

## **INVITATION TO BID**

The City of Rochester, New Hampshire is accepting sealed bids for **“Built-in Hydraulic Rescue Tool System”**. Bids must be submitted in a sealed envelope plainly marked:

**“Sealed Bid, Built In Hydraulic Rescue Tool System”**

**“Bid # 09-17”**

City of Rochester  
31 Wakefield Street  
Rochester, NH 03867  
Attn: Purchasing Agent

All bids must be received no later than November 13, 2008 at 2:30 p.m. No late bids, faxed, e-mailed or telephone bids will be accepted. Bid proposals and specifications may be obtained by visiting [www.rochesternh.net](http://www.rochesternh.net), or emailing [purchasing@rochesternh.net](mailto:purchasing@rochesternh.net), or by contacting the Purchasing Agent at City Hall, 31 Wakefield Street, Rochester, NH 03867, (603) 335-7602. All bid questions must be submitted in writing (e-mail preferred) to the Purchasing Agent. All bid proposals must be made on the bid proposal forms supplied, and the bid proposal forms must be fully completed when submitted.

## **BID SPECIFICATIONS**

### Scope and General Description

This specification covers a new commercially produced hydraulic rescue tool system. The system shall be designed for 10,500 PSI normal operating pressure.

The primary hydraulic pump system shall include, but not be limited to, a transmission mounted power takeoff (PTO), hydraulic pump, hydraulic control valve assembly, reservoir, filtration system, hydraulic oil cooler, and electrical control system. This system shall provide all necessary hydraulic requirements and controls to properly operate the secondary stage high-pressure intensifiers. All system component flow rates and pressure requirements shall be balanced and matched so that volumetric and overall efficiency is maximized at times of simultaneous component operation.

### Compliance to NFPA Standards

All system components shall meet or exceed pressure drop, flow velocity, maximum operating pressure and torque safety margin factors as recommended by NFPA, JIC, SAE, and ISO standards organizations. The furnished hydraulic rescue portable and fixed rescue equipment shall be in full compliance to applicable NFPA standards.

### Performance

The hydraulic system shall be designed to provide near-constant hydraulic flow up to the maximum operating pressure of 10,500 PSI for each hydraulically independent tool circuit. The operating conditions, such as tool force, tool direction, or hose length, of any circuit shall not affect the performance of any of the other circuits. The hydraulic system shall open Fire Departments existing AMKUS Model 30CX spreader in (9) nine seconds or less when attached to the 125' reel under a no load condition. The hydraulic system shall be capable of reaching 10,500 P.S.I. in (5) five seconds or less using Fire Departments existing AMKUS Model 30CX spreader when attached to the 125' reel.

### Variable Engine Speed Compatibility

The fixed hydraulic rescue tool system shall be capable of providing constant output at variable engine speeds. The engine RPM range shall be subject to many variable factors such as other hydraulically driven equipment and fire

pump. The exact operating RPM shall be determined prior to installation by engineering and shall be subject to available horsepower, gearing and other critical design factors.

### Hydraulic Pump

The hydraulic pump shall be driveshaft-driven from an OEM provided Chelsea or Muncie hot shift clutch shift power take-off mounted on side of the Allison automatic transmission. The PTO system and installation shall be in compliance with applicable NFPA #1901 standards for similar applications. NFPA required interlocks shall be provided to prevent engagement unless the transmission is in neutral, the park brake is set and the engine is at idle.

A locking toggle PTO switch shall be provided on the cab dash to engage the system. A green indicator light shall be provided adjacent to the switch to indicate system engagement. The engagement switch and warning light shall be labeled "HRT SYSTEM".

All necessary hydraulic oil requirements for the proper operation of system components shall be provided by a single section, variable volume axial piston pump assembly. Pump shall be of the pressure compensated, load sense feedback control type with a maximum system pressure setting of 4000 PSI and load sense differential control pressure not to exceed 200 PSI at 50% flow control ramp stroke. Pump volumetric displacement shall be such as to supply the proper overall GPM and PSI requirements needed for independent or simultaneous operation of all system components and equipment at a maximum of 1800 engine RPM.

Pump design shall incorporate an internal pre-charge system of inlet housing and be capable of normal operating speeds of 2800 RPM and pressures of 4000 PSI. Pump shall be of the cast steel case housing and mounting flange construction with external adjustment provisions for maximum compensator pressure and load sense differential (to include maximum volume stop when required).

Overall system design shall provide for a minimum of three (3) PSI positive pump inlet pressure at maximum simultaneous flow and pressure requirements. Pump ramp/de-ramp generation shall be properly engineered and controlled by the valving system logic network as to minimize ramp oscillation, high-pressure surges and volumetric instability. Pump case flushing required only when needed for cooling requirements during long periods of standby operation. Single or multiple section constant displacement pumps are not acceptable.

