SPECIFICATIONS FOR GARAGE ADDITION

SECTION 15871

VEHICLE EXHAUST EXTRACTION SYSTEM HOSE STORAGE SYSTEM

SPRING OPERATED

PART 1: GENERAL

1.01 RELATED DOCUMENTS

A. Conditions of the Contract and portions of Division One of this Project Manual apply to this Section as though repeated herein.

1.02 SUMMARY

Model 850 for 5 and 6 inch diameter hoses.

A. Section Includes:
1. Spring Operated Hose Reel Hose Storage System, PlymoVent SER-850

1.03 SYSTEM DESCRIPTION

A. Hose Storage System.
B. Supports.
C. Motor/Fan
D. Electrical Controls

1.04 SUBMITTALS

A. Product Data: Indicate manufacturer's model number, technical data, accessories, requirements for access, maintenance, weights and service-connections including dimensions.

B. Contractor to provide layout drawings showing field locations of all hose reels, duct diameters and hanger details.

C. Closeout Submittals: Operation and Maintenance data manual including spare parts list.

1.05 QUALITY ASSURANCE

A. The manufacturer must be a ISO 9001:2000 certified www.iso.org manufacturer with certification issued to a United States facility, this shows a commitment to delivering the highest quality service and products to the end user. Manufacturer shall be UL and CUL Certified www.ul.com/database/ and certified by the Air Movement and Control Association (AMCA) www.amca.org/search.htm to ensure

quality, consistency and reliability of products. All certification documents shall be provided and attached to the bid proposal. No exceptions.

B. Engage an experienced installer to perform work of this Section who has specialized in installing hose storage systems, who has completed installations similar in design and extent to that indicated for this Project, and who has a record of successful in-service performance.

C. Engage a firm experienced in manufacturing hose storage systems similar to that indicated for this Project and with a record of successful in-service performance.

D. Conduct conference at Project site. Review methods and procedures related to hose storage system installation.
1. Review access requirements for equipment delivery.
2. Review equipment storage and security requirements.
3. Inspect condition of preparatory work performed by other trades.
4. Review structural loading limitations.

1.06 DELIVERY, STORAGE AND HANDLING

A. Packing, Shipping, Handling and Unloading: Deliver hose storage system as a factory assembled unit with protective crating and covering. Store equipment in original protective crating and covering and in a dry location.

1.07 PROJECT/SITE CONDITIONS

A. Existing Conditions: Verify dimensions installation areas by field measurements.

1.08 COORDINATION

A. Coordinate layout and installation with other work, including light fixtures, HVAC equipment, and fire-suppression system components.

B. Coordinate location and requirements of service-utility connections.

PART 2: PRODUCTS

2.01 MANUFACTURER

A. PlymoVent Corporation
115 Melrich Road
Cranbury, NJ 08512
Telephone: (800)644-0911
FAX: (609)655-0569
WEB: info@plymoventusa.com

2.02 MANUFACTURED UNITS

Note: A 650 hose reel will hold 42' of three-inch, 30' of four-inch, 25' of five-inch or 20' of six-inch hose around the hose reel drum. An 850 hose reel will hold 42' of four-inch, 33' of five-inch or 27' of six-inch hose around the hose reel drum.

A. Spring Operated Hose Reel Hose Storage System.

1. Model: SER-850-150 for 6 inch diameter hose. Storage Reel Hose Storage System.
2. Hose Reel Construction and Components:
   a. All steel components shall be electro zinc plated steel except for the hose storage drum end plates, which will be powder coated yellow.
   b. Provide four angle clips, one at each corner for mounting reel to walls or building steel.
   c. Spring cassette must be a sealed enclosure to prevent the coiled spring from coming out of the enclosure if the spring needs to be exchanged.
   d. Spring cassette must be on the outside of the reel assembly (not in-between the hose reel side bracket and rotating drum) and held to the reel with four bolts.
   e. Spring shall be a one-inch wide heavy duty coil spring with a total lifting capacity of 40 lbs.
   f. Provide two adjustable side support tie bars that both connects the side plates together and acts as the hose stop bar. Field adjust location of bar to match hose diameter used.
   g. Provide two steel hose guides bolted to the rotating drum of hose reel. Plastic tubing type hose guides are unacceptable.
   h. Access slot in hose reel drum shall be covered with a sheet metal cover made from the same thickness steel as the drum. Cover any exposed edges of drum access slot with a heavy molded trim channel that covers the entire edge.
   i. Provide, as part of the hose reel assembly, a rubber hose stop collar. This collar is installed around the hose and adjusted to control the amount of hose that hangs down off the reel when the hose is recoiled.
   j. Provide a latch and lock feature on each hose reel. This feature allows an operator to pull the hose down to a convenient position and the reel will stay there until the hose is recoiled by pulling out a little more hose.
   k. Hose reel must be designed to allow for future conversion from a spring recoil type reel to a motor activated reel via removal of the spring cassette and addition of the motor drive without complete disassembly of the reel.
   L. Provide hose reel with a toggle switch which is activated via the rotation of the hose reel drum to signal fan start.

2.02 EXHAUST HOSE

A. Provide the hose reels with 6" diameter x 25' long exhaust hose.

B. Construction: Double layered, chemically treated woven glass fabric with stainless wire mesh reinforcement, mechanically joined to an exterior steel crimping coil.

C. Hose provided must be suitable for continuous operation at 570 F and allow for a short duration of spike temperatures of 600F. Hoses that are constructed utilizing adhesives or other bonding methods shall not be used.

