

# Kidde WHDR™ Wet Chemical Cylinder Assemblies



A UTC Fire & Security Company

Effective: June 2010  
K-87-001

## FEATURES

- *For use in WHDR Commercial Cooking Fire Suppression Systems*
- *Flexible System Configurations*
- *Five Cylinder Sizes to Suit any Application*
- *Factory Filled and Pressurized*
- *No Additional Hardware Required to Pressurize or Regulate Flow*
- *Rugged, Nickel-Plated Brass Valve*
- *Durable, Easy-to-Clean, Corrosion-Resistant White Powder Coat Finish*
- *Easy-to-Read Pressure Gauge for Instant Verification of System Readiness*
- *DOT/TC Stamped*
- *UL Listed to Standard UL 300*
- *ULC Listed to Standard ULC/ORD-C1254.6*
- *ABS Type Approved and DNV Type Approved for Marine Galleys to ISO Standard 15371*
- *System Operating Temperature Range from 0°F to 120°F (-18°C to 49°C)*

## DESCRIPTION

The WHDR Series cylinders are used in Kidde pre-engineered wet chemical fire suppression systems for protection of ventilation equipment and appliances associated with commercial cooking operations. The cylinders are factory-filled with Kidde APC wet chemical agent and pressurized with nitrogen to 175 psig at 70°F (1207 KPa at 21°C). Kidde APC wet chemical agent provides fast, efficient fire suppression, surface cooling, and prevents re-ignition of fire.

WHDR series cylinders are available in 4 capacities and 5 different sizes to suit a variety of commercial cooking fire protection applications (see Table 1). All cylinders conform to DOT and TC specifications.

Kidde APC agent is discharged through the WHDR cylinder valve, a brass-alloy, nickel-plated forging, trusted worldwide for over 30 years. The valve has a pressure gauge to facilitate quick inspection and a 212°F (100°C) fusible plug for safety relief in the event of over-pressurization due to heating.

WHDR series cylinders are pneumatically actuated via a System Valve Actuator (SVA), using either the XV™ Control System (P/N 87-120099-001) or KRS-50 Control Box (P/N 87-120010-001). Kidde WHDR systems have a listed operating temperature range of 0° F to 120°F (-18°C to 49°C).

All WHDR cylinders are shipped with an anti-recoil plate and valve protection plate for safety.



## TECHNICAL DATA

Table 1: Cylinder Assembly Information

| Model Number | Part Number   | Max. Flows | APC Wet Chemical Agent<br>Fill Qty Gallons (Liters) | Charged Weight<br>lb. (kg) |
|--------------|---------------|------------|-----------------------------------------------------|----------------------------|
| WHDR-125     | 87-120001-001 | 4          | 1.33 (5.03)                                         | 30 (13.6)                  |
| WHDR-260     | 87-120002-001 | 8          | 2.66 (10.07)                                        | 56 (25.4)                  |
| WHDR-400S    | 87-120003-001 | 12         | 4.0 (15.14)                                         | 77 (34.9)                  |
| WHDR-400M    | 87-120006-001 | 12         | 4.0 (15.14)                                         | 77 (34.9)                  |
| WHDR-600     | 87-120005-001 | 18         | 6.0 (22.71)                                         | 112 (50.8)                 |



