Kidde Fire Systems
ADS™ Cylinder Component Datasheet

900 lb. (368 L) Cylinder and Valve Assemblies with Fluoro-K™ Fire Suppression Clean Agent

Effective: November 2023
K-45-904 Rev AB

FEATURES

- **Well Suited for Complicated Pipe Networks and Large Area Coverage with Minimal Room for Cylinder Storage**
- **3-Inch Valve Outlet**
- **455 lb. to 910 lb. Fill Capacity**
- **Agent Cylinder Liquid Level Indicator**
- **Uses one or two Nitrogen Drivers**
- **UL Listed, File Number 4674**
- **FM Approved**
- **For RoHS Compliance, See the Individual Component Datasheets**

DESCRIPTION

Kidde Fire Systems Advanced Delivery Systems (ADS™ system) are Underwriters Laboratory (UL) listed and Factory Mutual (FM) approved. These systems are designed for total flooding in accordance with NFPA 2001, *Standard on Clean Agent Extinguishing Systems*. These systems have been tested to UL 2166, *Standard for Safety; Standard for Halocarbon Clean Agent Extinguishing System Units*, and Factory Mutual 5600, *Examination Standard for Clean Agent Extinguishing Systems*.

The ADS system uses a unique method for propelling the Fluoro-K™ Fire Suppression Clean Agent (herein referred to as “Agent”) from the storage cylinder, through the piping system and out of the discharge nozzles. Nitrogen gas pressure from a separate storage cylinder is introduced into the vapor space of the Agent Cylinder at a controlled rate. This nitrogen pressure acts to propel the Agent through the pipe at a higher flow rate. It can also propel the agent farther through the pipe network allowing for the placement of storage cylinders remotely from the protected hazard.

The ADS system is extremely well-suited to applications involving remote agent storage and situations which limit the maximum pipe size to be used. The system is capable of using smaller pipe sizes to discharge large quantities of Agent.

OPERATION

When a control head actuates the nitrogen cylinder discharge valve(s), the nitrogen pressure actuates the agent cylinder discharge valve and pressurizes the cylinder. Agent is then propelled by its own vapor pressure and the nitrogen pressure through the discharge valve and into the system pipe network. The agent travels through the system pipe network at a high flow rate.

OPERATING RANGE LIMITATIONS

- The operating temperature range for all components used in the ADS system is 32° to 130°F (0° to 54°C)
- The agent cylinder operating temperature must be between 60° to 80°F (16° to 27°C) for unbalanced pipe network systems.

INSTALLATION

The ADS system installation is based on the requirements of NFPA 2001, *Standard on Clean Agent Extinguishing Systems*, Current Edition.

ASSEMBLY:

Both the nitrogen drivers and agent storage cylinders are to be installed in the vertical position only. The nitrogen driver is located to the immediate right apart from the agent cylinder. The nitrogen driver cylinder is connected to the agent cylinder by using the nitrogen transfer components. The nitrogen transfer components used depends upon whether the system uses one or two nitrogen drivers. The 3/4-in. transfer fitting connects into the orifice fitting. The orifice fitting is a custom fitting that is designed to regulate the nitrogen pressure flow required for the specific system. The orifice fitting then connects into the 3/4-in. check diffuser assembly to diffuse the nitrogen in a horizontal pattern.