### Hydraulic Fluid Reservoir

A 35-gallon hydraulic fluid reservoir shall be provided. The reservoir shall be constructed of a minimum of eight (8) gauge steel and a minimum of two internal flow baffles for proper oil circulation . A 3/4" IPT drain boss and plug and clean out/ strainer access cover shall be installed . All return lines shall be discharged hydraulic fluid directly into tank, through filter assembly, not less than six (6) inches below normal operating fluid level. Volumetric capacity of reservoir shall be such as to provide for proper flow velocity, cooling and deof oil. Assembly shall be flex mounted if attached to chassis frame rail.

The reservoir shall also be equipped with a combination pressurized fluid filler, breather assembly with removable five hundred micron strainer, combination fluid level sight gauge and thermometer, cooling system temperature control switch.

### Hydraulic Oil Filtration

The hydraulic system shall be equipped with fluid filter on the return line and high-pressure filter on the discharge side of the system. The hydraulic system shall be provided with a suction side strainer. The hydraulic system shall include a spin on cartridge suction line filter with a minimum of ten (10) micron filtering capacity. Filter flow capacity shall provide for minimum restriction of return flow. Filter assembly shall include an integral 15 PSI bypass valve and be equipped with a filter condition indicating device. Note: a pressure gauge shall not be acceptable. A top mounted inside tank, cartridge insert, return filter shall be provided.

The hydraulic filter and strainer shall be equipped with shut-off valves or provisions to prevent loss of hydraulic fluid from the system during changing of such devices. The installer shall provide adequate clearance and accessibility for filter maintenance, as well as hydraulic oil filling and drainage.

### Hydraulic Fluid Cooling System

An air to hydraulic fluid cooler shall be installed to cool hydraulic fluid. The cooler system shall be of sufficient BTU per hour cooling capacity to provide for a maximum system oil temperature of ambient air plus 30 degrees Fahrenheit when all component systems are in simultaneous and continuous operation. Cooling system core shall be of sufficient flow capacity so that pressure drop across cooler headers (inlet to outlet) does not exceed 30 PSI at required flow. Pressure and flow bypass valving shall be provided to prevent over pressurization of assembly.

Air flow shall be provided by an integrally mounted 12 volt electric or hydraulic motor driven fan assembly of required CFM flow capacity. Mounting of cooling systems requiring airflow supply provided by chassis engine cooling system fan is not acceptable. Fan motor shall be thermostatically controlled to provide for a minimum operating oil temperature of 90 degrees Fahrenheit and maximum as stated. The cooling system shall provide for automatic on/off control of fan with hydraulic system engagement or shutdown (operator control not required).

The cooler flow core and fan drive assembly shall be independently flex cushion mounted and located on chassis to provide for minimum air flow restriction and shall not be effected by engine heat or exhaust system heat inclusion.

#### Hydraulic System Plumbing, Hoses, and Fittings

The hydraulic system for the three (3) tool system shall be equipped with high pressure hydraulic hoses rated at 125% of working pressure of the designed system. The hoses shall be installed with sweep-type low friction loss corrosion resistant female swivel connections. The hoses shall be installed with mechanical and abrasion protection coverings and clamps.

All hydraulic hoses shall meet or exceed the following specifications: Each hose assembly (hose with hose end fittings), except for pump section hose, shall be fitted with JIC 37 degree swivel fittings located at each point of hose and component connection. All pressure line hoses shall comply with SAE 100 R9 specifications. Suction line hose shall be a minimum of 2" nominal inside diameter and comply with requirements under SAE 100 R4. All hydraulic hoses shall be fully installed and ready for operation.

The fitting kit and adaptors to be of the steel type designed for hydraulic system use. All pipe thread fittings are to be coated with liquid Teflon pipe sealer before assembly. Use of Teflon tape shall not be acceptable. Hydraulic quick check disconnect fittings of the valved type as manufactured by Parker Hannifin Corporation or approved equal shall be installed in the main pressure inlet section and outlet work ports of the valve assembly for diagnostic testing.

#### Valve Plate Assembly

The three (3) tool system shall be provided with a complete valve plate assembly. The compact assembly shall incorporate control valve assembly, intensifiers, and required equipment. The unit shall include a valve mounting plate assembly; including tubing fittings check valves to pre-assemble valve.

### Valve Mounting Plate Assembly

The three (3) tool system shall be provided with a complete valve plate mounting assembly, Valve Plate Mounting Assembly shall be designed for easy service ability of intensifiers and control valves.

### Control Valve Assembly

The system shall be provided a control valve assembly for each High Pressure Circuit. All required hydraulic control functions of the intensifier drive circuits shall be supplied within a single multisectional closed center control valve assembly. Assembly shall be of the modular integrated, screw cartridge valve/manifold circuit design having stackable control sections for each drive circuit, and shall be designed to provide for additional drive circuit installations with only minor system modification.

