

Hand Hose Line Stationary Dry Chemical System

Features

- Fast knockdown of fires
- Sizes to match various hazards
- Unique fluidization techniques
- Extensive full-scale testing
- Proven reputation

Application

The ANSUL® Hand Hose Line Stationary Dry Chemical System is manufactured to provide manual fire fighting protection for hazardous areas such as offshore platforms, loading racks, fuel storage areas, and heavy manufacturing operations.

Description

ANSUL Hose Line Stationary Dry Chemical Systems combine the flexibility of a hand portable fire extinguisher with the larger fire-killing power necessary to combat large Class B (flammable liquids and gases) and Class C (electrical) fires. The ANSUL system is designed for operation by only one trained person, and is ideally suited for protection of extra hazardous areas where large fires must be extinguished before they have the chance to spread or increase in size. The ANSUL system offers the quick response, large extinguishing agent capacity, longer discharge time, and increased flow rates necessary to combat these large fires. In short, they protect areas which hand portable and wheeled fire extinguishers cannot.

These extinguishers are available with three types of ANSUL dry chemical extinguishing agents, giving them the versatility to protect many types of fire hazards. Standard units are manufactured with a skid base; special units are available for truck mounting.

General Specifications

DRY CHEMICAL CONTAINER

The dry chemical tank shall be of welded steel construction, with two elliptical dished heads with a welded circumferential seam. The actual capacity of the dry chemical container shall be as shown in the chart. (Specifying engineer to specify size. See chart.)

The dry chemical tank shall be designed and constructed according to the latest ASME unfired pressure vessel code for a working pressure of 250 psi (17 bar). It shall be stamped with the appropriate ASME code symbol.

The dry chemical tank shall be fitted with a gas tube arrangement to adequately fluidize the dry chemical, pressurize the dry chemical tank, and maintain a nominally constant pressure in the tank during discharge. The gas tube shall be provided with a check valve to prevent any possibility of dry chemical backup. The dry chemical tank shall be fitted with one 4 in. (101 mm) ID (inside diameter) fill opening in the top head, and shall be

provided with a discharge outlet suitable for the dry chemical hand hose lines and/or turret supplied.

FILL CAP

The dry chemical tank shall be provided with one fill cap. The cap shall consist of a cast aluminum body equipped with two handles extending from opposite sides of the cap to permit hand tightening so that it is free from leakage under normal operating pressure without the use of tools. The cap shall be equipped with a 5/32 in. (4 mm) thick rubber gasket inserted in a machined recess.

A safety vent hole shall be located in the fill cap so that the cap is capable of pressure venting while at least 3 1/2 threads are still engaged.

PRESSURE RELIEF VALVE

An approved ASME pressure relief valve shall be furnished to prevent the pressure in the tank from exceeding 10% of the maximum working pressure of the tank.

DRY CHEMICAL

The dry chemical for this system shall be formulated and produced by the system manufacturer and meet the requirements for the system manufacturer; Underwriters Laboratories, Incorporated; and Factory Mutual Laboratories. The dry chemical shall be furnished in metal or plastic pails with water-tight replaceable covers.

NITROGEN CYLINDERS

The nitrogen cylinder(s) provided for the system shall meet D.O.T. Code 3AA2400.

NITROGEN CYLINDER VALVE

Each nitrogen cylinder shall be provided with an Underwriters Laboratories Listed Quick Opening valve, having the following capabilities:

1. To be opened manually from a remote location by means of a pneumatic actuator.
2. To be opened manually at the valve by:
 - a. Quick-Opening lever action
 - b. Conventional hand wheel action
3. All three opening methods shall be independent and shall not interfere with each other.
4. The valve shall be provided with an integral safety relief set at 3600-4000 psi (248-275 bar) to relieve at 4000 psi maximum at 160 °F (71.1 °C).
5. The valve shall be manually closed by conventional hand-wheel action.
6. The valve shall be provided with an integral pressure gauge reading from 0 to 4000 psi (0-275 bar), marked to show the operable range of pressure.
7. The valve shall be constructed of highly corrosion resistant materials throughout.

All moving parts subject to wear shall be of hardened stainless steel and/or beryllium copper alloy.

