SS-RMAC-LP - 1.00

SHORT SPECIFICATION
RISER-MOUNT AIR COMPRESSOR - LOW PRESSURE

Furnish and install riser-mount air compressor(s) for pressure supervision of the preaction or dry-pipe fire sprinkler system piping network(s). The device(s) shall be Model RMAC-LP, manufactured by UNITED Fire Systems, Kenilworth, NJ USA (908-688-0300), and shall contain all components factory-assembled and tested to make up complete, ready-to-install device(s).

1. RELATED SPECIFICATIONS
   - A. Preaction Fire Sprinkler System
   - B. Dry-Pipe Fire Sprinkler System.
   - C. Quality Control.
   - D. Common Work Results for Fire Suppression.
   - E. Schedules for Fire Suppression.
   - F. Contract drawings
   - G. General provisions of the contract, including General and Supplementary Conditions.

2. PERFORMANCE REQUIREMENTS
   - A. The device(s) shall be pre-assembled and fully factory tested.
   - B. Design and performance of the device(s) shall comply with NFPA 13, *Standard for the Installation of Sprinkler Systems*, 2016 edition.
   - C. Contractor shall furnish and install the riser-mount air compressor(s) per this specification and all applicable contract drawings.
   - D. Device Operation. The device shall operate to pressurize the sprinkler piping to supervisory pressure in 30 minutes or less, in accordance with NFPA 13.

3. SUBMITTALS
   - A. Product Data. Include, as applicable, product rated capacities, operational characteristics, and materials and standards of construction.
   - B. Shop Drawings. Show device installation locations and details.
   - C. Closeout Submittals
     1. Location of devices on system as-built drawings.
     2. Operation and maintenance instructions.
   - D. Operation and Maintenance Submittals.

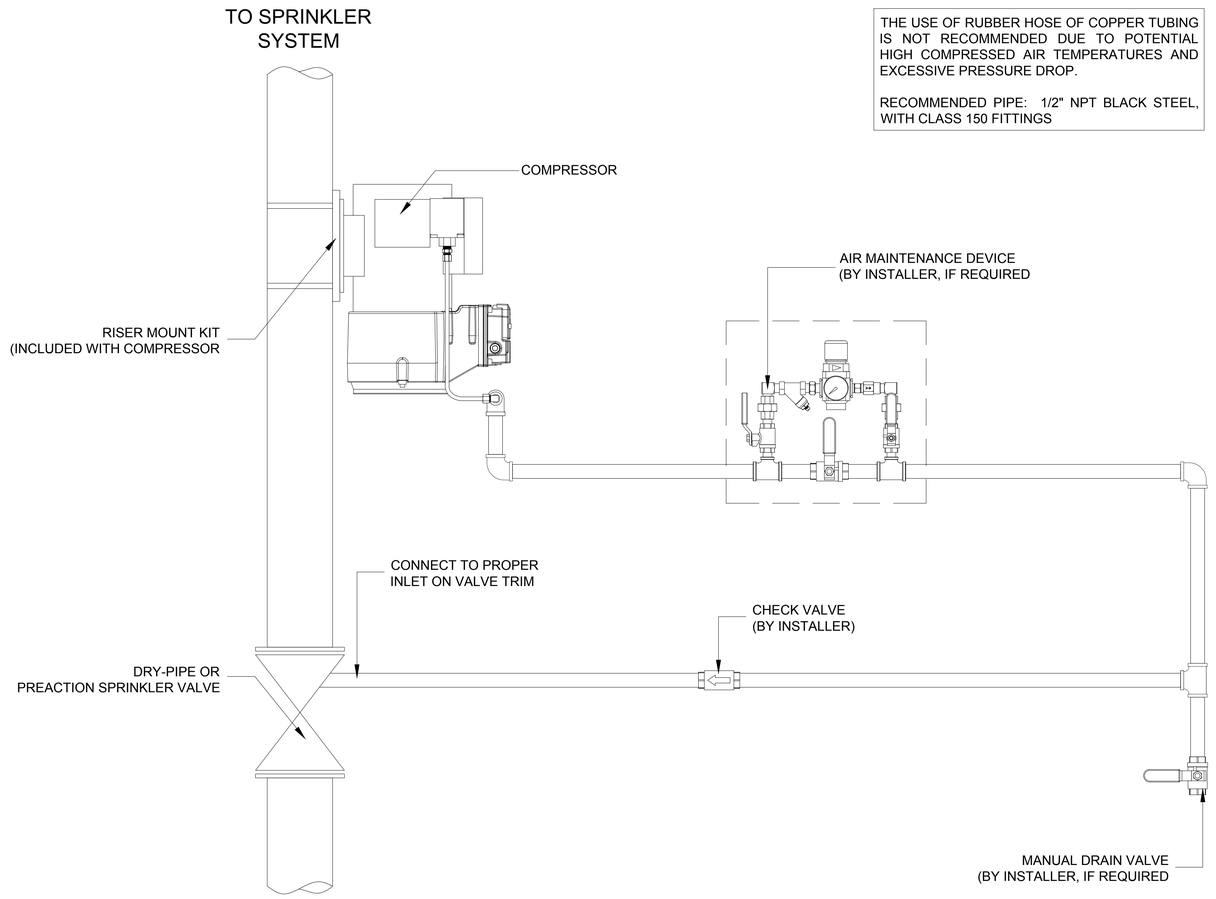
4. RISER-MOUNT AIR COMPRESSOR(S).
   Furnish and install riser-mount air compressor(s) for pressure supervision of the preaction or dry-pipe fire sprinkler system piping network(s). The device(s) shall be Model RMAC-LP, manufactured by UNITED Fire Systems, Kenilworth, NJ USA (908-688-0300), and shall contain all components factory-assembled and tested to make up a complete, ready-to-install device. The device shall have:
   - A. Motor: 115 VAC, 60 Hz, single phase.
   - B. Pump: Piston-type, oil-less, with permanently lubricated bearings.
   - C. Pressure switch: Factory wired to control motor operation, with factory-adjusted 13 PSIG cut-in pressure and 18 PSIG cut-out pressure.
   - D. Check valve: Bubble tight at compressor outlet.
   - E. Pressure relief valve: Capable of being manually operated.
   - F. Air intake filter(s): Replaceable at manufacturer-specified maintenance interval.
   - G. Hardware kit: Enabling riser-mounting of the compressor, with a custom sheet metal bracket, a minimum of three (3) worm-clamp-type mounting straps to attach bracket to sprinkler riser, and bolts, nuts and washers to attach compressor to bracket.