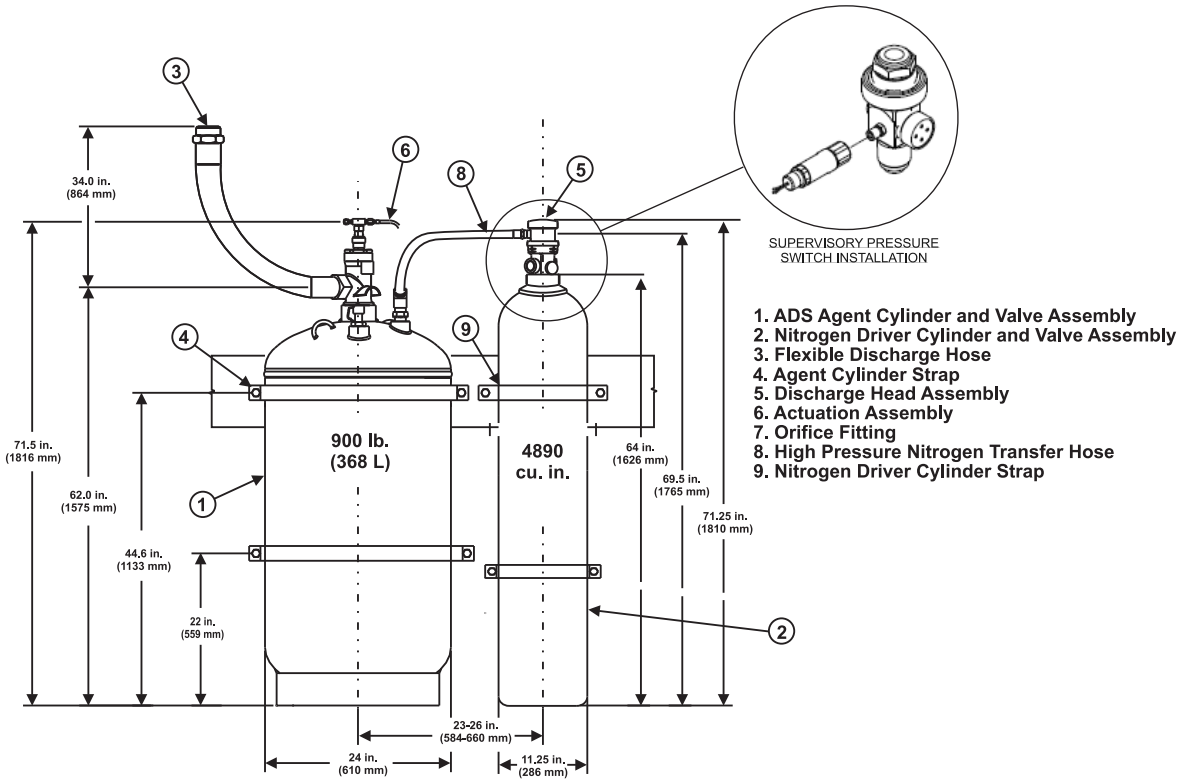


Figure 1. Single Cylinder Installation Dimensions, 900 lb. (368 L) Cylinder

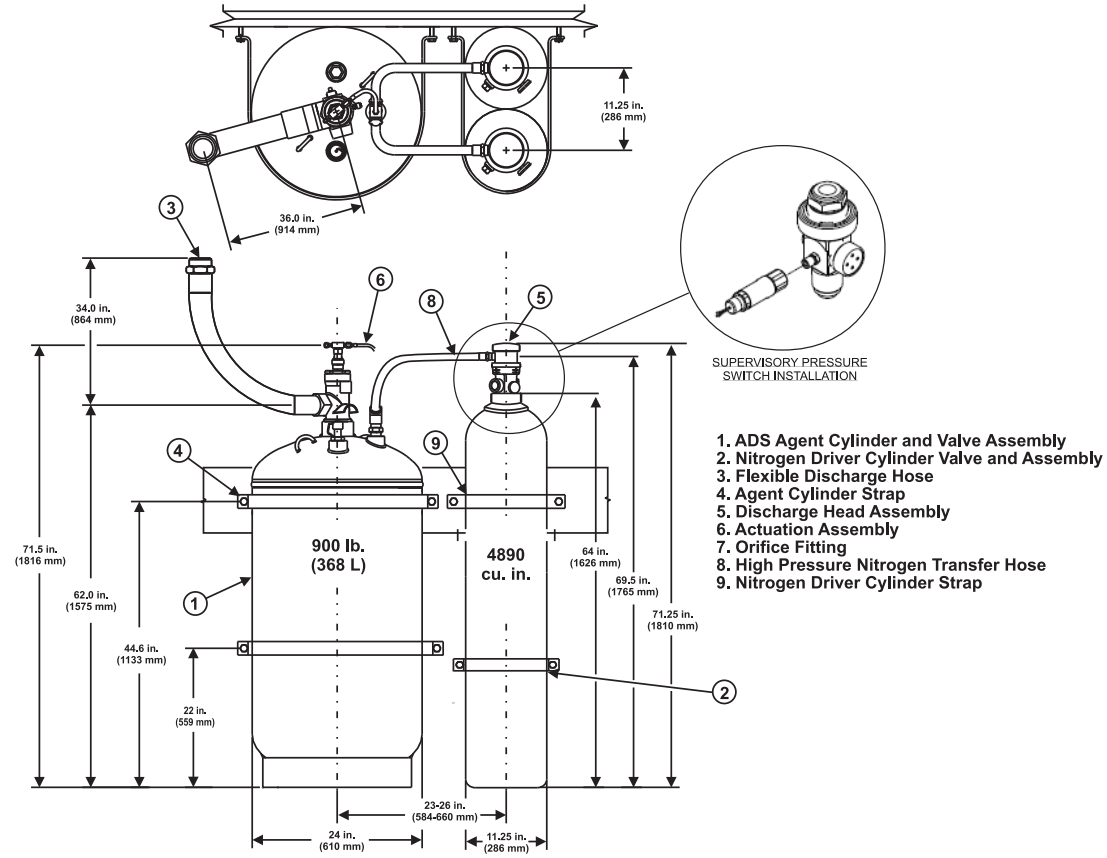


Figure 2. Dual Driver Installation, Vertical Mounting for 900 lb. (368 L) Systems

ACTUATION:

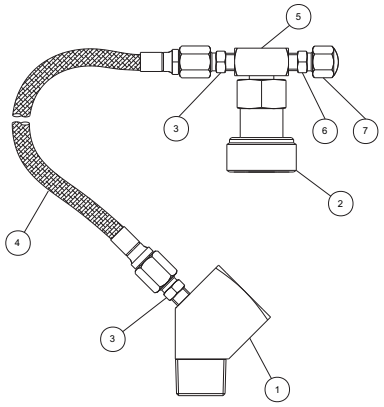
When using the agent, the ADS system can use one or two drivers with the 900 lb. (368 L) agent cylinder. Use the flow calculation software to determine which setup is applicable for the design.

Single Driver Systems

The control head is attached to the nitrogen driver by means of electric, cable, lever, or pneumatic devices. The actuating of the agent cylinder is done upon transfer of nitrogen from the driver cylinder using the actuation assembly kit (P/N 06-129882-001).

Assembly includes:

- Nitrogen transfer fitting
- 1/8-in. flex loop
- 1/8-in. flare fitting
- 1/8-in. branch tee
- 1/8-in. Schrader fitting and cap
