

## **Model WMA-1 Water Motor Alarm Hydraulically Operated Mechanical Sprinkler Alarm**

### **General Description**

The TYCO Model WMA-1 Water Motor Alarm is a hydraulically operated outdoor alarm designed for use with fire protection system waterflow detection valves. It is lightweight yet rugged, and it can be used in conjunction with alarm check, dry pipe, deluge, and preaction valves to sound a local alarm.

The Water Motor Alarm is suitable for mounting to any type of rigid wall and can accommodate a wall thickness range of 2 to 18 inches (50 to 450 mm). It is provided with a listed and approved TYCO Model WMA-1 Y-Strainer for use in the alarm line.

The Model WMA-1 utilizes a lightweight, impeller design that can produce a very high sound pressure level. The Gong, Gong Mount, and Water Motor Housing are fabricated from corrosion-resistant aluminum alloys. The polymer drive bearings do not require lubrication, and the Gong is closely fitted to the Gong Mount to eliminate the need for a separate cover.

The Model WMA-1 Water Motor Alarm is a redesignation for the Central Model F-2, Gem Model F630, and Star Model S450.

### **Technical Data**

**Approvals**  
UL and ULC Listed  
FM Approved  
LPCB Approved  
VdS Approved

**Gong Finish**  
Red or Aluminum

**Working Water Pressure Range**  
7 to 300 psi (0,5 to 20,7 bar)

**Nozzle K-factor**  
0.7 gpm/psi<sup>1/2</sup> (10,1 lpm/bar<sup>1/2</sup>)

**Y-Strainer**  
3/4 inch, cast iron, 20 mesh screen

**Trim Components**  
Galvanized steel nipples and cast iron fittings



**Item 8.** In order to minimize any wall staining that can be created by drain water, it is recommended that the drain piping from the Water Motor be galvanized steel, brass, or other suitable corrosion-resistant material.

**Item 9.** Drain water must be directed to prevent accidental damage to property or danger to persons when the alarm is operating or thereafter.

**Item 10.** The alarm line drain, at the waterflow detection valve, must be maintained at a minimum temperature of 40°F (4°C).

**Item 11.** A single Water Motor Alarm may be connected to the alarm lines from a maximum of three separate fire protection systems. However, when two or three alarm lines are interconnected, each alarm line must be provided with the following:

- a 3/4 inch Model WM-1 Y-Strainer (P/N 52-271-1001), and
- a 3/4 inch Check Valve with 3/32 inch orifice (P/N 52-403-1-005)

Strainers must be located at the alarm outlet in the trim of each of the waterflow detection valves. Check valves must be located between each strainer and the interconnection with the alarm line from another system.

## Installation

The TYCO Model WMA-1 Water Motor Alarm must be installed in accordance with this section.

**Step 1.** Mark the through-wall locations for the centerlines of the Sleeve and Drain Outlet. The Drain Outlet must be located at least 10 inches (250 mm) below the Sleeve per Figure 2.

**Step 2.** Make 1-1/2 inch (38 mm) diameter holes straight through the wall at both locations.

**Step 3.** Cut the non-threaded end of the Sleeve to a length equal to that of the wall thickness plus 0 to 1/8 inch (0 to 3 mm). Thread the cut end to 3/4 inch NPT per ANSI B1.20.1.

**Step 4.** Install the alarm line piping up to and including the Union half per Item 4, Figure 2.

**Note:** Use thread sealant sparingly on male threads only.

**Step 5.** Prior to initiating installation of the Water Motor Alarm, mount the Drain Trim (less the Wall Plate and 45° Elbow) as well as the balance of alarm line piping, including the other Union half, to the Water Motor.

**Step 10.** Hold the Gong Mount in position against the wall, engage the Coupling with the Drive Shaft, and then carefully thread the Striker Shaft Bearing onto the Sleeve. Securely tighten the Striker Shaft Bearing using a pair of tongue-and-groove pliers on the 1-1/2 inch (38 mm) hex end.

**Step 11.** Spin the Striker by hand and verify that it spins freely, without any sign of binding. If it does not, make the necessary adjustments.

**Step 12.** Install the Gong and securely tighten the Cap Nut. The identification sign lettering must be orientated horizontally.

**Step 13.** Test the Water Motor Alarm by opening the alarm test valve in the trim of the waterflow detection valve. The alarm must be clear and steady. If it is not, make the necessary adjustments.

