



**UNITED FIRE SYSTEMS**  
 1 MARK ROAD, KENILWORTH, NJ 07033 USA  
 908-688-0300 -- [www.unitedfiresystems.com](http://www.unitedfiresystems.com)



**NITROGEN-PAC™ SC SERIES EQUIPMENT SELECTION GUIDE**  
**UFS-1001 REV 4.03 - DEC 2019 - PAGE 1 OF 2**

**INSTRUCTIONS**

1. Become familiar with Section 2 of SC-1 & SC-2 Installation, Commissioning, and Maintenance Manual P/N 30-NPSICM-000.
2. Perform survey of sprinkler system(s) to be protected by a NITROGEN-PAC™ SC Series sprinkler corrosion inhibiting system.
3. Items in **BLUE** boxes should be filled in by person performing survey.
4. Items on both pages in **RED** boxes automatically fill based on entered survey information.
5. Maximum allowable supervisory pressure is 40 PSI.

**NITROGEN-PAC SC UNIT LIMITATIONS = AND = AUTOMATIC UNIT SELECTION**

MAXIMUM NUMBER OF RISERS	FOR INITIAL-FILL WITH AIR (IF REQUIRED)		FOR NITROGEN GENERATION CAPACITY - MAXIMUM CAPACITY OF ALL RISERS - GALLONS	UNIT MODEL NUMBER
	SINGLE LARGEST RISER - GALLONS	OVER 20 TO 40 PSI		
3 RISERS	600 GALLONS	300 GALLONS	800 GALLONS	MODEL SC-1S
5 RISERS	600 GALLONS	300 GALLONS	1200 GALLONS	MODEL SC-1M
3 RISERS	950 GALLONS	475 GALLONS	1600 GALLONS	MODEL SC-2M
5 RISERS	950 GALLONS	475 GALLONS	4000 GALLONS	MODEL SC-2L

**STEP 1 - INITIAL-FILL WITH AIR**

**CLICK HERE TO CLEAR STEP 1 - INITIAL-FILL WITH AIR SELECTION**

**IS NITROGEN-PAC SYSTEM REQUIRED TO PERFORM INITIAL-FILL FUNCTION?**

**STEP 2 - PIPE VOLUME CALCULATOR**

**CLICK HERE TO CLEAR STEP 2 - PIPE VOLUME CALCULATOR ENTRIES**

SCHEDULE 40 PIPE	NOMINAL PIPE SIZE	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
	GALLONS PER FOOT	0.016	0.028	0.045	0.078	0.106	0.175
	ENTER FEET OF PIPE						
	ENTER INCHES OF PIPE						
	PIPE VOLUME (GALLONS)						
	NOMINAL PIPE SIZE	2-1/2"	3"	4"	5"	6"	8"
	GALLONS PER FOOT	0.249	0.384	0.662	1.040	1.501	2.599
	ENTER FEET OF PIPE						
	ENTER INCHES OF PIPE						
	PIPE VOLUME (GALLONS)						

SCHEDULE 10 PIPE	NOMINAL PIPE SIZE	2"	2-1/2"	3"	4"	5"	6"	8"
	GALLONS PER FOOT	0.190	0.284	0.434	0.741	1.098	1.649	2.777
	ENTER FEET OF PIPE							
	ENTER INCHES OF PIPE							
	PIPE VOLUME							

**TOTAL PIPE VOLUME IN GALLONS - TRANSFER TO STEP 3**

**STEP 3 - INDIVIDUAL RISER INFORMATION**

**CLICK HERE TO CLEAR STEP 3 - INDIVIDUAL RISER INFORMATION**

RISER #	PIPE VOLUME (GALLONS)	SUPERVISORY PRESSURE (PSIG)	NUMBER OF RISERS IN SYSTEM =	
1			CAPACITY IN GALLONS OF SINGLE LARGEST RISER =	
2			CAPACITY IN GALLONS OF ALL RISERS =	
3			HIGHEST VALUE OF SUPERVISORY PRESSURE =	
4				
5				

**!! IMPORTANT !!** MAXIMUM GALLON VALUES ARE BASED ON SPRINKLER PIPING LEAKAGE NOT EXCEEDING NFPA 13 ACCEPTANCE REQUIREMENT OF MAXIMUM 1-1/2 PSIG IN 24 HOURS STARTING AT 40 PSIG. UNITED FIRE SYSTEMS RECOMMENDS PERFORMING LEAKAGE TEST, AND CORRECTING EXCESS LEAKAGE, BEFORE DESIGNING, INSTALLING, AND COMMISSIONING A NITROGEN-PAC™ SYSTEM.

