

Badger® Range Guard® Wet Chemical Cylinder Assemblies



Effective: August 2013
B-87-001

FEATURES

- *For use in Range Guard 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*
- *System Operating Temperature Range from 0°F to 120°F (-18°C to 49°C)*

DESCRIPTION

The Range Guard Series cylinders are used in Badger 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 Karbaloy™ wet chemical agent and pressurized with nitrogen to 175 psig at 70°F (1207 KPa at 21°C). Karbaloy wet chemical agent provides fast, efficient fire suppression, surface cooling, and prevents re-ignition of fire.

Range Guard 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.

Karbaloy agent is discharged through the Range Guard cylinder valve, a brass-alloy, nickel-plated forging, trusted worldwide for over 30 years. The valve includes an easy to read pressure gauge to facilitate quick inspection.

Range Guard series cylinders are pneumatically actuated via a System Valve Actuator (SVA), using either the Universal Control Head (P/N 60-120099-002) or A+ Control Box (P/N 60-120010-001). Range Guard systems have a listed operating temperature range of 0°F to 120°F (-18°C to 49°C).

All Range Guard 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	Karbaloy Wet Chemical Agent Fill Qty Gallons (Liters)	Charged Weight lb. (kg)
RG-1.25G	60-120001-001	4	1.33 (5.03)	30 (13.6)
RG-2.5G	60-120002-001	8	2.66 (10.07)	56 (25.4)
RG-4GS	60-120003-001	12	4.0 (15.14)	77 (34.9)
RG-4GM	60-120006-001	12	4.0 (15.14)	77 (34.9)
RG-6G	60-120005-001	18	6.0 (22.71)	112 (50.8)

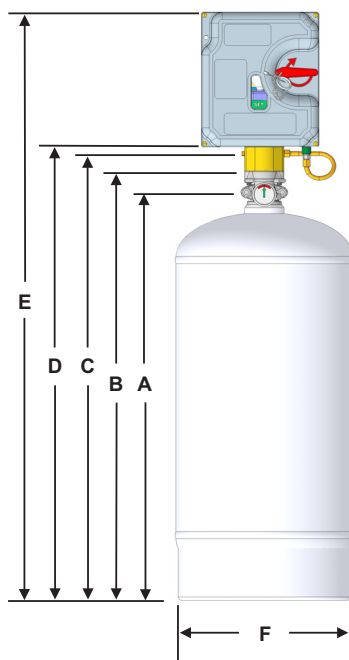


Figure 1. Dimensions of Cylinder Assembly with SVA and Universal Control Head

Table 2: Dimensions of Cylinder Assembly with SVA and Universal Control Head

Model	Dimensions					
	A Center of Discharge Port	B Top of Cylinder Valve	C Center of SVA Port	D Top of SVA	E Overall Height	F Nominal Diameter
RG-1.25G	13-3/4 in. (349 mm)	15-1/4 in. (387 mm)	16-1/2 in. (419 mm)	17 in. (432 mm)	25-1/8 in. (638 mm)	8 in. (203 mm)
RG-2.5G	19-9/16 in. (497 mm)	21 in. (534 mm)	22-5/16 in. (567 mm)	22-3/4 in. (578 mm)	30-15/16 in. (786 mm)	9 in. (230 mm)
RG-4GS	17-1/2 in. (445 mm)	19 in. (483 mm)	20-1/4 in. (514 mm)	20-3/4 in. (527 mm)	28-7/8 in. (733 mm)	12-1/4 in. (311 mm)
RG-4GM	22-15/16 in. (583 mm)	24-7/16 in. (621 mm)	25-11/16 in. (652 mm)	26-3/16 in. (665 mm)	34-5/16 in. (872 mm)	10 in. (254 mm)
RG-6G	33-11/16 in. (856 mm)	35-3/16 in. (894 mm)	36-7/16 in. (929 mm)	36-15/16 in. (938 mm)	45-1/16 in. (1145 mm)	10 in. (254 mm)

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

A System Valve Actuator (SVA) must be mounted to every Range Guard 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 Badger 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.

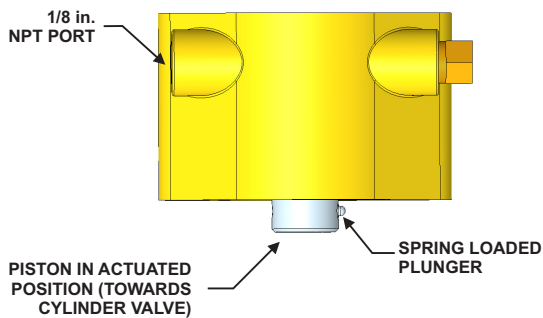


Figure 2. System Valve Actuator

ANTI-RECOIL AND VALVE PROTECTION PLATES

Each Range Guard 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.

