fingers as the remaining tests could only be accomplished with three.

The individuals right hand was their dominant hand and was the only one tested. The initial results are shown below on the following page of the basic test. It is worth noting that it seems that suited and pressurized lowers hand grip strength but this must be further studied in a more controlled experiment.

We have notated that in future opportunities we would like to test both the dominant hand and weak hand, we will require a larger more scientifically reliable grip gauge to fit all fingers. Though time and rest between hand squeezes was not recorded or controlled it is curious that the pressurized system lowered the hand strength by approximately 10-15 pounds. Further research could help determine ideal suit pressure for astronaut hand/tool interfacing and the preservation of grip fatigue.

**Results (Lbs)**

<b>No Suit (four fingers)</b>	<b>Suit Pressure (PSI)</b>
120	0
112.6	0
110	0
<b>No Suit (three fingers)</b>	
88.8	0
96	0
90.8	0
<b>Suit No pressure (three fingers)</b>	
81.2	0
82.6	0
81.2	0
<b>Suited (three fingers)</b>	
69.4	3.15
65	3.63
67.4	3.72