

HB-2 'HELL BENDER PLUS' KIT

1. RESCUE TOOL SYSTEM

- 1.1 Rescue tool system shall be environmentally sound, such that there are no hydraulic or gasoline fluids.
- 1.2 Rescue tool system shall be lightweight and portable.
- 1.3 Rescue tool system shall be suitable for outdoor and indoor use.
- 1.4 Rescue tool system shall be powered by 12 Volts DC.
- 1.5 Rescue tool system components shall be color-coded for enhanced safety and ease of operation (i.e cables, connectors, etc.).

2. RESCUE TOOL

- 2.1 Rescue tool shall be certified by a recognized third-party testing organization as compliant to NFPA-1936, Standard on Powered Rescue Tool Systems, 2010 Edition.
- 2.2 Rescue tool shall provide for interchangeable application attachments (i.e. spreaders and cutters, etc.), and enable quick-change of the attachments by using ball-detent pins.
- 2.3 Rescue tool shall provide both spreading and cutting capability.
 - 2.3.1 Spreader attachment forces, measured 1 inch (2.54 cm) from the tips, shall be at least 8,000 lbs. (35.6 kN) minimum when the arms are in the closed position and 11,000 lbs. (48.9 kN) minimum when the arms are in the full open position.
 - 2.3.2 Spreader attachment arm opening distance shall be no less than 14 inches (35.6 cm).
 - 2.3.3 Curved-blade cutting forces shall be at least 30,000 lbs. (133.4 kN) at blade center.
 - 2.3.4 Curved-blade cutter opening shall be at least 5 inches (12.7 cm).
 - 2.3.5 Straight-blade cutter forces shall be at least 45,000 lbs. (200kN) at the notch and 21,000 lbs. (93.4kN) at blade center.
 - 2.3.6 Straight-blade spreader forces shall be at least 10,000 lbs. (44.5kN) measured 1 inch (2.54 cm) from the tips when the blades are in the closed position and 18,000 lbs. (80.1 kN) when the blades are in the full open position.
 - 2.3.7 Straight-blade cutter openings shall be 10 in. (25.4 cm) at the tips and 1 in. (2.54 cm) at the notch.
- 2.4 Rescue tool weight shall not exceed the following when using the following attachments:
 - 2.4.1 42 lbs. (19.1 kg) with the spreader attachments
 - 2.4.2 44 lbs. (20.0 kg) with the curved-blade cutter attachment
 - 2.4.3 48 lbs. (21.8 kg) with the straight-blade cutter attachment

- 2.5 Rescue tool shall have a swivel power head that allows the application attachments (i.e. spreaders and cutter) to swing 70° to the left (CCW) in relation to the tool body for “around-the-corner” purchase points.
- 2.6 Rescue tool shall have a control switch that is ambidextrous and provides identical activation (i.e. CCW - opens, CW - closes) regardless of the tool’s rotational position. The switch shall be a “deadman-control” type such that when released, the switch returns to the “off” position.
- 2.7 Rescue tool shall have an internal brake so that when power is turned off to the tool, the brake locks and keeps the system from back-driving if an external force is applied to the application attachments (i.e. spreaders and cutter).

3. CONTROLLER UNIT

- 3.1 A controller unit shall be provided which controls the 12 Volts DC electrical power to the rescue tool for opening and closing of the application attachments (i.e. spreaders and cutter).
- 3.2 Controller unit shall automatically turn off power to the rescue tool when maximum tool output force is achieved. This will prevent damage to the motor and/or mechanical system as well as save battery energy.
- 3.3 Controller unit shall be capable of accepting 12 Volts DC input power from several sources, such as a portable battery pack, automobile battery, 12 Volts DC converted power supply, 12 Volts DC generator, etc.
- 3.4 Controller unit shall be lightweight and portable.

4. POWER CABLE

- 4.1 Electrical power cable shall be provided which connects the rescue tool to the controller unit.
- 4.2 Power cable ends shall be color-coded for ease of setup.
- 4.3 Power cable wires shall be assembled into one bundle and protected against abrasion.
- 4.4 Power cable shall be a minimum of 13 ft. (4 meters) in length.

5. BATTERY PACK

- 5.1 Two (2) Portable battery packs shall be provided for portable 12 Volts DC power.
- 5.2 Battery encased in the battery pack shall not spill acid regardless of its resting side.
- 5.3 Battery pack shall have a visual means of checking the state of charge of the encased battery (charge indicator).
- 5.4 Battery pack shall have a connector port which uniquely mates with the plug on the battery charger required for recharging.

- 5.5 Battery pack shall have two power output connectors, one for supplying 12 Volts DC power to the controller unit for rescue tool operation, and the other for accessory hook-up such as a flood light.
- 5.6 Battery pack shall be provided with harness straps for attaching the controller unit for complete power pack portability.

6. JUMPER CABLES

- 6.1 A heavy-clamp and quick-disconnect jumper cable (16 ft. (4.9 meters)) shall be provided for connecting the controller unit to an automobile battery for secondary (back-up) 12 Volts DC power.

7. BATTERY CHARGER

- 7.1 A charger shall be provided for recharging the 12 Volts DC battery pack.
- 7.2 Charger electrical input shall be 90-230 VAC, 50-60 HZ . Charger output shall be 12 VDC.
- 7.3 Charger shall have an output connector that uniquely fits the mating port in the battery pack.
- 7.4 Charger shall provide visible indication when the battery has reached full charge (i.e. LED light, etc.).
- 7.5 Charger shall not allow overcharging of the battery even if connected for extended periods of time.

8. 40" RAM SPECIFICATIONS

- 8.1 Ram shall be environmentally sound, such that there are no hydraulic or gasoline fluids.
- 8.2 Ram shall be lightweight and portable.
- 8.3 Ram shall be suitable for outdoor and indoor use.
- 8.4 Ram shall be capable of accepting and engaging the tips of a spreader-type rescue tool and transmitting the spreading force generated by the spreader tool to the ram members for exerting spreading forces, up to a maximum of 18,000 lbs.
- 8.5 Ram shall be capable of accepting spreader-type rescue tool tips up to 2 in. (5.08 cm) in width.
- 8.6 Ram shall use the ZipNut® Double Zip device to safely and automatically hold the working load.
- 8.7 Ram shall be designed to prevent accidental release while the ram is under load.
- 8.8 Ram shall provide safe and quick release of the locking mechanism while the load is supported by a spreader-type rescue tool or if the load has been removed.

- 8.9 Ram shall be capable of manual quick extension and automatic locking, for applications such as stabilizing and shoring.
- 8.10 Ram shall be capable of being extended or retracted manually by turning the threaded primary or secondary extenders.
- 8.11 Fully extended length shall be at least 41 in. (104.1 cm)
- 8.12 Fully retracted length shall be less than 23 in. (58.4 cm)
- 8.13 Power stroke length shall be at least 12 in. (30.5 cm)
- 8.14 Ram secondary extender adjustment shall be at least 6 in. (15.2 cm)
- 8.15 Weight, including handle, shall not exceed 36 lbs. (16.3 kg)
- 8.16 Gripping end attachments shall be easily removable for quick change or replacement.
- 8.17 Ram base shall be capable of accepting a coupler to connect two rams back to back, or to add extensions or swivel bases.

9. EXTENSION CABLE

- 9.1 Extension cable (16 ft. (4.9 meters)) with quick-disconnect plugs on each end for supplying 12 Volts DC current to the rescue tool or for running accessories.

10. FLOOD LIGHT

- 10.1 A 12 Volts DC flood light that can be plugged directly onto the rescue system portable power pack or to extension or jumper cables for hanging or reaching into tight spots.