5. PIPE AND FITTINGS.
   Pipe and fittings for connection of air compressor outlet to fire sprinkler valve trim.
   - A. Pipe - Schedule 40 Steel, per ASTM A53 / A53M - Specification for Pipe, Steel, Black, Welded and Seamless.
   - B. Nipples - Steel Pipe Nipples. Threaded End, per ASTM A733 - Specification for Welded and Seamless Carbon Steel Pipe Nipples.
   - C. Fittings - All fittings shall be black. Galvanized fittings shall not be used. Fittings per ANSI B16.3 - Malleable Iron Threaded Fittings, or ANSI B16.4 - Cast Iron Threaded Fittings.
   - D. Couplings - Per ASTM A865 - Specification for Threaded Couplings, Steel, Black, Welded or Seamless, for Use in Steel Pipe Joints.
   - E. Unions. Use unions only as necessary where joining pipe is impossible or impractical without them. Unions per ANSI B16.39 - Malleable Iron Threaded Pipe Unions.
   - F. Threads - Threaded ends per ANSI B2.1 - Basic Standards for Steel Pipe Threads, and ANSI B1.20.1 - Pipe Threads, General Purpose (Inch). All threads shall be NPT.
   - G. Copper tubing or rubber hose shall NOT be used.

6. OPERATION
   - A. The device shall operate automatically, with no manual intervention needed.
   - B. The device shall provide sufficient free air capacity in SCFM shall be available to fill the fire sprinkler piping from zero (0) PSIG to the required supervisory pressure in a maximum of 30 minutes
   - C. The pressure switch shall activate the compressor when pressure falls below 13 PSIG, and de-activate the compressor when pressure reaches 18 PSIG.
   - D. The pressure relief valve shall operate automatically at or below 75 PSIG to limit the outlet pressure, and shall be capable of being operated manually for test purposes.

7. STORAGE AND HANDLING.
   Deliver all material and equipment properly identified by type, size, manufacturer's name and specification section. All material to be undamaged. Do not store exposed to weather. Store indoors or cover to protect from damage. Protect all material and equipment to prevent damage and entrance of foreign matter. During loading, transporting, and unloading, handle all material and equipment with care to prevent damage. Do not drop. Store all material and equipment to the satisfaction of the Resident Engineer.

