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PERMIT # P9258

November 20, 2019
Radical Robotics Corp.
23-54030 RR275
Spruce Grove, AB
T7X 3V4
Attn: Mark Nekurak

Re: Design Review of 19132 Split Flanges

Radical Robotics Corp Drawings: 19132-Adapter Split Flange Revision 0,
14203-00B-Manway Cannon Rev. 0

This document certifies that a design review of the 19132 Adapter Split flanges, as shown in Radical Robotics Corp. drawings 19132-Adapter Split Flange Revision 0 using the Water Cannon shown in drawing 14203-00B-Manway Cannon Rev. 0, has been completed and the table below shows the maximum allowable torque to the flange as a result of the cleaning nozzle and the resulting maximum nozzle pressure.

Maximum Allowable Applied Torque (lb ft)

Size of 19132 Flange	Maximum Allowable Torque (lb ft)*	Maximum Nozzle Pressure (psi)
18in	4150	2900
24in	3325	2200
36in	2300	1300

*TORQUE BASED ON HOT BOLTING EVERY 2ND HOLE ON FLANGE

Any modifications, changes, material substitutions, or deviations from the drawings for the 19132-Adapter Split Flange Revision 0 will require a new design review.

Stephen Hurst, MSc., P.Eng.