Figure 1. Dimensions of Cylinder Assembly with SVA and XV Control System

Table 2: Dimensions of Cylinder Assembly with SVA and XV Control System

| Model     | Dimensions                       |                               |                            |                          |                          |                          |
|-----------|----------------------------------|-------------------------------|----------------------------|--------------------------|--------------------------|--------------------------|
|           | A<br>Center of<br>Discharge Port | B<br>Top of<br>Cylinder Valve | C<br>Center of<br>SVA Port | D<br>Top of SVA          | E<br>Overall Height      | F<br>Nominal<br>Diameter |
| WHDR-125  | 13-3/4 in.<br>(349 mm)           | 15-1/4 in.<br>(387 mm)        | 16-1/2 in.<br>(419 mm)     | 17 in.<br>(432 mm)       | 25-1/8 in.<br>(638 mm)   | 8 in.<br>(203 mm)        |
| WHDR-260  | 19-9/16 in.<br>(497 mm)          | 21 in.<br>(534 mm)            | 22-5/16 in.<br>(567 mm)    | 22-3/4 in.<br>(578 mm)   | 30-15/16 in.<br>(786 mm) | 9 in.<br>(230 mm)        |
| WHDR-400S | 17-1/2 in.<br>(445 mm)           | 19 in.<br>(483 mm)            | 20-1/4 in.<br>(514 mm)     | 20-3/4 in.<br>(527 mm)   | 28-7/8 in.<br>(733 mm)   | 12-1/4 in.<br>(311 mm)   |
| WHDR-400M | 22-15/16 in.<br>(583 mm)         | 24-7/16 in.<br>(621 mm)       | 25-11/16 in.<br>(652 mm)   | 26-3/16 in.<br>(665 mm)  | 34-5/16 in.<br>(872 mm)  | 10 in.<br>(254 mm)       |
| WHDR-600  | 33-11/16 in.<br>(856 mm)         | 35-3/16 in.<br>(894 mm)       | 36-7/16 in.<br>(929 mm)    | 36-15/16 in.<br>(938 mm) | 45-1/16 in.<br>(1145 mm) | 10 in.<br>(254 mm)       |

### SYSTEM VALVE ACTUATOR, P/N 87-120042-001

A System Valve Actuator (SVA) must be mounted to every WHDR cylinder valve assembly (see Figure 2). The SVA contains a pneumatically operated piston, which depresses the cylinder valve stem to open the valve and discharge the wet chemical. The SVA has ports for connection of actuation tubing or braided hose to the Kidde control system. Nitrogen from the control head flows through the actuation tubing, pressurizing the SVA(s), thereby extending the internal SVA piston. The piston is equipped with a spring-loaded plunger, which locks the piston in the actuated position, ensuring a complete cylinder discharge.

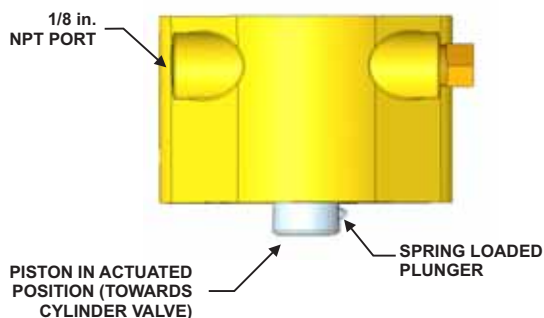


Figure 2. System Valve Actuator

### ANTI-RECOIL AND VALVE PROTECTION PLATES

Each Kidde WHDR cylinder is factory equipped with an anti-recoil plate and valve protection plate (see Figure 3). The anti-recoil plate is a safety feature attached to the valve outlet port. In the event of an accidental actuation of a cylinder that is not properly secured and connected to system piping, the anti-recoil plate will provide a controlled, safe discharge.

The valve protection plate is installed on the valve actuation port to prevent tampering or accidental depression of the valve actuation pin.

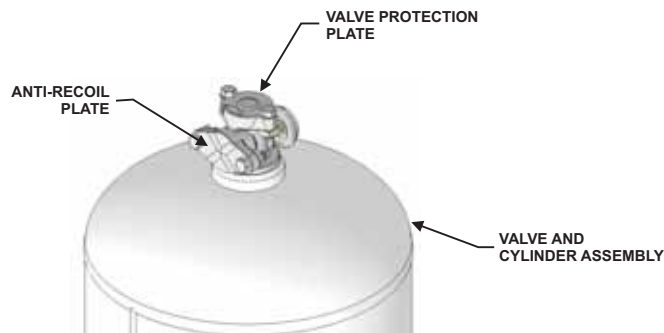


Figure 3. Anti-Recoil and Valve Protection Plates

### DISCHARGE ADAPTER KIT, P/N 83-844908-000

The Discharge Adapter (see Figure 4 and Figure 5) provides a means to connect agent distribution pipe to Kidde

WHDR cylinder and valve assemblies. The Discharge Adapter Kit (DAK) consists of a valve outlet adapter, o-ring and steel flange plate. The valve outlet adapter has a 3/4" NPT male thread and 1/2" NPT female thread for connection to system piping.

The Discharge Adapter can also be used as a recharge adapter to pressurize WHDR cylinders with nitrogen after re-filling with Kidde APC wet chemical.

A Discharge Adapter Kit is required for every cylinder and must be ordered separately.