### NOTICE

*Testing of the Water Motor Alarm may result in operation of other associated alarms. Consequently, notification must be given to the owner and the fire department, central control station, or other signal station to which the alarms are connected.*

NO.	DESCRIPTION	QTY.	REF.
1	Water Motor	1	92-630-1-012
2	Support Washer	1	NR
3	Drive Shaft Sleeve	1	NR
4	Drive Shaft	1	NR
5	Gong Mount	1	NR
6	Striker	1	See (a)
7	Gong	1	See (a)
8	Cap Nut	1	See (a)
(a) Red Gong Repair Kit includes items: 6, 7 (red), and 8 . . . 1 92-630-1-025			
(a) Aluminum Gong Repair Kit includes items: 6, 7 (alum.), and 8 . . . 1 92-630-2-025			

NR: Not Replaceable

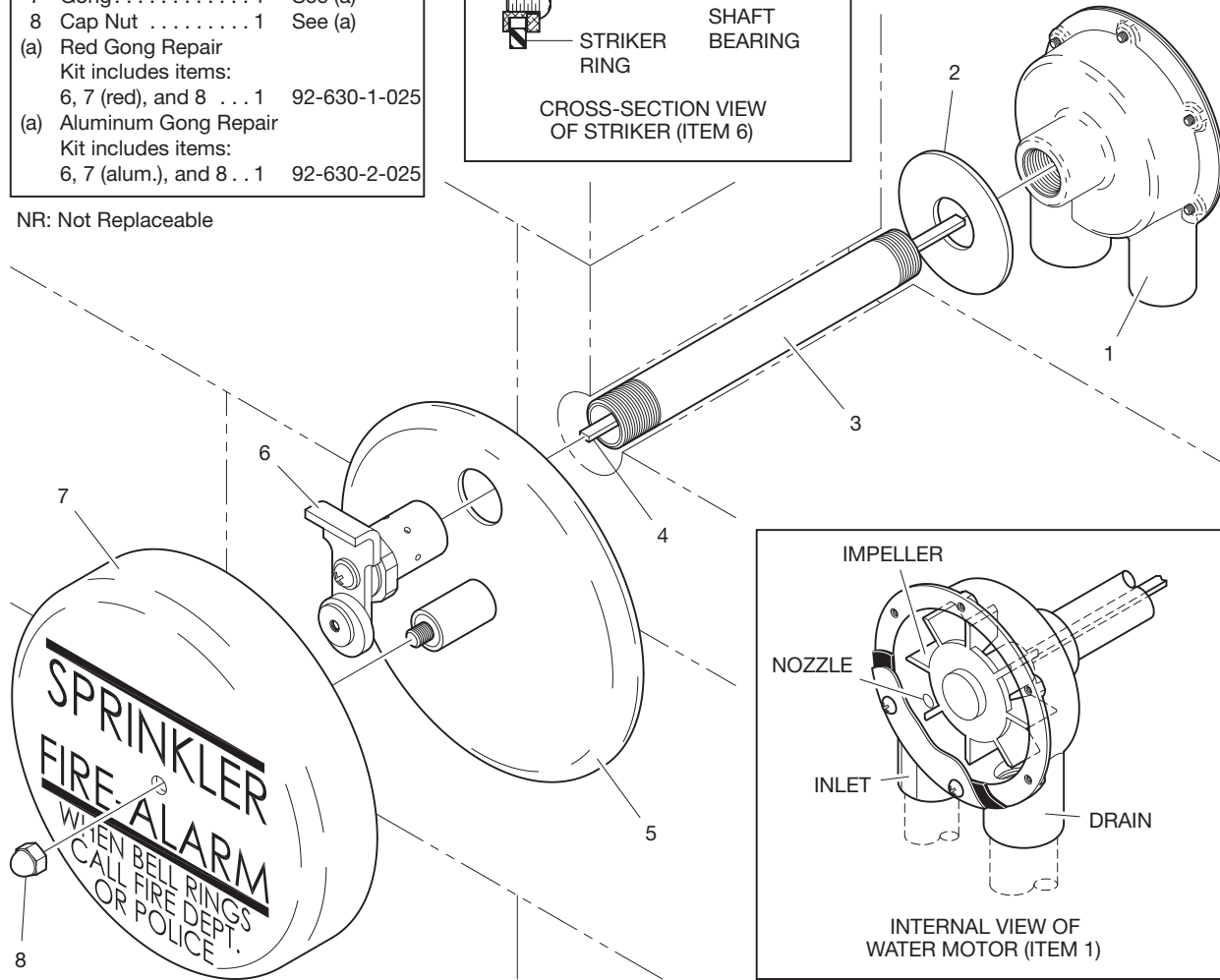
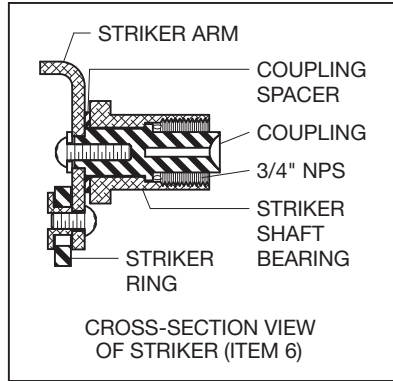
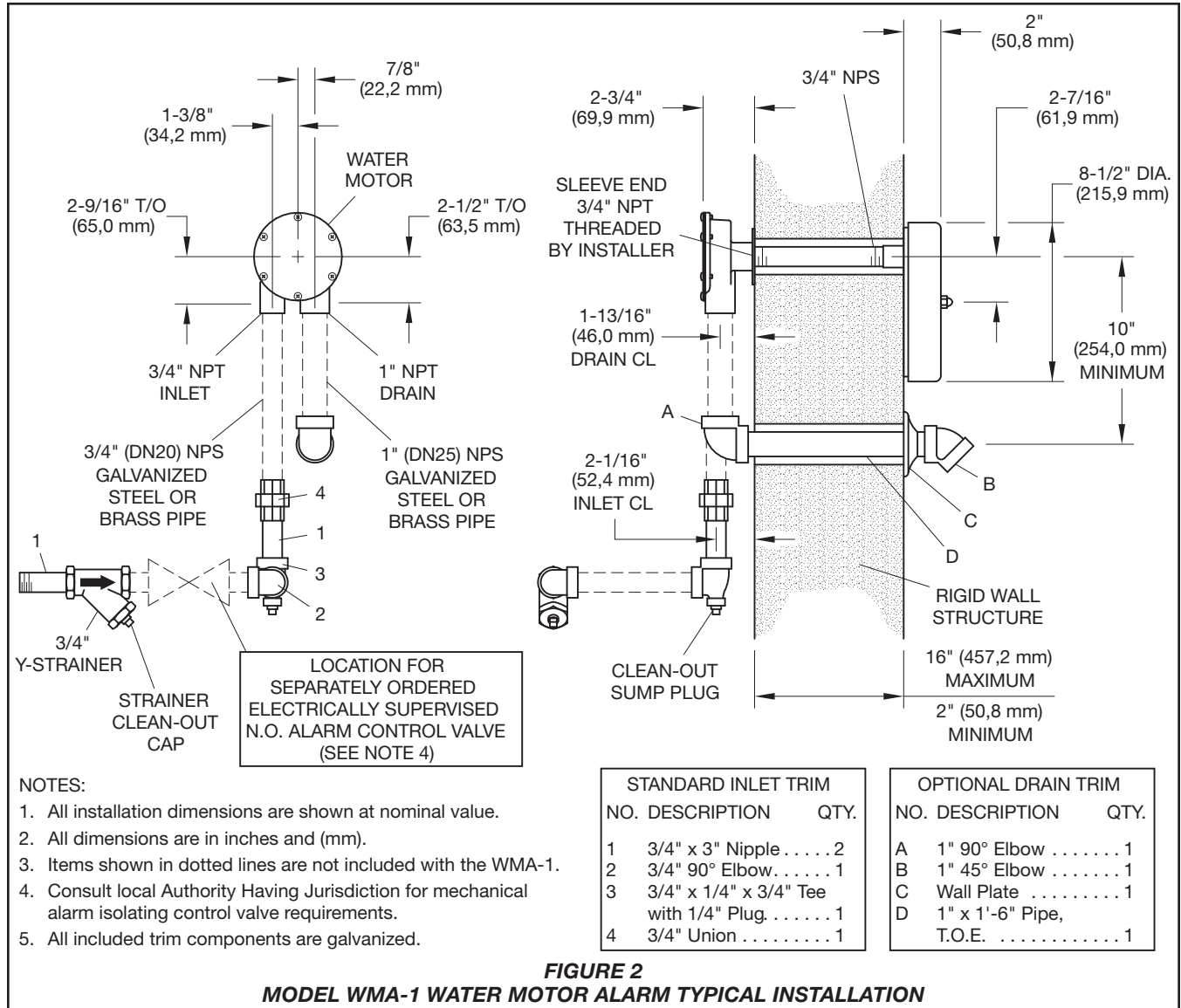


FIGURE 1  
MODEL WMA-1 WATER MOTOR ALARM ASSEMBLY



**NOTES:**

1. All installation dimensions are shown at nominal value.
2. All dimensions are in inches and (mm).
3. Items shown in dotted lines are not included with the WMA-1.
4. Consult local Authority Having Jurisdiction for mechanical alarm isolating control valve requirements.
5. All included trim components are galvanized.