The valve assembly shall consist of a control section for each intensifier operation. Each section of the assembly shall be fully post pressure compensated to provide proper flow and pressure regulation to each drive circuit independent of the operating requirements of other circuits in simultaneous operation. Each section, when stacked to make a complete assembly, shall provide all pressure inlet, tank return, load sense network, drive circuit porting, and control functions required.

Each of the intensifier control sections shall provide electric solenoid operated on control, automatic pressure sequenced dual set flow controls with fully adjustable flow and pressure settings and intensifier pre-charge control valving. The regulated flow output shall be post (after directional valve) pressure compensated by means of cartridge valve assembly and shall have internal load sense logic network controls required.

### High Pressure Intensifier

The secondary oil supply system shall be driven by the primary pump and control valve central hydraulic system and shall consist of one (1) high pressure oil to oil type intensifiers for each high pressure circuit. Each intensifier shall consist of an axial piston motor drive group with a direct interconnecting axial rotational force plate ramp supplying force and drive requirements of the axial piston high pressure pump group.

The intensification pressure ratio shall be approximately 4:1 and be capable of developing a continuous intensified flow up to a maximum normal operating pressure of 12,500 PSI. The flow transmission factor shall be

approximately 0.21:1 with a normal primary system drive flow rate of 7.5 GPM. Intensified (secondary oil supply output) flow rate shall be automatic high/low flow sequence controlled by system pressure/force requirements and shall be fully adjustable to supply a wide range of tool operating cycle speeds and high/low step-down initiation pressures.

Each intensifier shall be a single unitized assembly consisting of the motor drive and high pressure pump piston rotational groups, internal fill and output valving on each pump piston, internal high pressure piston prefill network, high pressure system adjustable relief valve, reverse connection protection valving, case over pressurization protection and all required intensifier component parts. Intensifiers of the motor/pump close coupled type or of the reciprocating differential area piston type are not acceptable. This unit shall be designed to supply a smooth, uninterrupted intensified oil flow output for rapid cycle operational speeds and predictable force characteristics of the rescue tool.

#### Electrical Control System

A 12-volt relay power distribution system, shall provide the control of the three (3) tool hydraulic system electrical valves and components. All relays and control system switching circuits shall be fused and arc suppression protected.

The installer shall provide an electronic controlled variable set constant speed engine governor control system. Unit shall be set to automatically raise and hold constant the engine RPM required for proper hydraulic pump output to ensure intensifier drive output as the number of circuits and their loads change. Control module for governor shall be chassis mounted in a readily accessible location.

#### “On-Off” Control

The main control panel shall be equipped with an “on-off” switch for tool operation. The switch shall be labeled on instructions intended use and function.

#### Pendent Control

The control of three (3) intensifier drive circuits and cable reel(s) shall be provided by a remote hand held pendant control module. The control cable shall be of the high abrasion, oil, chemical, weather, and flame resistant polymeric jacket type to meet or exceed requirements of UL1277, IEEE383 and ICEA516 specifications.

This unit shall be hard wired to chassis mounted power relay system with thirty (30) feet of multi-conductor control cable.

Hydraulic Hose Reel

One reel shall be supplied and installed by the vendor. Must be an electric rewind Hannay Reel capable of holding 125' of hose.

Hydraulic Fluid

Nine (9) 5-gallon pails of mineral base hydraulic fluid shall be supplied.

**Installation of all Equipment**

System installation, mounting, miscellaneous hoses, fittings & mounting of reels provided by the vendor.



## **SPECIFICATIONS FOR HEAVY DUTY RESCUE TOOLS**

### **SCOPE**

This specification covers a new commercially produced hydraulic rescue tool system. Any system bid in response to these specifications shall be designed to allow upgrading and interchangeability with other components of the same manufacturer.

### **APPLICABLE DOCUMENTS**

Any manufacturer or vendor responding to this bid shall enclose in their proposal, at the time of bid, any documents required in these specifications. It is the responsibility of the vendor to be sure that the proposal submitted meets all the requirements of these specifications. Bids which fail to comply with these specifications shall not be considered for award.

### **MATERIALS**

The hydraulic rescue tools delivered under these specifications shall be standard commercial products, which meet or exceed the requirements of this specification. The components and optional items shall be represented in the manufacture's current sales and technical data. The supplier shall provide total standardization and interchangeability between similar tools and components, items, and accessories of the manufacturer specified in the proposal.

Materials used in the construction of the rescue tools shall be new and not less than the quality conforming to current engineering and manufacturing practices. Materials shall be free of defects and suitable for the service intended.

### **EXCEPTIONS TO THE SPECIFICATIONS**

It is not the intent of these specifications to restrict or prevent any vendor from submitting a proposal on his/her product. Due to the fact that the equipment specified is to be used under emergency and hazardous conditions, where human life may be at risk, the following must apply. Any exceptions to these specifications indicated herein must be clearly pointed out; otherwise it will be considered that items offered are in strict compliance with these specifications and the successful bidder will be held responsible for delivering a rescue tool system meeting these specifications. Any exceptions taken shall be listed and noted on an exception sheet.