- Pressure operated control head



Single Driver Actuation Assembly Ordering Information

06-129882-001 Contains:

Item No.	Qty.	P/N	Description
1	1	06-236124-001	Nitrogen Transfer Fitting
2	1	82-878737-000	Pressure Operated Control Head (Pneumatic Actuator)
3	1	06-118191-001	Fitting Flared 1/8-in. x 1/4-in.
4	1	06-118193-001	3/16-in. Flexible Actuation Hose
5	1	06-118192-001	1/8-in. Branch Tee
6	1	WK-263303-000	1/8-in. Schrader Valve
7	1	WK-263304-000	1/8-in. Schrader Valve Cap

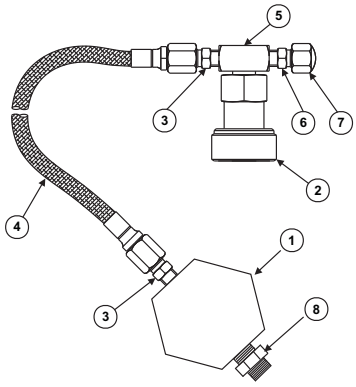
For more information, refer to datasheet K-85-103

Dual Driver Systems

The control head is attached to the primary nitrogen driver by means of electric, cable, lever or pneumatic devices. The actuating of the second nitrogen driver and agent cylinder is done upon transfer of nitrogen from the primary driver cylinder using the actuation assembly kit (P/N 06-129985-001).