General Specifications (Continued)

NITROGEN CYLINDER STORAGE

The nitrogen cylinder(s) shall be mounted in a vertical or horizontal position. The method of mounting shall be designed to permit easy access of operation and replacement of the cylinder.

NITROGEN PRESSURE REGULATORS

The nitrogen supply shall be directed through one regulator per nitrogen cylinder. The regulator shall be designed for an inlet pressure of 3000 psi (207 bar) and shall be set to deliver nitrogen at a reduced pressure of 210 to 230 psi (14.5-15.9 bar). Each individual regulator shall have a spring loaded pressure relief valve. They shall be connected to the nitrogen cylinder by 3/8 in. (10 mm) ID wire or polyester braid hose.

VALVING AND PIPING

The valving and piping shall be installed so that for normal operation, the nitrogen from the cylinder passes through the regulators and piping into the agent tank to adequately fluidize and pressurize the tank. The flow of agent from the tank to the distribution system shall be controlled by a normally open ball type manual valve.

Valving and piping shall be furnished so that after the extinguisher is used, the hose lines and/or turret may be cleared of agent by venting the pressure from the top of the tank through the hose lines and/or turret.

Piping and valving shall also be arranged so that pressure direct from the nitrogen cylinders may be directed through the hose lines and/or turret, if desired, for maintenance operations.

DISTRIBUTION OUTLET PIPING

The dry chemical distribution outlet to the hose lines and/or turret shall be assembled with 300 pound fittings, non-ferrous valves, stainless steel internal parts acceptable, and nonferrous hose adaptors. The assembly shall be painted with one coat of primer and a minimum of one coat of red epoxy finish coating.

DRY CHEMICAL HOSE

Each length of hose shall be horizontally braided with the maximum inside diameter expansion of 0.010 in. (0.25 mm) under a pressure of 200 psi (13.8 bar). The twist shall not exceed 10 1/2 degrees in either direction under the applicable UL test. The outside cover stock shall be pin pricked to permit diffusion of gases with four rows of holes for the entire length equally spaced on the circumference and 1 in. (2.54 cm) apart parallel to the axis. Holes shall be 1/32 in. (0.79 mm) deeper than the cover. A minimum of 25 effective holes per foot (0.3 m) is required. The dry chemical hose shall be connected between the distribution piping from the dry chemical tank and nozzle for control and direction of the dry chemical stream.

HAND HOSE LINE NOZZLES

The dry chemical nozzles supplied for the hose line shall consist of a cast brass body and handle, with integral components of suitable nonferrous metal or stainless steel.

The operating handle shall move in two positions, opened and closed. The handle shall control the movement of a spherically shaped plug mounted to revolve about an axis perpendicular to the longitudinal axis of the nozzle so that the dry chemical stream may be selectively shut off or permitted to discharge in a straight line through the plug and nozzle. The bore of the plug and nozzle shall be of the same diameter.

The dry chemical stream shall be shaped by discharge through a nozzle chamber provided with the tip having a plurality of orifices arranged to produce individual streams of dry chemical for impingement against the inner wall of the chamber so that they are directed forward to merge and combine, outside the nozzle, to form a stream of dry chemical of high density and moderate range.

HOSE REEL

The metal reel, manual rewind or optional electric rewind, shall be specifically designed for use with the dry chemical hose. The hose reel shall be capable of containing all the hose specified.

ACTUATION

A pneumatic actuation system utilizing a nitrogen filled cartridge shall be provided to open the nitrogen cylinders and operate a selector valve or turret, when provided, at the tank or remote location and energize the extinguishing system to the nozzles.

PAINT FINISH

The final assembled unit is protected from corrosion by special surface treatments, including sandblasting, primer, and red epoxy coating.

RELIABILITY

The dry chemical suppression system shall be designed and manufactured by a company having at least 15 years experience in the design and manufacture of large capacity dry chemical hand hose line fire suppression equipment.