STANDARD INLET TRIM		
NO.	DESCRIPTION	QTY.
1	3/4" x 3" Nipple . . . . .	2
2	3/4" 90° Elbow . . . . .	1
3	3/4" x 1/4" x 3/4" Tee with 1/4" Plug. . . . .	1
4	3/4" Union . . . . .	1

OPTIONAL DRAIN TRIM		
NO.	DESCRIPTION	QTY.
A	1" 90° Elbow . . . . .	1
B	1" 45° Elbow . . . . .	1
C	Wall Plate . . . . .	1
D	1" x 1'-6" Pipe, T.O.E. . . . .	1

## Care and Maintenance

The TYCO Model WMA-1 Water Motor Alarm must be maintained and serviced in accordance with this section.

Before closing a fire protection system main control valve for maintenance work on the fire protection system that it controls, obtain permission to shut down the affected fire protection system from the proper authorities and notify all personnel who may be affected by this decision.

Testing of the Water Motor Alarm may result in operation of other associated alarms. Consequently, notification must be given to the owner and the fire department, central control station, or other signal station to which the alarms are connected.

If the alarm was silenced during operation, the alarm control valve must be reopened immediately after the fire protection system is restored to service.

The owner is responsible for the inspection, testing, and maintenance of their fire protection system and devices in compliance with this document, as well as with the applicable standards of the National Fire Protection Association (e.g., NFPA 25), in addition to the standards of any other authorities having jurisdiction. Contact the installing contractor or product manufacturer regarding any questions.

Automatic sprinkler systems are recommended to be inspected, tested, and maintained by a qualified Inspection Service in accordance with local requirements and/or national codes.

The following procedures and inspections should be performed as indicated, in addition to any specific requirements of the NFPA, and any impairment must be immediately corrected:

**Step 1.** The Model WMA-1 Water Motor Alarm does not require any regularly scheduled maintenance. Rotating parts do not require lubrication. It is recommended, however, that fire alarms be periodically operated, i.e., inspected, to verify that they generate a clear and steady sound. Correct any impairment immediately.

**Step 2.** The inspection should be made quarterly or more frequently, as may be necessary for locations subject to vandalism.

The Y-Strainer and Sump are to be cleaned out after each operation of the Water Motor Alarm and after the alarm line piping has been drained.

## Limited Warranty

For warranty terms and conditions, visit [www.tyco-fire.com](http://www.tyco-fire.com).

## Ordering Procedure

Orders for the WMA-1 Water Motor Alarm Assembly, Optional Drain Trim, and replacement parts must include the description and Part Number (P/N).

The complete Model WMA-1 Alarm Assembly includes the Model WMA-1 Water Motor Alarm, Model WM-1 Strainer, and Standard Inlet Trim.

### WMA-1 Water Motor Alarm Assembly

Specify one of the following:

Red Finish Gong . . . . . P/N 52-630-1-001P  
Aluminum Finish Gong . . . . . P/N 52-630-2-001P

### Optional Drain Trim

Specify: Optional Drain Trim for Model WMA-1 Water Motor Alarm, P/N 52-630-2-002

### Separately Ordered Alarm Control Valve

Specify: UL/FM 3/4 Inch Ball Valve, P/N 92-300-1-006

### Separately Ordered Parts for Multiple Systems

Specify: Model WM-1 Y-Strainer, P/N 52-271-1-001

(One Y-Strainer is required for two systems; two Y-Strainers are required for three systems.)

Specify: 3/4 Inch Check Valve with 3/32 Inch Orifice, P/N 52-403-1-005  
(Two Check Valves are required for two systems; three Check Valves are required for three systems.)

### Replacement Parts for Water Motor Alarm

Specify (description) for use with Model WMA-1 Water Motor Alarm, P/N (see Figure 1)