### *HYDRAULIC SPREADING TOOL*

As a major component of this specified rescue tool system, this hydraulic spreader shall be designed in accordance with modern manufacturing techniques, and shall use materials of high strength and lightweight. Since this system is to be operated primarily by a single rescuer, the weight of the spreader tool is a major consideration of these specifications. Bidders responding to this bid shall take this information into consideration when bidding this component.

Since both men and women rescuers maybe required to utilize this tool at any given time, the hydraulic spreading tool shall weigh no more than forty-three (43) pounds. This shall be a "wet" weight, and shall include the complete spreader, control mechanism, hose pigtails, tips and fluid.

This component shall be as small and compact as possible. The spreading tools shall not exceed thirty-one (31) inches in length, not more than fourteen (14) inches in width. The width dimension is that taken when the tool is in the fully closed position.

To prevent corrosion, the spreader shall have an anodized finish.

### *SPREADER TOOL PERFORMANCE CRITERIA*

As this tool is to be used in situations where maximum spreading force is necessary, the following performance specifications are considered minimum. The spreading tool shall have an open distance of at least twenty-four (24) inches.

The minimum opening force at the tips shall be at least 12,000 pounds and an opening force of at least 18,000 pounds at the outer most area of the arms.

In the closing mode, the tool shall produce at least 12,000 pounds of closing force.

This component shall be as small and compact as possible. The spreading tool shall not exceed thirty-three (33) inches in length, not more than nine (9) inches in width. The width dimension is that taken when the tools is in the fully closed position.

To prevent corrosion, the spreader shall have an anodized finish.

### *SPREADER TOOL PERFORMANCE CRITERIA*

As this tool is to be used in situations where maximum spreading force is necessary, the following performance specifications are considered minimum. The combination tool shall have an open spreading distance of at least thirteen (13) inches.

The maximum spreading force shall be at least 18,000 pounds.

In the closing mode, the tool shall produce at least 16,000 pounds of pulling force.

### *HYDRAULIC CUTTING TOOL*

The hydraulic cutting tool supplied with this system shall be designed in accordance with modern manufacturing techniques, and shall use materials of high strength and lightweight. When used as a component of this system the cutting tool is to be operated primarily by a single rescuer. Therefore the size and weight of the hydraulic cutting tool is a major consideration of these specifications. Bidders responding to these specifications shall take this information into consideration when bidding this component.

The cutting tool as specified in this specification is to function as a “stand alone” component of the rescue tool system. Any bid that requires the cutter to operate as part of the spreader tool will not be accepted.

### *CUTTING TOOL DIMENSIONS AND WEIGHT*

The hydraulic cutting tool shall weigh no more than (38) pounds. This shall be a “wet” weight, and shall include the cutter, control valve, pigtail hose and fluid.

This component shall be as small and compact as possible. The cutting tool shall not exceed (30) inches in length, nor more than (9) inches in width. The width dimension shall include any handles or extensions.

### *CUTTING TOOL PERFORMANCE CRITERIA*

This tool will be used in rescue situations where operating area is minimal and where maximum cutting force is necessary. The following performance criteria is considered as minimum. The hydraulic cutting tool shall have a maximum blade opening of at least 4 inches.

### *ONE POINT SERVICE CENTER*

As this agency is concerned as to available service after the rescue system is purchased the following requirements apply. The bidder (vendor) responding to these specifications shall be fully authorized service center. The bidder shall be capable of handling all warranty and service claims. Proof that the bidder is an authorized dealer and service center shall be submitted with the bid. (Vendors failing to comply with this requirement will not be considered)

*WARRANTY AND SERVICE REQUIREMENTS*

As this agency is concerned with the bidder’s service capability and the delay of repair work, the bidder shall have an office located within 100 miles. This office shall be a commercial building and zone appropriately. A home or residence will not meet this requirement.

Since this agency will not have the funds for a back-up system, should warranty, damage, repair and/or replacement becomes necessary, the bidder shall provide emergency loaner components within twenty-four (24) hours of notification.

Remounting of existing Hose Reels and other items. Remount two (2) existing hose reels and other tools as required. New mounts to be included.

## **SPECIFICATIONS**

### **Air Lifting Bag System and Accessories**

#### *Introduction*

These purchase specifications cover the minimum requirements for a high-pressure Air Lifting Bag System. This system will consist of six (6) individually sized high-pressure Air Lifting Bags and Accessories. This equipment is to be used by emergency service personnel for rescue, extrication, forcible entry and related lifting and spreading operations.

#### *Instructions to Bidders*

Bidders shall conform as much as possible to these specifications. Exceptions or omissions must be set out in writing on a separate sheet entitled "Exceptions" which must accompany the bid. Failure to do so will result in an automatic rejection of the bid.

The buyer shall be the sole interpreter of the intent of any clause of these specifications and shall be the sole judge as to whether the equipment or any part thereof complies with the specifications.