AUXILIARY EQUIPMENT

The following auxiliary devices shall be provided with the fire suppression system (specifying engineer to select appropriate devices):

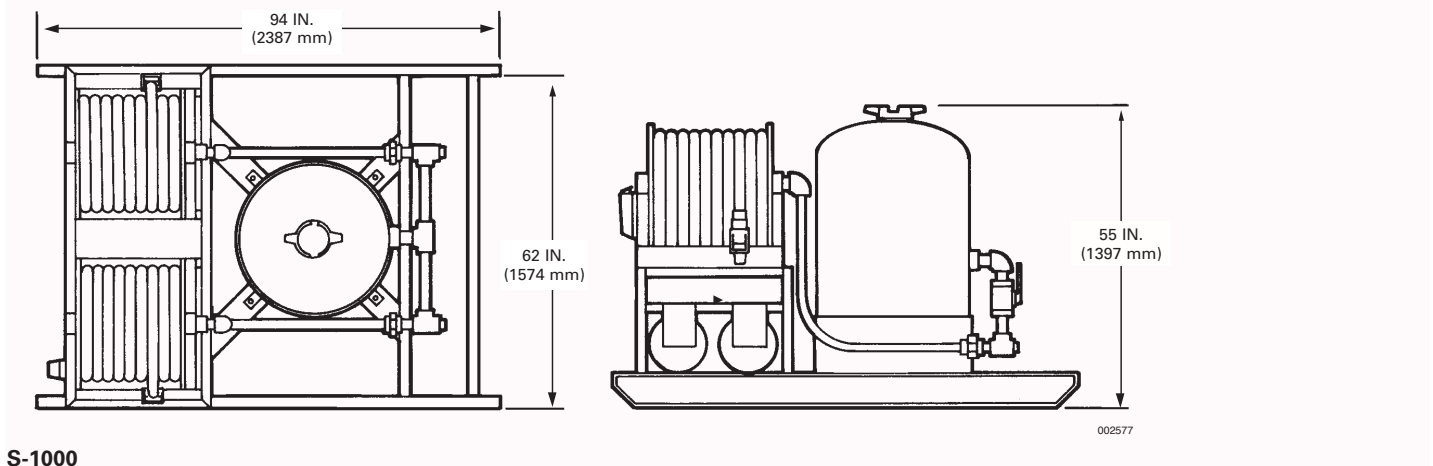
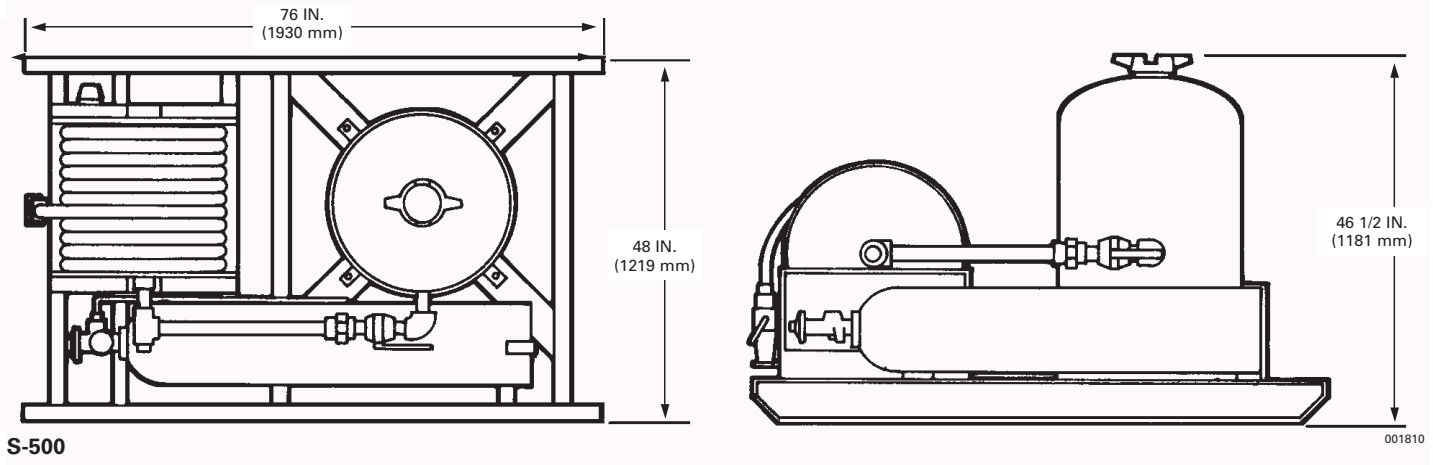
Selector Valve – A pneumatic selector valve manifold shall be provided to direct the flow of dry chemical to each individual hose line station. Actuation of the valve desired shall be simultaneous with activation of the suppression system from the pneumatic actuator located at the hose station selected for use.

