FIREBOY®
AUTOMATIC FIRE EXTINGUISHER

CLEAN AGENT FE241

OWNERS MANUAL
&
INSTALLATION INSTRUCTION

CG2, MA2 - FE241

FOR ALL SIZES FROM 25 TO 1,500 CUBIC FEET.

U.S. COAST GUARD AND FACTORY MUTUAL, RINA, AND BUREAU VERITAS APPROVED*

READ AND COMPLY WITH ALL INSTRUCTIONS, WARNINGS AND LIMITATIONS BEFORE INSTALLING, SERVICING OR REMOVING THIS DEVICE.

READ **DANGER** ON PAGE 2
RETAIN THIS MANUAL FOR REFERENCE.

Rev. 1, Jan. 04

DANGER

Do not attempt to install, remove, or service this unit without reading and complying with this owner's manual. Additional copies are available at no charge by contacting the manufacturer, distributor or dealer. Do not handle by actuator, do not drop. Keep away from children. Keep away from extreme heat. Do not attempt to discharge any Fireboy automatic or manual/automatic system which has not been securely fastened in its permanent mounting brackets in accordance with the owner manual. Never attempt to manually discharge an automatic only Fireboy system. Manual discharging of manual/automatic systems shall only be done when the device is properly secured in accordance with the installation instructions. Never attempt to disassemble any component part of these systems for disposal purposes or modification of the device. Fireboy systems contain up to 240 psi, depending on the model. Always wear eye, face and body protective gear when installing, removing or working in the immediate vicinity of this system. If accidental, or intentional, discharge of these systems occurs, when not properly secured in accordance with the owner's manual; the device may become a missile causing serious property damage, personal injury or even death by striking a person. Frostbite will result if the contents are discharged onto skin. Blindness can result if discharge should occur into eyes. An MSDS Sheet is available at no charge from the manufacturer.

Principal health hazards are: inhalation of high concentrations may cause death without warning. Vapor reduces oxygen available for breathing and is heavier than air. Liquid contact causes frostbite. Individuals with pre-existing diseases of the central nervous system, cardiovascular system, lungs or kidneys may have increased susceptibility to the toxicity of excessive exposure. If high concentrations are inhaled, immediately remove persons to fresh air and keep them calm. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician. In case of skin contact, flush skin with water for 15 minutes after excessive contact. Treat for frostbite if necessary by gently warming affected area. Seek medical assistance if irritation is present. Wash contaminated clothing before reuse. In case of eye contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

The fire extinguishant contained in this unit is Chlorotetrafluorethane. NOTE: None of the components in this material is listed by IARC, NTP, OSHA, or ACGIH as a carcinogen. Toxic by-products are produced when this agent extinguishes fire. Avoid breathing these fumes.

WARNING:This device shall not be installed or used in aircraft and/or racing vehicles. Fireboy-Xintex reserves the right to change features without notice.

Referenced Agencies:

* Bureau Veritas

* National Fire Protection Association
  1 Batterymarch Park
  Quincy, MA 02269-9101
  NFPA 2001, Standard on Clean Agent Fire Extinguishant Systems

* Factory Mutual Research
  1151 Boston Providence Turnpike
  Norwood, MA 02062

* USCG
  US DOT
  2100 Second Street SW
  Washington, DC 20593-0001

* RINA

SPECIFICATION TABLE

CG2 series extinguishers discharge automatically at a temperature of 175°F. MA2 series extinguishers discharge automatically at 175°F, and manually discharge at any temperature.

DISCHARGE CABLE KITS: Cable kits are for MA2 series units only. Cables are packaged separately and available in lengths from 6 to 30 feet. (longer lengths are available as special orders).

DUAL RELEASE ADAPTER DRA-1001-01: Permits manual discharge of a single Fireboy System from two separate locations. See Optional Equipment page 12.

WARNING: Diesel powered craft must also install the Automatic Engine Shutdown System or this system may not extinguish the fire. The Automatic Engine Shutdown System is available from your Fireboy-Xintex distributor, dealer, or retailer. See Optional Equipment on page 12.

*When specifications differ from below, they are clearly defined on the Nameplate (label) which is applied to each unit, or may be obtained by contacting the factory.