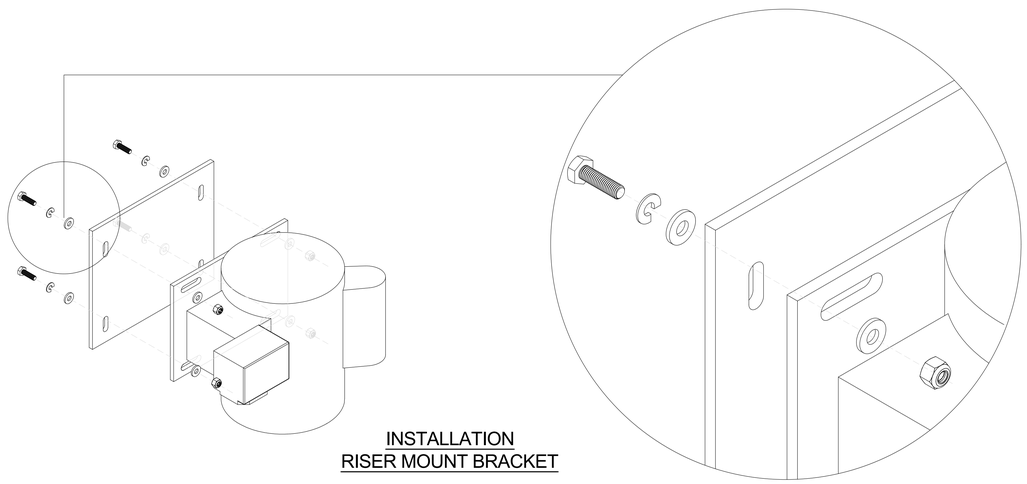
8. INSTALLATION
   - A. Location and Arrangement. Contract drawings, plans, schematics, and diagrams indicate general location and arrangement of device(s). Shop drawings shall indicate actual device installation layout. Install device(s) per approved shop drawings.
   - B. Deviations. Installation deviations from approved shop drawings require written approval from the Engineer. During installation, do not deviate from approved shop drawings without written approval from the Engineer.
   - C. Mounting. Mount the device on the fire sprinkler system riser using the manufacturer-provided mounting kit. Use all hardware supplied with the mounting kit, in accordance with the manufacturer-supplied instructions.
   - D. Pipe Ends. Ream ends of pipe to remove burrs. Bevel plain ends of pipe.
   - E. Examination. Examine all pipe and fittings thoroughly before installation. Do not install damaged or defective pipe or fittings.
   - F. Cleaning. Remove scale, slag, dirt, oil, cutting and threading shavings, and debris from inside and outside of pipe after fabrication and before assembly. Use a non-toxic solvent to ensure pipe is clean. Pipe shall be free of solvent and water when installed.
   - G. Electrical. Supply 115 VAC, 60 Hz, single-phase power from a circuit breaker in the panelboard indicated on the contract drawings. No other device shall be powered by this circuit. Installation shall be in accordance with NFPA 70, *National Electrical Code*. Conductor size shall be in accordance with instructions supplied by compressor manufacturer.



THE USE OF RUBBER HOSE OF COPPER TUBING IS NOT RECOMMENDED DUE TO POTENTIAL HIGH COMPRESSED AIR TEMPERATURES AND EXCESSIVE PRESSURE DROP.

RECOMMENDED PIPE: 1/2" NPT BLACK STEEL, WITH CLASS 150 FITTINGS

INSTALLATION
RISER MOUNT COMPRESSOR



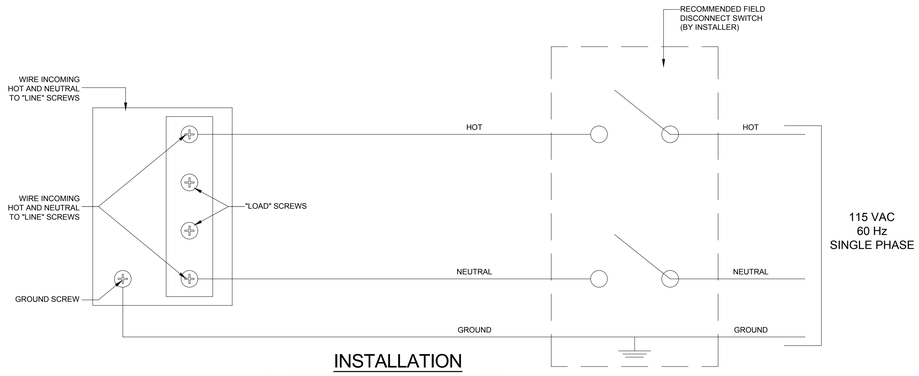
INSTALLATION
RISER MOUNT BRACKET

Table 1: CHOOSING A COMPRESSOR

Compressor Kit P/N	Compressor P/N	Motor HP	Maximum Sprinkler Volume** (Gallons)	Voltage (V)	Current Draw (A)
RMAC-LP-16	00-100032-001	1/6	220	115	3.3
RMAC-LP-13	00-100032-002	1/3	430	115	3.5
RMAC-LP-12	00-100032-003	1/2	670	115	7.2
RMAC-LP-34	00-100032-004	3/4	850	115	10.6

Table 2: MINIMUM RECOMMENDED WIRE SIZE

Compressor Kit P/N	Compressor P/N	Compressor HP	Up to 50 feet	Over 50 feet up to 100 feet
RMAC-LP-16	00-100032-001	1/6	12 AWG	12 AWG
RMAC-LP-13	00-100032-002	1/3	12 AWG	10 AWG
RMAC-LP-12	00-100032-003	1/2	12 AWG	10 AWG
RMAC-LP-34	00-100032-004	3/4	12 AWG	8 AWG



INSTALLATION
ELECTRICAL WIRING DIAGRAM

REV	DATE	DESCRIPTION
1.00	23 JAN 2020	RELEASED

UNITED FIRE SYSTEMS
1 MARK ROAD
KENILWORTH, N.J. 07033
TEL (908)688-0300
FAX (908)688-0218

SCALE	NO SCALE
DESIGNED BY	J. GAMBOA
CHECKED BY	S. SLONSKI
SPECIFICATION ID	DS-RMAC-LP 1.00
DATE	23 JAN 2020
SHEET	1 OF 1