D. Hose fabric shall not contain asbestos or silicone.

E. Compressibility: 1:5

2.03 **TAILPIPE ADAPTOR**

A. Rubber Nozzle with Spring Clip: provide a rubber nozzle with spring clip on each 6.0 inch dia. hose to secure to the vehicle tailpipe. Rubber to be molded of high temperature resistant rubber. Temperature resistance up to 430F.

2.04 **SAFETY DISCONNECT COUPLING**

A. Safety Disconnect Coupling: 4-part segmented coupling with removable wear strips to protect the vehicle and disconnect from wear shall be incorporated in the design of the system. Coupling: Consist of two spun aluminum (ASTM B209/B209M) collars connected by a reusable-segmented coupling band. The release tension of this device shall be preset at 130 pounds and adjustable from 20 pounds to 206 pounds of separating force. Coupling: Reusable.

2.05 **EXHAUST FAN CONTROL SYSTEM**

***For main service bay system only**

A. Provide each hose reels with a mechanically operated damper which opens when hose is brought down for use and closes when the hose is retracted.

B. Provide each hose reel with a micro-switch to signal master fan controller (DCV) when a hose is brought down for use.

C. Provide one DCV Fan speed controller and Pressure Transmitter (TG) matched to the fan and duct static pressure where transmitter is positioned. The DCV controller shall vary the fan speed based on the number of hose reels in use at any one time, via a signal provided by the TG. The micro-switch, located on the hose reels provides the start/stop signal for the DCV controller.

D. Locate DCV controller within secure area or electrical power room.

E. Programing of the DCV controller is done upon completion of the installation of all equipment.

F. Controller: Built and supplied by a UL recognized and listed exhaust system manufacturer. Controller shall carry the UL - CUL listing label as an “Enclosed Industrial Control Panel.” Individual components listed by UL - CUL shall not satisfy the above requirement. Manufacturer shall undergo monthly inspections by UL to verify all requirements and standards are met as outlined by UL. The controller shall be delivered as an Operating System Three series controller or an approved equal to the specifications to follow.

2.06 EXHAUST FAN

A. Centrifugal Fans: Direct drive centrifugal type, high pressure, single width, single inlet as required or indicated. Impeller Wheels: Radial design or

backward incline for performance, spark resistant and made of a non-ferrous material to prevent static electricity build up. The impeller shall be dynamically and statically balanced and of the non-overloading type to provide maximum efficiency while achieving quiet, vibration-free operation. The fan housing shall be manufactured from a epoxy powder coated galvanized steel or nonferrous material. The outlet configuration shall be top horizontal, bottom horizontal, or upblast. The housing shall be capable of field reconfiguration in the event the mounting position needs to be changed for unforeseen reasons.

B. Fan Motor and Bearing: 7.5 horsepower motor shall be totally enclosed fan cooled (TEFC) continuous duty rated. The motors shall be dual voltage where applicable. The bearings shall be self-aligned, ball bearing type permanently sealed and lubricated. The exhaust discharge outlet shall be in compliance with International Mechanical Code and ACGIH recommendations (min. of 36" above roofline). Air intakes, windows, prevailing currents, communication equipment and building aesthetics shall be considered in the final location of the fan.

C. Teflon Shaft Seal: The fan shaft shall be steel and rotate in a non-sparking TEFLON seal to prevent leakage and to prevent hot exhaust gases from coming into contact with the motor bearings.

D. Variable Speed Drive: The motor shall be compatible with a variable speed drive unit.

E. Performance: The delivered volume shall take into account all the static regain of vehicle engine exhaust (based on an airtight connection at the tailpipe), lengths of ductwork, elbows, branches, shut off, wyes, etc. which accumulate the static pressure at the field inlet. The manufacturer's provided fan(s) shall be performance guaranteed.

F. Fan Capacity: The Fan Capacity shall be sized as such as to deliver the required CFM at each hose reel drop to which the vehicle is attached.

G. The 7.5 Hp fan shall be designed to deliver a minimum of 500 CFM at the hose and nozzle connection with up to 4 hose reels in use at one time. A total of 2200 cfm at 7.0" sp.

2.07 Ductwork System

Ductwork Type and Materials: UMC Class 2 or SMACNA Class II product conveying duct, meet or exceed criteria for construction and performance as outlined in Round Industrial Duct Construction Standards, SMACNA. Materials of construction unless otherwise specified for all ductwork and fittings shall be a minimum G-90 galvanized sheet metal (ASTM A653/A653M). External Ductwork: Sized for the exact inlet and outlet of the exhaust fan blower. An exhaust rain cap shall be supplied and manufactured in accordance with EPA standard for free draft rain cap requirements. Included as an integral part of this rain cap shall be a back draft damper to provide protection from rain and other inclement weather.

2.07 FABRICATION

A. Shop Assembly: Shop assemble hose reel to greatest extent possible for ease of shipment. Provide with each hose reel an adapter assembly to adapt the hose reel to the desired hose diameter.

PART 3: EXECUTION

3.01 EXAMINATION

A. Examine areas and conditions, with Installer present, for compliance with requirements for installation tolerances, service-utility connections, and other conditions affecting installation and performance of food service equipment. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.02 INSTALLATION

A. Install system level and plumb, and in accord with manufacturer's written instructions, original design and referenced standards.

3.03 ADJUSTING

A. Adjust system for proper operation. Replace any parts that prevent the system from operating properly.

3.04 CLEANING

A. Remove all debris caused by installation of the system. Clean all exposed surfaces to as fabricated condition and appearance.

3.05 DEMONSTRATION

A. Provide the end user a minimum of one hour of hands-on demonstration and operation of the system

3.06 PROTECTION

A. Provide protection of the completed installation until completion of the project. Repair any damage at no additional cost to owner

3.07 WARRANTY

A. Provide a written warrantee for a period of one year from date of shipment for all components.

END OF SECTION 15871