Turret – The dry chemical turret shall be pneumatically triggered from a location on or near the handle. The discharge nozzle shall be capable of providing a straight stream of dry chemical with a discharge rate and range consistent with the system's size.

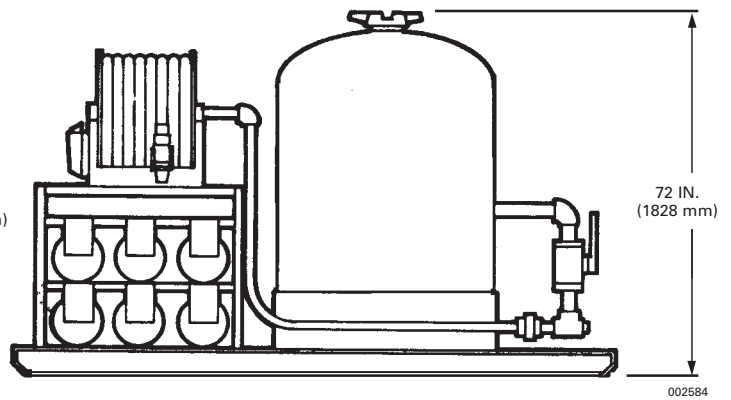
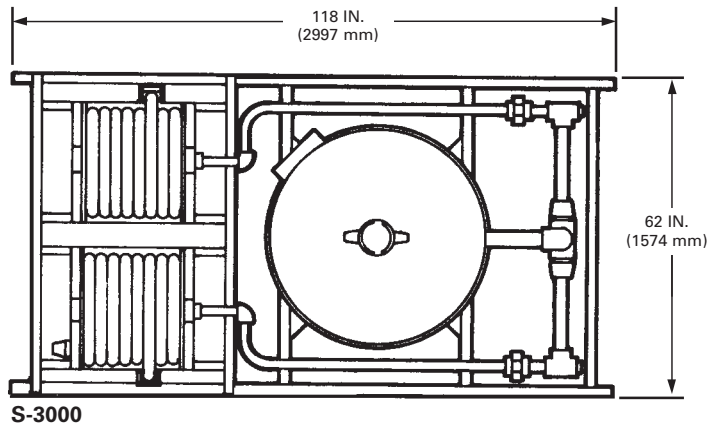
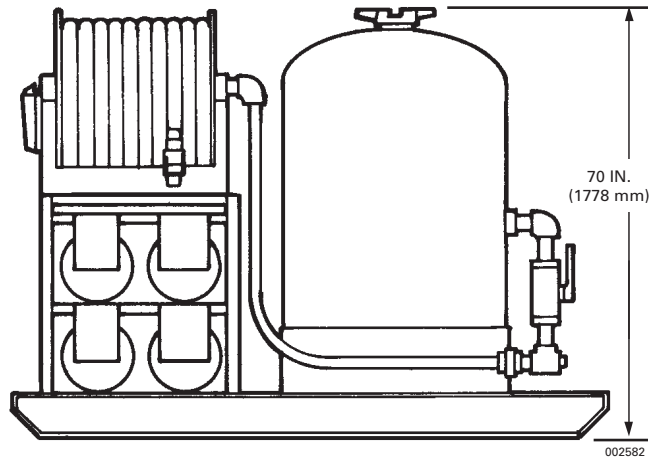