The buyer reserves the right to reject any and all bids, to waive informalities in bidding, to negotiate small options with the successful bidder and to accept the bid, which in the opinion of the buyer, will be in its best interests.

#### *Specification Disclaimer*

It is not the intent of the Rochester Fire Department to offer specifications that are in any way proprietary or restrictive. The specifications used in this document express the intent to provide the Fire Department with state of the art equipment under the most favorable terms.

Bidders should not be discouraged by minor design differences between these specifications and Air Lifting Bags & Accessories that they wish to bid. However, we do insist upon the following minimum requirements and failure to meet these requirements will be cause for rejection.

1. All Air Lifting Bags shall be reinforced with an aramid fiber cord. Steel wire, Used as reinforcement, has been rejected because of its weight, susceptibility to rust & corrosion, lack of flexibility and the inherent fatigue factor associated with repeated flexing and bending of steel wire.

2. All Air Lifting Bags shall be constructed of Neoprene. It is important for bidders to note that these Air Lifting Bags could be used in contaminated environments. These Air Bags must be able to function properly even if they come in direct contact with fuels, solvents and other assorted hazardous chemicals. Air Bags constructed of butyl or rubber compounds, with or without neoprene covering, will not be acceptable. Please furnish chemical compatibility guide with this bid.
3. All Air Lifting Bags purchased as a result of this bid must be certified by the manufacturer to have a true "Stacking Surface". It is often necessary to "stack" two similar sized bags in order to attain greater lifting heights. A stacking surface, for the purpose of this specification, is defined as molded dimpled surface that will interlock with a similar surface stacked on top of it.
4. Equal importance is given to the total lift capacity of the specified Air Lifting Bag System and the quantity and size of the individual Air Bags. Bidders should clearly describe the items being offered for bid by stating the size, weight, and lift capacity of each lifting bags.
5. Certain Air Lifting Bags must be equipped with provisions for vertical placement, recovery, carrying, remote positioning and tethering. Each Air Lifting Bag 15 in x 15 in (35.56 cm x 35.56 cm) or larger shall have a minimum of two molded eyelets on one edge of the lifting bag.

#### *General Construction Features*

Each Air Lifting Bag shall be constructed of multiple plies of Neoprene and Neoprene coated Kevlar. There shall be a minimum of three plies covering the entire top and bottom surface of the Air Lifting Bag. Each Air Lifting Bag shall be equipped with at least a 1/8" NPT female connection to which shall be attached a quick disconnect nipple capable of being replaced should it be damaged. For the purpose of centering a load, each Air Lifting Bag shall have two yellow diagonal stripes, in the form of an "X", molded into each side of the lifting bag. Each Air Lifting Bag shall have a raised molded non-skid, interlocking surface on each side.

*Air Lifting Bags*

QUANTITY	DIMENSIONS	WEIGHT	CAPACITY	LIFT HEIGHT
1	6" X 6" X 5/8" 15.2 X 15.2 cm x 1.6 cm	2 lbs 0.9 Kg	1.2 Tons 1.1 M Ton	3.0 in. 76 mm.
1	12" x 12" x 3/4" 30.5 cm x 30.5 cm x 1.9 cm	6.5 Tons 5.9 M Ton	6.5 Tons 5.9 M Ton	6.4 in. 163 mm
1	15" x 15" x 3/4" 38.1 cm x 38.1 cm x 1.9 cm	10 lbs 4.5 Kg	10.8 Tons 9.8 M Ton	8.2 in 208 mm
1	15" x 21" x 3/4" 38.1 cm x 53.3 cm x 1.9 cm	15.0 Ton 13.6 M Ton	15.0 Tons 13.6 M Ton	9.0 in 230 mm
1	20" x 20" x 3/4" 50.8 cm x 50.8 cm x 1.9 cm	16 lbs 7.3 Kg	20.2 Tons 18.3 M Ton	11.0 in 280 mm
1	24" x 24" x 3/4" 61.0 cm x 61.0 cm x 1.9 cm	22 lbs 10.0 Kg	29.9 Tons 271. M Ton	13.0 in 330 mm

Each Air Lifting Bag shall have a maximum thickness of 1 in (2.54 cm) and a maximum working pressure at 118-psi (8 bars).

**Master Control Package (1)**

Contains controls, fittings, adaptors and color-coded air hoses that are most commonly used in field applications. Items included in master control package are marked by (\*).

**Dual Push Button Controller\* (1)**

The control mechanism is to be designed and manufactured to safely control the inflation and deflation of one or two lifting bags. Each Air Lifting Bag shall be capable of being raised or lowered independently or simultaneously by means of a push button control. The controller shall be of the “Deadman Style” which requires positive pressure on the push buttons during the inflation or deflation of the Air Lifting Bags. Each of the four push buttons shall be color coded to denote the “Inflate” and “Deflate” function of the valve.

