

## ELECTRO-HYDRAULIC SPREADER

1. The tool is a designed hydraulically activated piston with two equal, opposite light metal alloy spreader arms that are symmetrically opened by mechanical joints, thereby spreading objects. Closing the spreader arms is also carried out hydraulically and mechanically by reverse order of the piston.
2. Electro-hydraulic devices must not require connection to an external hydraulic source. Generation of the required hydraulic pressure takes place within the body of the device by either a quick exchange lithium/ion battery or an external power supply.
3. The electro-hydraulic tool is equipped with light-emitting diodes attached to facilitate work under poor lighting conditions. For simplicity, the lights must be powered by the same Lithium-Ion battery that powers the electro-hydraulic tool and not a secondary battery.
4. The cylinder of the tool shall be a one-piece design made of anti-corrosive T6-7075 light aluminium alloy for its lightweight, strength and long life.
5. The spreader shall produce a maximum spreading force of up to 134,900 lbf. (600 kN).
6. The tool shall produce a maximum spreading distance of 32 in (813 mm).
7. The spreader shall produce a minimum HSF test result of 19,110 lbf (85 kN), and a minimum LSF test result of 13,260 lbf (59 kN) as set forth in NFPA 1936-2020
8. To maximize the capability of the spreader the unit shall be compatible with an optional chain and shackle package for pulling operations, use only HURST chain set KSV 11. This should not require the removal of the tips for attachment. The spreader shall produce a HPF test result of 11,016 lbf (49 kN), and a minimum LPF test result of 6,744lbf (30 kN) as set forth in NFPA 1936-2020.
9. The tool shall produce a pulling distance of 25.8 in (655 mm).
10. The tips are to be removable, multifunctional tips that can be used for spreading, squeezing and pulling without the need to be changed.
11. The removable tips shall have 15 contact points machined to a sharp-edged “shark tooth” aggressive design for maximum performance and gripping capability.
12. The tips shall be easily removed by depressing a spring loaded “button” style detent pins to allow for the use of compatible optional peeling tips used for tearing linear holes in sheet metal.
13. The arms of the tool should be made of aluminium alloy and attach via removable links for ease of repair, efficient power transmission and smooth operation. The arms shall include a metal protective and gripping squeezing plate on both the inside and the outside of each arm.
14. The control mechanism shall feature a star-grip control actuator for ease of operation by allowing 360 ° operations in any position. The tool must provide a non-interflow shear seal “dead man” actuator, whereby the unit stops functioning when thumb pressure is released.
15. Control valve actuation shall be consistent across all models within the product line for consistency in training and field operation such that actuation to the right always opens or extends the tool and actuation to the left always closes or retracts the tool.
16. The opening and closing positions are clearly marked.
17. The tool shall have two handles. One located at the center of the tool and the other located below the control mechanism. The center crossbar handle allows easy ergonomic manipulation from the center or either side without the need of rotating the handle in to position
18. The tool will be equipped with a dual pilot check valve. This is to prevent accidental movement of the arms in the event of power loss.
19. The tool shall be protected by a pressure relief valve that prevents it from being over pressurized.
20. The tool must be compatible with three battery options; either a 5Amp/25.2 V or a 9Amp/25.2V battery capable of freshwater submersion up to 11ft. Tool must also be compatible with a 9Amp/25.2V battery capable of saltwater submersion up to 11ft.
21. The operating pressure to the tool will be 10,000 psi (70 MPa).
22. The current consumption should be 7A DC in idle mode and 43A DC at maximum load.
23. The tool shall be able to tolerate an ambient temperature range of -4°F (-20°C) up to +131°F (+55°C).
24. The tool must be compatible with two battery options; either a 5Amp/25.2 V or 9Amp/25.2V battery capable of water submersion up to 11ft.

25. The tool must be NFPA 1936; 2020 Edition compliant and shall be labelled as such bearing the mark of the 3<sup>rd</sup> Party testing agency.
26. The tool will not weigh more than 51.6 lbs (23.4 kg) excluding the power supply.
27. The tool shall have a noise pressure level at 69dB(A) at max load.
28. The tool shall be able to operate submerged in fresh water up to 11ft.
29. The tool shall have an IP rating of IP58, and utilize a battery with an IP rating of IP68
30. Tool dashboard shall illuminate to notify the user of a higher than normal temperature in the main circuit board and shall discontinue the turbo feature while detected.
31. Tool dashboard shall illuminate an icon on the tools dashboard to indicate that the tool has a saltwater capable battery attached.
32. The tool dashboard shall display an indicator that illuminates when the turbo feature is active.
33. The tool dashboard shall display a pressure indicator that will continually change showing the level of pressure being produced by the tool throughout its operation.
34. The tool dashboard shall display an icon that shows the current battery state of charge for real-time awareness. The indicator lights shall consist of green, yellow, and red indication levels relative to the battery level
35. Open and Close icons shall illuminate on the tool dashboard when the trigger control valve is actuated in their respective direction.