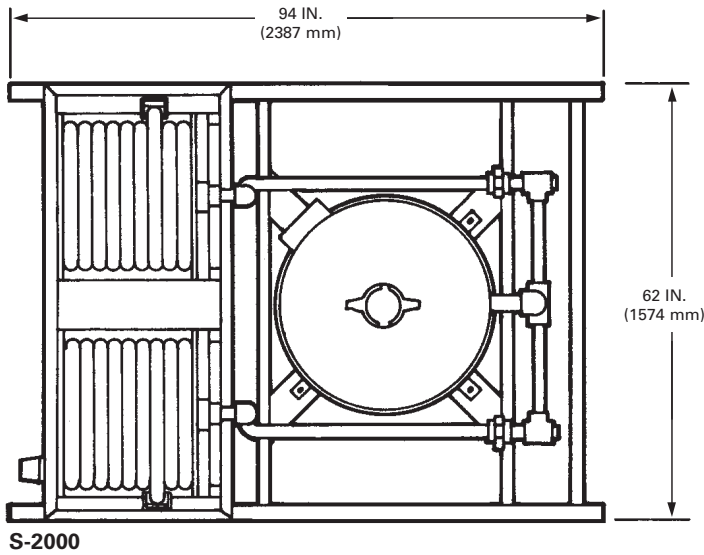
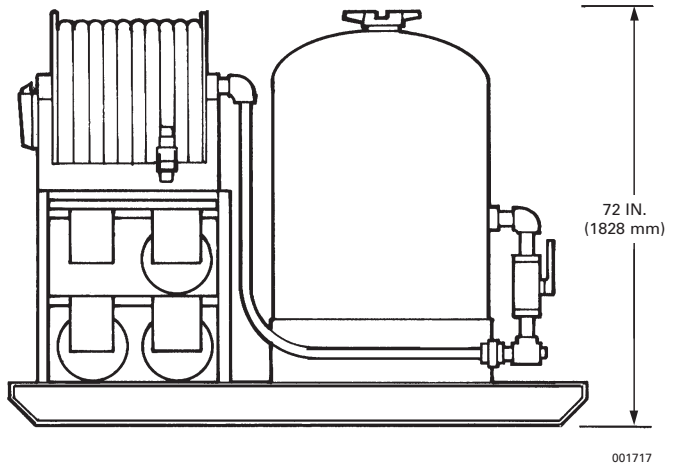
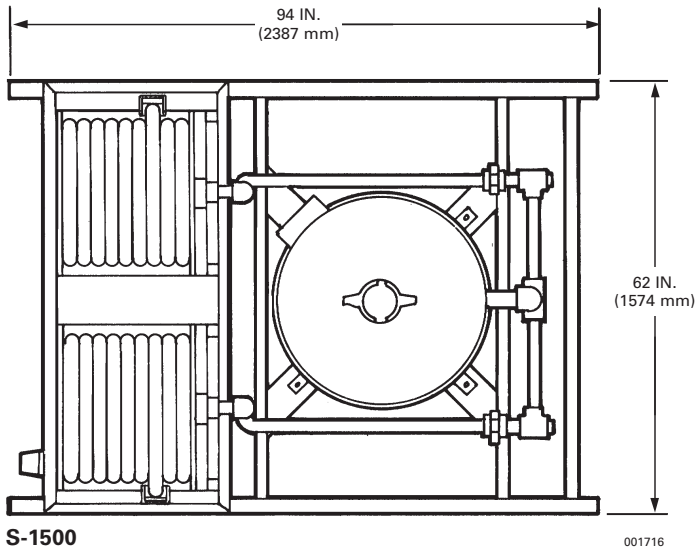
Skid – The skid shall be steel, welded construction, sized and reinforced to provide the required strength of the intended application, protected from corrosion by special surface treatments sandblasting, primer and epoxy red coatings.