Each controller shall be equipped with two self-resetting relief valves to prevent accidental over pressurization of the Air Lifting Bags. The relief valve setting will be 118-psi.

The controller shall be equipped with two multi-colored operating gauges. The safe operating range, 0-118-psi, shall be clearly identified with a green background. The unsafe operating range, over 118-psi, shall have a red background. Each gauge shall be a minimum of 2 in. (5.1 cm) in diameter and be protected with a molded Neoprene guard.

The controller shall be designed for maximum portability and confined space operations. An adjustable carrying strap will be provided to allow maximum operator mobility.

The controller shall be equipment with a single air inlet and two air outlets. Both the inlet and outlets shall be spring-loaded, female, quick connect couplings complete with a threaded lock ring.

**Hoses\* (5)**

QUANTITY	LENGTH Ft. (m.)	COLOR
1	16 (4.877)	Black
1	16 (4.877)	Red
1	16 (4.877)	Yellow
1	16 (4.877)	Blue
1	16 (4.877)	Green

All hoses shall be equipped with a quick disconnect nipple and coupling that are compatible with the entire system. The inside diameter shall be 3/8 in. (.95 cm) and the minimum length shall be either 15 ft. (4.88 m) or 32 ft (9.75 m) as specified. The colors shall be as specified. The hose shall have a working press of 300-psi and a burst pressure of 1000-psi and have a usable temperature range of -40 degrees F to 150 degrees F (-22.22 degrees C to 65.56 degrees C) continuous service. Each hose shall be equipped with a brass male nipple and brass female quick-connect couplers. The female coupler must include a threaded locking ring installed to prevent accidental separation of the connector set. All couplings and nipples must be field replaceable using common hand tools. All couplings must be "closed" type that automatically stops airflow when disconnected.

**Shut-off Valve w/Safety Relief\* (4)**

Allows Air Lifting Bag to remain safely inflated after it has been disconnected from the controller. Manufactured from aluminum, this inline shut-ff should have a quick connect brass coupler with a self-resetting relief valve set at 135-psi.

**Twist Lock Adaptor and Shut Off\* (1)**

Allows the Air Lifting Bag System to use an alternative air supply. Includes twist lock connector common to most high capacity construction type air compressors, inline shut off and Air Lifting Bag nipple outlet.

**Industrial Adaptor and Shut Off\* (1)**

Allows the Air Lifting Bag System to use most industrial compressed air systems. Includes universal quick connect, inline shut off and Air Lifting Bag nipple outlet.



**"Y" Connectors \* (2)**

Used to connect multiple air hoses. Air Lifting Bags and accessories. There are brass and aluminum fittings consisting of one nipple & two couplings.

**Locking Tire Chuck\* (1)**

Used to draw air from truck tires or to inflate tires at a highway emergency. Locking chuck x nipple.

**Nipples\* (6)**

An assortment of 6 brass replacement nipples.

**Use, Care & Maintenance Manual (1)**

Illustrated step-by-step guide on the use, care and maintenance of the Air Lifting Bag System shall be furnished.

*Instructional Video Presentation*

A complete video presentation on the use, care and maintenance of the Air Lifting Bag System being offered shall be provided.

*Warranty*

The seller shall be required to furnish a warranty on the complete Air Lifting Bag System as described in these specifications for the service intended of the buyer. All equipment furnished by the successful bidder shall be warranted against all defects in material and workmanship for a period of at least one year from date of acceptance. The seller agrees to replace, without charge, any parts shown to be defective under the terms of this warranty.

*Post Warranty Service*

Because the service life of the Air Lifting Bag System is expected to be considerably longer than the warranty period, consideration must be given to the origin of the components. Bidders shall state the name, city, state and country of the actual manufacturer of the following primary system components. Failure to disclose this information will be cause for rejection.

	ITEM	MANUFACTURER	CITY, STATE & COUNTRY
Air Lifting Bags			
Pressure Regulator			
Safety Control Valve			
Air Fittings			
Safety Relief Valves			

**Training**

Vendor shall provide on-site training for the equipment on four (4) separate dates.

**I. INSTRUCTIONS TO BIDDERS****A. Preparation of Bid Proposal**

1. The Bidder shall submit her/his proposal upon the forms furnished by the City (attached). The Bidder shall specify the unit price or lump sum bid, both in words and figures for each pay item listed. All words and figures shall be in ink or typed.
2. If an amount entered by the bidder on the proposal form is to be altered it should be crossed out with ink, the new unit price or lump sum bid entered above or below it, and initialed by the bidder, also with ink. In a case of discrepancy between the prices written in words and those written in figures, the prices written in words shall govern.
3. The Bidder's proposal must be signed with ink by the individual, by one or more members of the partnership, by one or more members or officers of each firm representing a joint venture, by one or more officers of a corporation, or by an agent of the contractor legally qualified and acceptable to the owner. If the proposal is made by an individual, his name and post office address must be shown; as a joint venture, the name and post office address of each must be shown; by a corporation, the name of the corporation and its business address must be shown, together with the name of the state in which it is incorporated, and the names, titles, and business address of the President, Secretary, Treasurer.
4. All questions shall be submitted in writing to and received by the Purchasing Agent at the above address, a minimum of 7 days prior to the scheduled bid opening. The Purchasing Agent, will then forward both the question and the City's response to the question to all prospective bidders.

