

## **HC-1 HERCULES 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 certified by a recognized third-party testing organization as compliant to NFPA-1936, Standard on Powered Rescue Tool Systems, 2005 Edition.
- 8.2 Ram shall be environmentally sound, such that there are no hydraulic or gasoline fluids.
- 8.3 Ram shall be lightweight and portable.
- 8.4 Ram shall be suitable for outdoor and indoor use.
- 8.5 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.
- 8.6 Ram shall be capable of accepting spreader-type rescue tool tips up to 2 in. (5.08 cm) in width.
- 8.7 Ram shall use the ZipNut® Double Zip device to safely and automatically hold the working load.
- 8.8 Ram shall be designed to prevent accidental release while the ram is under load.

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

**9. 25" RAM SPECIFICATIONS**

- 9.1 Ram shall be certified by a recognized third-party testing organization as compliant to NFPA-1936, Standard on Powered Rescue Tool Systems, 2005 Edition.
- 9.2 Ram shall be environmentally sound, such that there are no hydraulic or gasoline fluids.
- 9.3 Ram shall be lightweight and portable.
- 9.4 Ram shall be suitable for outdoor and indoor use.
- 9.5 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.
- 9.6 Ram shall be capable of accepting spreader-type rescue tool tips up to 2 in. (5.08 cm) in width.
- 9.7 Ram shall use the ZipNut® Double Zip device to safely and automatically hold the working load.
- 9.8 Ram shall be designed to prevent accidental release while the ram is under load.
- 9.9 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.
- 9.10 Ram shall be capable of manual quick extension and automatic locking, for applications such as stabilizing and shoring.

- 9.11 Ram shall be capable of being extended or retracted manually by turning the threaded primary or secondary extenders.
- 9.12 Fully extended length shall be at least 27 in. (68.6 cm)
- 9.13 Fully retracted length shall be less than 16 in. (40.6 cm)
- 9.14 Power stroke length shall be at least 5 in. (12.7 cm)
- 9.15 Ram secondary extender adjustment shall be at least 6 in. (15.2 cm)
- 9.16 Weight, including handle, shall not exceed 27 lbs. (9.2 kg)
- 9.17 Gripping end attachments shall be easily removable for quick change or replacement.
- 9.18 Ram base shall be capable of accepting a coupler to connect two rams back to back, or to add extensions or swivel bases.

**10. EXTENSION RAM 24”**

- 10.1 Extension 24” shall be environmentally sound, such that there are no hydraulic or gasoline fluids.
- 10.2 Extension 24” shall be lightweight and portable.
- 10.3 Extension 24” shall be suitable for outdoor and indoor use.
- 10.4 Extension 24” must be capable of accepting a back –to-back coupler for attaching to ram mechanism or another Extension or Swivel Brackets.
- 10.5 Extension 24” Gripping end attachments shall be easily removable for quick change or replacement
- 10.6 Extension 24” Weight, including handle, shall not exceed 15 lbs. (6.8 kg)
- 10.7 Extension 24” Length should not exceed 24 in. (60.90 cm)

**11. EXTENSION RAM 48”**

- 11.1 Extension 48” shall be environmentally sound, such that there are no hydraulic or gasoline fluids.
- 11.2 Extension 48” shall be lightweight and portable.
- 11.3 Extension 48” shall be suitable for outdoor and indoor use.
- 11.4 Extension 48” must be capable of accepting a back –to-back coupler for attaching to ram mechanism or another Extension or Swivel Brackets.
- 11.5 Extension 48” Gripping end attachments shall be easily removable for quick change or replacement
- 11.6 Extension 48” Weight, including handle, shall not exceed 30 lbs. (13.6 kg)
- 11.7 Extension 48” Length should not exceed 48in. (121.92 cm)

**12. SWIVEL BASE KIT**

- 12.1 Bottom Base must be able to be attached to threaded gripping end attachment of ram extension and easily removed.
- 12.2 Top Head must be secured to top head of ram through ball and screw system to tighten on to ram.
- 12.3 Both top and bottom swivel base mechanisms should be able to swivel and rotate to effectively lay against item to be stabilized or shored.
- 12.4 Swivel kit should have at least 4 holes in plates to accept screws, nails or stakes to assist in securing item to stabilized or shored area.

**13. COUPLING for Rams**

- 13.1 Two (2) threaded double-male steel couplings shall be provided for connecting two rams back-to-back or adding ram extensions.

**14. EXTENSION CABLE**

- 14.1 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.

**15. FLOOD LIGHT**

- 15.1 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.

**16. BACKPACK**

- 16.1 Back Pack shall be designed for hands-free portability of the Rescue System Power Unit (i.e. Battery Pack and Controller Unit).
- 16.2 The Back Pack itself shall weight less than 5 Lbs. (2.3 kg).
- 16.3 Belts and straps shall provide adjustment to accommodate a wide range in personnel physical size.
- 16.4 Back Pack construction materials shall be durable and suited for emergency services operations.

**17. COMBO SAW KIT**

- 17.1 Saw kit shall be provided that connects to and is powered by the rescue system's 12 Volts DC Battery Pack (Item 5 above) for extended run time.
- 17.2 The saw kit shall include one 18 V cordless reciprocating saw that has been approved by the manufacturer to operate using 12 volts DC. Kit shall include 5 metal cutting blades and 1 wood cutting blade.
- 17.3 The saw kit shall include one 18 V cordless 6.5" circular saw that has been approved by the manufacturer to operate using 12 volts DC. Kit shall include one metal cutting blade.

17.4 The saw kit shall include a 16 ft. power cable and the power adapters for connecting the saws to the battery pack.

17.5 The saw kit shall include a heavy-duty carrying bag.

**18. CARRYING BAG**

18.1 A heavy-duty contractor type carrying bag shall be provided for holding various rescue system components.

18.2 Carrying bag dimensions shall be approximately L20 in. x W11" x H11" and include loop handles and a shoulder strap.

**19. AUTOMATIC VEHICLE STABILIZATION DEVICE (QTY-4)**

19.1 Automatic vehicle stabilizing device shall be provided for rapid vehicle stabilization and other cribbing operations.

19.2 Stabilizing device shall be spring-loaded and automatically rise to engage a vehicle's body or frame and lock into place.

19.3 Stabilizing device shall automatically adjust upward and lock during operations.

19.4 Stabilizing device shall allow positioning completely under vehicles.

19.5 Stabilizing device shall be capable of reaching a height of 13 inches.

19.6 Stabilizing device shall weigh less than 15 lbs.

19.7 Stabilizing device shall include a quick and easy ¼-turn lock.

19.8 Stabilizing device shall be compact when stowed.

19.9 Stabilizing device shall be made of metals and easily decontaminated.

19.10 Stabilizing device shall be rated for 2000 lbs maximum load.