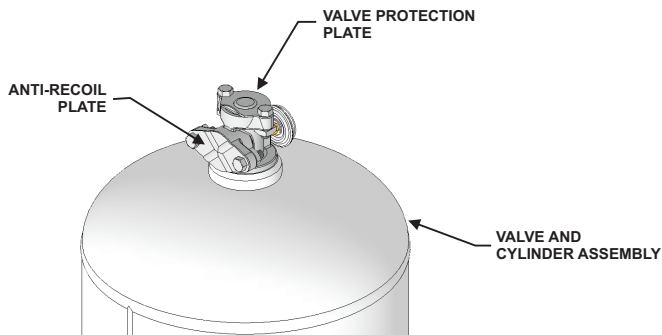


Figure 3. Anti-Recoil and Valve Protection Plates

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

Range Guard 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 Range Guard cylinders with nitrogen after re-filling with Karbaloy wet chemical.

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

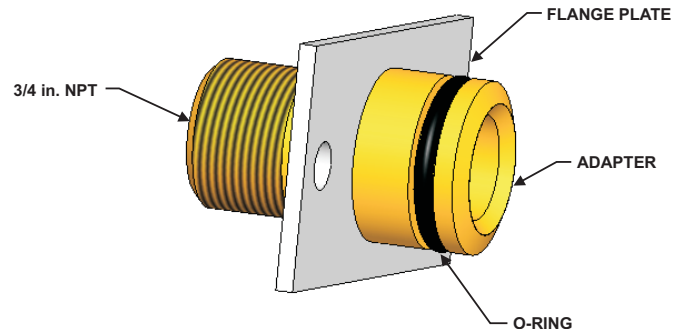


Figure 4. Discharge Adapter Kit

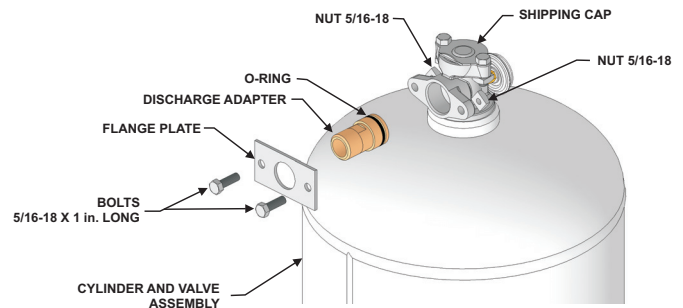


Figure 5. Discharge Adapter Kit Installation

VENT PLUG, P/N 60-9196984-000

The Vent Plug (see Figure 6) is installed in the discharge piping near a Range Guard 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.

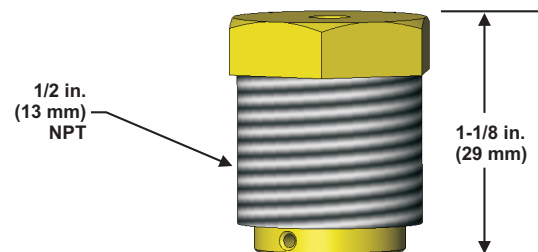


Figure 6. 1/2-inch Vent Plug, P/N 60-9196984-000

ORDERING INFORMATION

Description	Part Number
RG-1.25G Cylinder and Valve Assembly (4 Flow)	60-120001-001
RG-2.5G Cylinder and Valve Assembly (8 Flow)	60-120002-001
RG-4GS Cylinder and Valve Assembly (12 Flow)	60-120003-001
RG-4GM Cylinder and Valve Assembly (12 Flow)	60-120006-001
RG-6G Cylinder and Valve Assembly (18 Flow)	60-120005-001
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
RG-1.25G Wall Mount Bracket	60-9197430-000
RG-2.5G Wall Mount Bracket	60-9197263-000
RG-4GS Wall Mount Bracket	60-9197415-000
RG-4GM Wall Mount Bracket	60-9197414-000
RG-6G or RG-4GM Shelf Bracket (wall or floor mount)	87-100013-001
Floor Mount Kit, for use with Shelf Bracket (on RG-6G and RG-4GM)	87-100010-001
System Valve Actuator (one required per cylinder, one ships with each control head)	87-120042-001

REFERENCE INFORMATION

Range Guard Systems must be designed and installed in accordance with manual P/N 60-9127100-000, *Badger Range Guard Design, Installation, Operation, and Maintenance Manual*.

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Badger Fire Protection
944 Glenwood Station Lane
Suite 303
Charlottesville, VA 22901
Ph: (434) 964-3200
Toll Free: (800) 446-3857
www.badgerfire.com

Kidde Canada, Inc.
340 Four Valley Drive
Vaughan, Ontario L4K 5Z1
Ph: (905) 695-6060
Toll Free: (800) 565-1976
www.kiddecana.com