**B. Irregular Proposals - Bid proposals will be considered irregular and may be rejected for any of the following reasons:**

1. If the proposal is on a form other than furnished by the Owner, or otherwise specified, or if the form is altered or any thereof is detached.
2. If there are unauthorized additions, conditional or alternated bids, or irregularities of any kind which may tend to make the proposal incomplete, indefinite, or ambiguous as to its meaning.
3. If the bidder adds any provisions reserving the right to accept or reject an award, or to enter into a contract pursuant to an award.
4. If the proposal does not contain a unit price for each pay item listed, except in the case of authorized alter pay items.

**C. Interpretations - No oral interpretations will be made to any vendor as to the meaning of the specifications or terms and conditions of this sealed proposal invitation.**

**D. Delivery of Bid Proposals**

1. When sent by mail, the sealed proposal shall be addressed to the owner at the address and in the care of the official in whose office the bids are to be received. All proposals shall be filed prior to the time and at the place specified in the invitation for bids. Proposals received after the time for opening of the bids will be returned to the bidder, unopened. Faxed bid proposals are not acceptable.

**E. Withdrawal of Bid Proposals**

1. A bidder will be permitted to withdraw his proposal unopened after it has been deposited if such request is received in writing prior to the time specified for opening the proposals.
2. No bid may be withdrawn, for a period of (60) sixty days subsequent to the opening of bids, without express written consent of the City of Rochester, NH.

**F. Public Opening of Proposals**

1. Proposals will be opened and read publicly at the time and place indicated in the invitation for bids. Bidders, their authorized agents, and other interested parties are invited to be present.

**G. Disqualification of Bidders - Either of the following reason may be considered as being sufficient for the disqualification of a bidder and the rejection of his proposal of proposals:**

1. More than one proposal for the same work from and individual, firm, or corporation under the same or different name.
2. Evidence of collusion among bidders.
3. Failure to supply complete information as requested by bid specifications.

**II. BID EVALUATION****A. In addition to the bid amount, additional factors will be considered as an integral part of the bid evaluation process including, but not limited to:**

1. The bidder's ability, capacity, and skill to perform within specified time limits.
2. The bidder's experience, reputation, efficiency, judgment, and integrity.
3. The quality, availability and adaptability of the supplies and materials sold.
4. Bidder's last performance.
5. Sufficiency of bidder's financial resources to fulfill the contract.
6. Bidder's ability to provide future maintenance and/or services.
7. Other applicable factors as the City determines necessary or appropriate (such as compatibility with existing equipment).

### **III. AWARD AND EXECUTION OF CONTRACT**

#### **A. Consideration of Proposals**

1. Bids will be made public at the time of opening and may be reviewed only after they have been properly recorded. In case of discrepancy between the prices written in words and those written figures, the written in words shall govern. In case of discrepancy between the total shown in the proposal and that obtained by adding the products of the quantities of items and bid prices, the latter shall govern.
2. The right is reserved to reject any or all proposals, to waive technicalities or to advertise for new proposals, if in the judgment of the City, the best interest of the City of Rochester will be promoted thereby.

#### **B. Award of Contract**

1. If a contract is to be awarded, the award will be made to the lowest responsible and qualified bidder whose proposal complies with all the requirements prescribed in the bid specifications page(s) and bid evaluation section of this document, as soon as practical after the bid opening. No bid shall be withdrawn for a period of (60) sixty days subsequent to the opening of bids, without the consent of the city of Rochester. The successful bidder will be notified, at the address listed on the proposal, that the bid has been accepted and contract negotiations shall follow.

#### **C. Cancellation of Award**

1. The City reserves the right to cancel the award of any contract at any time before the execution of such contract by all parties without any liability against the City.

### **IV. EXTRAS**

- A. Except as otherwise herein provided, no charge for any extra work or material will be allowed unless the same has been ordered, in writing, by the City of Rochester.

### **V. GUARANTEE OF WORK**

- A. Except as otherwise specified, all work shall be guaranteed by the Contractor against defects result in from the use of inferior materials, equipment or workmanship for one (1) year from the Date of Final Acceptance.
- B. Make good any work or material, or the equipment and contents of said building or site disturbed in fulfilling any such guarantee.