Stationary Skid Unit Capacities

Model	Agent / Charge	Hose Reel(s)	Hose / Length	Nozzle	Nominal Flow (sec)		Range		Charged Weight	
					lb	(kg)	ft	(m)	lb	(kg)
S-500	Purple-K/ 450 lb	1	1 in. x 150 ft (45.7 m)	HF-70	7.0	(3.2)	35	(10.7)	1275	(578.3)
S-500	Purple-K/ 450 lb	1	1 in. x 150 ft (45.7 m)	LR-44	7.0	(3.2)	40	(12.2)	1275	(578.3)
S-500	Purple-K/ 450 lb	1	3/4 in. x 150 ft (45.7 m)	HF-35	3.5	(1.6)	25	(7.6)	1275	(578.3)
S-500	Purple-K/ 450 lb	1	3/4 in. x 150 ft (45.7 m)	LR-36	3.5	(1.6)	30	(9.1)	1275	(578.3)
S-500	PLUS-FIFTY C / 500 lb	1	1 in. x 150 ft (45.7 m)	HF-70	7.0	(3.2)	35	(10.7)	1300	(589.7)
S-500	PLUS-FIFTY C / 500 lb	1	1 in. x 150 ft (45.7 m)	LR-44	7.0	(3.2)	40	(12.2)	1300	(589.7)
S-500	PLUS-FIFTY C / 500 lb	1	3/4 in. x 150 ft (45.7 m)	HF-35	3.5	(1.6)	25	(7.6)	1300	(589.7)
S-500	PLUS-FIFTY C / 500 lb	1	3/4 in. x 150 ft (45.7 m)	LR-36	3.5	(1.6)	30	(9.1)	1300	(589.7)
S-1000	Purple-K/ 900 lb	2	1 in. x 150 ft (45.7 m)	HF-70	7.0	(3.2)	35	(10.7)	2025	(918.5)
S-1000	Purple-K/ 900 lb	2	1 in. x 150 ft (45.7 m)	LR-44	7.0	(3.2)	40	(12.2)	2025	(918.5)
S-1000	PLUS-FIFTY C / 1000 lb	2	1 in. x 150 ft (45.7 m)	HF-70	7.0	(3.2)	35	(10.7)	2125	(963.9)
S-1000	PLUS-FIFTY C / 1000 lb	2	1 in. x 150 ft (45.7 m)	LR-44	7.0	(3.2)	40	(12.2)	2125	(963.9)
S-1500	Purple-K/ 1350 lb	2	1 in. x 150 ft (45.7 m)	HF-70	7.0	(3.2)	35	(10.7)	2435	(1104.5)
S-1500	Purple-K/ 1350 lb	2	1 in. x 150 ft (45.7 m)	LR-44	7.0	(3.2)	40	(12.2)	2435	(1104.5)
S-1500	PLUS-FIFTY C / 1500 lb	2	1 in. x 150 ft (45.7 m)	HF-70	7.0	(3.2)	35	(10.7)	2585	(1172.5)
S-1500	PLUS-FIFTY C / 1500 lb	2	1 in. x 150 ft (45.7 m)	LR-44	7.0	(3.2)	40	(12.2)	2585	(1172.5)
S-2000	Purple-K/ 1800 lb	2	1 in. x 150 ft (45.7 m)	HF-70	7.0	(3.2)	35	(10.7)	3250	(1474.2)
S-2000	Purple-K/ 1800 lb	2	1 in. x 150 ft (45.7 m)	LR-44	7.0	(3.2)	40	(12.2)	3250	(1474.2)
S-2000	PLUS-FIFTY C / 2000 lb	2	1 in. x 150 ft (45.7 m)	HF-70	7.0	(3.2)	35	(10.7)	3450	(1564.9)
S-2000	PLUS-FIFTY C / 2000 lb	2	1 in. x 150 ft (45.7 m)	LR-44	7.0	(3.2)	40	(12.2)	3450	(1564.9)
S-3000	Purple-K/ 2700 lb	2	1 in. x 150 ft (45.7 m)	HF-70	7.0	(3.2)	35	(10.7)	4340	(1968.6)
S-3000	Purple-K/ 2700 lb	2	1 in. x 150 ft (45.7 m)	LR-44	7.0	(3.2)	40	(12.2)	4340	(1968.6)
S-3000	PLUS-FIFTY C / 3000 lb	2	1 in. x 150 ft (45.7 m)	HF-70	7.0	(3.2)	35	(10.7)	4640	(2104.7)
S-3000	PLUS-FIFTY C / 3000 lb	2	1 in. x 150 ft (45.7 m)	LR-44	7.0	(3.2)	40	(12.2)	4640	(2104.7)



Stationary Skid Unit Capacities (Continued)



Safety Data Sheets (SDS) are available at www.ansul.com

Note: The converted values in this document are provided for dimensional reference only and do not reflect an actual measurement.

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