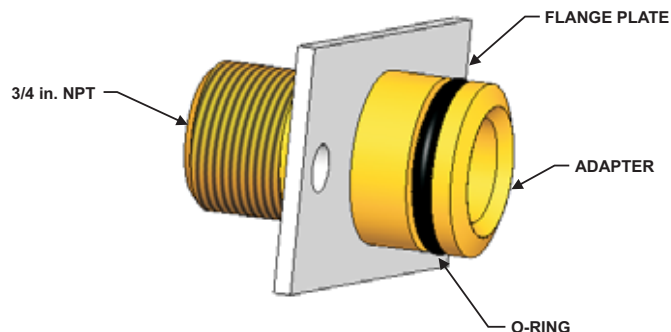


Figure 4. Discharge Adapter Kit

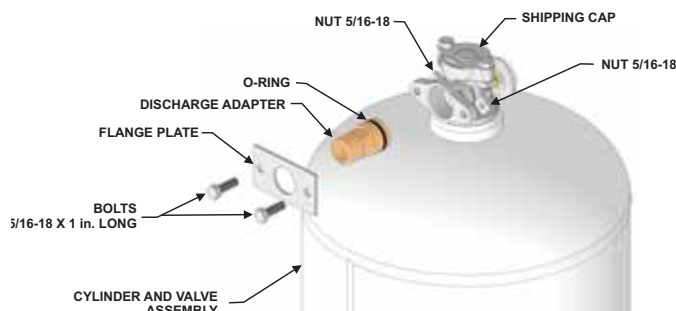


Figure 5. Discharge Adapter Kit Installation

### VENT PLUG, P/N 60-9196984-000

The Vent Plug (see Figure 6) is installed in the discharge piping near a WHDR cylinder to prevent pressure build up in the system piping, caused by heat, from rupturing the foil seals on the nozzles. The Vent Plug has a 1/2-inch NPT male thread, and must be installed in an upright or horizontal position, one per pipe network.

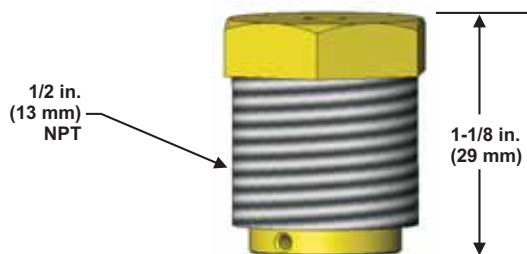


Figure 6. 1/2-inch Vent Plug, P/N 60-9196984-000

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## ORDERING INFORMATION

| Description                                                                         | Part Number    |
|-------------------------------------------------------------------------------------|----------------|
| WHDR-125 Cylinder and Valve Assembly (4 Flow)                                       | 87-120001-001  |
| WHDR-260 Cylinder and Valve Assembly (8 Flow)                                       | 87-120002-001  |
| WHDR-400S Cylinder and Valve Assembly (12 Flow)                                     | 87-120003-001  |
| WHDR-400M Cylinder and Valve Assembly (12 Flow)                                     | 87-120006-001  |
| WHDR-600 Cylinder and Valve Assembly (18 Flow)                                      | 87-120005-001  |
| Discharge Adapter Kit (one required for each cylinder)                              | 83-844908-000  |
| Vent Plug (one required for each set of piping)                                     | 60-9196984-000 |
| Pressure Gauge Shield                                                               | 83-131024-001  |
| WHDR-125 Wall Mount Bracket                                                         | 60-9197430-000 |
| WHDR-260 Wall Mount Bracket                                                         | 60-9197263-000 |
| WHDR-400S Wall Mount Bracket                                                        | 60-9197415-000 |
| WHDR-400M Wall Mount Bracket                                                        | 60-9197414-000 |
| WHDR-600 or 400M Shelf Bracket (wall or floor mount)                                | 87-100013-001  |
| Floor Mount Kit, for use with Shelf Bracket (on WHDR-600 and WHDR-400M)             | 87-100010-001  |
| System Valve Actuator (one required per cylinder, one ships with each control head) | 87-120042-001  |

## REFERENCE INFORMATION

WHDR Systems must be designed and installed in accordance with manual P/N 87-122000-001, *Kidde WHDR Wet Chemical Fire Suppression System Design, Installation, Operation, and Maintenance Manual*.

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