- C. In any case, wherein fulfilling the requirements of the Contract or of any guarantee, should the Contractor disturb any work guaranteed under another contract, the Contractor shall restore such disturbed work to a condition satisfactory to the Director of Public Works. And guarantee such restored work to the same extent as it was guaranteed under such other contracts.
- D. If the Contractor, after notice, fails to proceed promptly to comply with the terms of the guarantee, the City of Rochester may have the defects corrected and the Contractor shall be liable for all expense incurred.
- E. All special guarantees applicable to definite parts of the work that may be stipulated in the Specifications or other papers forming a part of the Contract shall be subject to the terms of this paragraph during the first year of the life of such special guarantee.

## **VI. DEFAULT AND TERMINATION OF CONTRACT**

- A. Cause – Any of the following reasons, but not limited to, may be cause for termination of the contract or agreement entered into between the City and vendor.
  - 1. Fails to begin work under Contract within the time specified in the notice to proceed.
  - 2. Fails to perform the work with sufficient workmen and equipment, or with sufficient materials to assume prompt completion of said work.
  - 3. Performs the work unsuitably or neglects or refuses to remove materials or to perform a new such work as may be rejected as unacceptable and unsuitable.
  - 4. Discontinues the prosecution of the work.
  - 5. Fails to resume work, which has been discontinued, within a reasonable time after notice to do so.
  - 6. Becomes insolvent or has declared bankruptcy, or commits any act of bankruptcy or insolvency.
  - 7. Makes an assignment for the benefit of creditors.
  - 8. For any other causes whatsoever, fails to carry on the work in an acceptable manner the City of Rochester will give notice, in writing, to the Contractor for such delay, neglect, and default.
    - a. If the Contractor does not proceed in accordance with the Notice, then the City of Rochester will have full power and authority without violating the Contract to take the prosecution of the work out of the hands of the Contractor. The City of Rochester may enter into an agreement for the completion of said Contract according to the terms and conditions thereof, or use such other methods as in his opinion will be required for the completion of said Contract in an acceptable manner.
    - b. All extra costs and charges incurred by the City of Rochester as a result of such delay, neglect or default, together with the cost of completing the work under the Contract will be deducted from any monies due or which may become due to said Contractor. If such expenses exceed the sum which would have been payable under the contract, then the Contractor

shall be liable and shall pay to the City of Rochester the amount of such excess.

**BASE BID**

ITEM #1	BID AMOUNT
One (1) built in power takeoff (PTO) Hydraulic Rescue Tool System.	_____
One (1) electric rewind Hannay Reel capable of holding 125' of hose.	_____
Three (3) sets of high pressure hydraulic hoses 125' in length	_____
One (1) Handheld pendant control module with thirty (30) feet of hose.	_____
System installation, mounting, miscellaneous hoses and fittings provided by the vendor.	_____
ITEM #2	
One (1) Heavy Duty Hydraulic Rescue Spreader with extended tip kit.	_____
ITEM #3	
One (1) Heavy Duty Hydraulic Rescue Cutter.	_____
ITEM #4	
One (1) Amkus 30cx arm upgrade for existing tool.	_____
ITEM #5	
One (1) set Amkus extended tips for existing tool.	_____
ITEM #6	
Two (2) Amkus 25E speedway cutter blades for existing tool.	_____
ITEM #7	
One (1) minimum 1.2 ton lifting capacity square bag.	_____
One (1) minimum 6.5 ton lifting capacity square bag.	_____
One (1) minimum 10.8 ton lifting capacity square bag.	_____
One (1) minimum 15 ton lifting capacity square bag.	_____

One (1) minimum 20.2 ton lifting capacity square bag. \_\_\_\_\_

One (1) minimum 29.9 ton lifting capacity square bag. \_\_\_\_\_

One (1) master control package with case. \_\_\_\_\_

**Total Base Bid**

\_\_\_\_\_  
**In figures**

\_\_\_\_\_  
**In words**

**Optional Equipment**

Two (2) Paratech 36-58 Acme Strut \_\_\_\_\_

Two (2) Paratech Anchor Replacement Kits \_\_\_\_\_

The above equipment is to work with out existing Paratech Struts \_\_\_\_\_

Total Bid Price for Optional Equipment \_\_\_\_\_  
(In figures) (In words)



**OBTAINING BID RESULTS**

Bid results will be posted after 48 hours on the City of Rochester’s web site: [www.rochesternh.net](http://www.rochesternh.net) or will be available by request via e-mail at the following address: [purchasing@rochesternh.net](mailto:purchasing@rochesternh.net)

***“Bid Name” Bid Form***

Vendor Name: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Phone: \_\_\_\_\_

E-mail: \_\_\_\_\_

Delivery or Completion Date: \_\_\_\_\_

Date: \_\_\_\_\_

Print Name & Title: \_\_\_\_\_

Authorized Signature: \_\_\_\_\_

**NOTE: City reserves the right to accept the entire bid or select specific items to purchase.**

All Bids are to be submitted on this form, unless otherwise stated, and in a sealed envelope, plainly marked on the outside with the Bidder’s name and address and the Project name as it appears at the top of the Proposal Form