Assembly includes:

- Nitrogen “Y” Transfer Fitting
- 1/8-in. Flex Loop
- 1/8-in. Flare Fitting
- 1/8-in. Branch Tee
- 1/8-in. Schrader Fitting and Cap
- Pressure Operated Control Head
- 3/4-in. Nipple (Hex)



Dual Driver Actuation Assembly Ordering Information

06-129985-001 Contains:

Item No.	Qty.	Part Number	Description
1	1	06-236260-001	Nitrogen Transfer "Y" Fitting
2	1	82-878737-000	Pressure Operated Control Head (Pneumatic Actuator)
3	2	06-118191-001	Fitting Flared 1/8" x 1/4"
4	1	06-118193-001	3/16" Flexible Actuation Hose
5	1	06-118192-001	1/8" Branch Tee
6	1	WK-263303-000	1/8" Schrader Valve
7	1	WK-263304-000	1/8" Schrader Valve Cap
8	1	06-118330-001	3/4" Nipple

For more information, refer to datasheet K-85-110

MAINTENANCE

According to NFPA standards, the following inspection and/or maintenance procedure must be scheduled as listed below and performed upon the occurrence of any event, which might affect the reliability of the system. For more information, see the corresponding DIOM manual. Perform preventive maintenance per the following table:

Schedule	Requirement
Weekly	Check nitrogen cylinder pressure
Monthly	Inspect hazard area system components
Semi-Annually	Test pressure switches
	Test electric control heads
	Check agent cylinder weights
Every 2 Years	Blow out distribution piping
Every 5 Years	Agent and nitrogen cylinder and flexible hose hydrostatic pressure test and/or inspection
Every 15 Years	Rebuild Agent Cylinder Valves

RECONDITIONING

After a system has been discharged, contact your local authorized Kidde Fire Systems Distributor to recondition the system. Please reference the corresponding DIOM manual for the appropriate reconditioning kit.

SPECIFICATIONS

Element	Agent Storage Container (P/N: 45-500900-901)		Nitrogen Driver (P/N: 85-504890-001)	
	Imperial	Metric	Imperial	Metric
Fill Range	455 to 910 lb.	207 to 412 kg	Factory Filled to 1800 PSIG	Factory Filled to124 bar
Height of Discharge Port (Center)*	62.0 in.	157.5 cm	69 in.	1753 mm
Diameter	24.0 in.	61.0 cm	11.25 in.	286 mm
Internal Volume	13.0 cu. ft.	0.37 cu. m	4880 cu. in.	0.0801 cu. m
Empty Weight	505.0 lb.	229.0 kg	270.0 lb.	122.5 kg
Temperature Range	32°F to 130°F	0°C to 54°C	32°F to 130°F	0°C to 54°

*For Nitrogen Drivers, the center is the top of the valve/cylinder assembly.

Note: The Nitrogen used is A-A-59155 Grade A, Type 1.

ORDERING INFORMATION FOR AGENT CYLINDER AND DRIVERS

Part Number	Description
45-500901-901	900 lb. (368 L) Agent Storage Container
85-504890-001*	4890 cu. in. Nitrogen Driver Cylinder
85-111540-001	Supervisory Pressure Switch
85-111540-100	ATEX Supervisory Pressure Switch
*Note: Use the flow calculation software to determine the number of drivers needed for each 900 lb. agent cylinder.	

MANUALS

Manual	P/N
Kidde Fire Systems ADS™ Fire Suppression System for use with Fluoroketone Fire Suppression Agents Design, Installation, Operation and Maintenance Manual	06-237256-001
Kidde Fire Systems ADS™ Fire Suppression System Marine Series for use with Fluoroketone Fire Suppression Agents Design, Installation, Operation and Maintenance Manual	06-237257-001

EXPORT INFORMATION (USA)
Jurisdiction: EAR
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