MODEL NBR	AGENT WEIGHT (lbs)	AGENT WEIGHT (kgs)	DIAMETER (in)	TOTAL HEIGHT (in)	MAX. VOL PROTECTED CU. FT.	CU. M	APPROX. GROSS WEIGHT (lbs)	APPROX. GROSS WEIGHT (kgs.)	COAST GUARD APPROVAL #
CG2-025-FE241	0.8	0.4	2.9	9.2	25	.71	1.7	0.8	162.029/175/0
CG2-050-FE241	1.7	0.8	2.9	12.2	50	1.4	2.7	1.2	162.029/176/0
CG2-075-FE241	2.5	1.1	3.0	14.8	75	2.1	3.9	1.8	162.029/177/0
CG2-100-FE241	3.4	1.5	4.3	11.9	100	2.8	5.3	2.4	162.029/178/0
CG2-125-FE241	4.2	1.9	4.3	14.5	125	3.5	8.8	4.0	162.029/179/0
CG2-150-FE241	5.1	2.3	5.1	13.2	150	4.3	11.9	5.4	162.029/180/0
CG2-175-FE241	5.9	2.7	5.1	13.2	175	4.9	12.8	5.8	162.029/180/0
CG2-200-FE241	6.8	3.1	5.1	15.5	200	5.7	13.6	6.2	162.029/181/0
CG2-225-FE241	7.6	3.5	5.1	15.5	225	6.4	14.4	6.5	162.029/181/0
CG2-250-FE241	8.5	3.9	6.3	14.7	250	7.0	18.2	8.3	162.029/182/0
CG2-275-FE241	9.3	4.2	6.3	14.7	275	7.8	19.1	8.7	162.029/182/0
CG2-300-FE241	10.1	4.6	6.3	14.7	300	8.5	19.9	9.0	162.029/182/0
CG2-325-FE241	11.0	5.0	7.2	15.1	325	9.2	24.0	10.9	162.029/183/0
CG2-350-FE241	11.8	5.4	7.2	15.1	350	10	24.9	11.3	162.029/183/0
CG2-375-FE241	12.7	5.8	7.2	15.1	375	10.6	25.7	11.7	162.029/183/0
CG2-400-FE241	13.5	6.1	7.2	15.1	400	11.3	26.6	12.1	162.029/183/0
CG2-450-FE241	15.2	6.9	7.2	17.8	450	12.7	29.8	13.5	162.029/184/0
CG2-500-FE241	16.9	7.7	7.2	17.8	500	14.1	31.5	14.3	162.029/184/0
CG2-550-FE241	18.6	8.5	7.2	24.4	550	15.6	39.9	18.1	162.029/185/0
CG2-600-FE241	20.3	9.2	7.2	24.4	600	17	41.5	18.9	162.029/185/0
CG2-650-FE241	22.0	10.0	7.2	24.4	650	18.4	43.2	19.6	162.029/185/0
CG2-700-FE241	23.7	10.8	7.2	24.4	700	19.8	44.9	20.4	162.029/185/0
CG2-750-FE241	25.4	11.5	7.2	24.4	750	21.2	46.6	21.2	162.029/185/0
CG2-800-FE241	27.0	12.3	7.2	32.2	800	22.6	53.7	24.4	162.029/186/0
CG2-850-FE241	28.7	13.0	7.2	32.2	850	24	55.4	25.2	162.029/186/0
CG2-900-FE241	30.4	13.8	7.2	32.2	900	25.5	57.1	26.0	162.029/186/0
CG2-950-FE241	32.1	14.6	7.2	32.2	950	26.9	58.7	26.7	162.029/186/0
CG2-1000-FE241	33.8	15.4	7.2	32.2	1000	28.3	60.4	27.5	162.029/186/0

MODEL NBR	AGENT WEIGHT (lbs)	AGENT WEIGHT (kgs)	DIAMETER (in)	TOTAL HEIGHT (in)	MAX. VOL PROTECTED CU. FT.	CU. M	APPROX. GROSS WEIGHT (lbs)	APPROX. GROSS WEIGHT (kgs.)	COAST GUARD APPROVAL #
MA2-025-FE241	0.8	0.4	2.9	9.2	25	.71	1.7	0.8	162.029/187/0
MA2-050-FE241	1.7	0.8	2.9	12.2	50	1.4	2.7	1.2	162.029/188/0
MA2-075-FE241	2.5	1.1	3.0	14.8	75	2.1	3.9	1.8	162.029/189/0
MA2-100-FE241	3.4	1.5	4.3	11.9	100	2.8	5.3	2.4	162.029/190/0
MA2-125-FE241	4.2	1.9	4.3	14.5	125	3.5	8.8	4.0	162.029/191/0
MA2-150-FE241	5.1	2.3	5.1	13.2	150	4.3	11.9	5.4	162.029/192/0
MA2-175-FE241	5.9	2.7	5.1	13.2	175	4.9	12.8	5.8	162.029/192/0
MA2-200-FE241	6.8	3.1	5.1	15.5	200	5.7	13.6	6.2	162.029/193/0
MA2-225-FE241	7.6	3.5	5.1	15.5	225	6.4	14.4	6.5	162.029/193/0
MA2-250-FE241	8.5	3.9	6.3	14.7	250	7.0	18.2	8.3	162.029/194/0
MA2-275-FE241	9.3	4.2	6.3	14.7	275	7.8	19.1	8.7	162.029/194/0
MA2-300-FE241	10.1	4.6	6.3	14.7	300	8.5	19.9	9.0	162.029/194/0
MA2-325-FE241	11.0	5.0	7.2	15.1	325	9.2	24.0	10.9	162.029/195/0
MA2-350-FE241	11.8	5.4	7.2	15.1	350	10	24.9	11.3	162.029/195/0
MA2-375-FE241	12.7	5.8	7.2	15.1	375	10.6	25.7	11.7	162.029/195/0
MA2-400-FE241	13.5	6.1	7.2	15.1	400	11.3	26.6	12.1	162.029/195/0
MA2-450-FE241	15.2	6.9	7.2	17.8	450	12.7	29.8	13.5	162.029/196/0
MA2-500-FE241	16.9	7.7	7.2	17.8	500	14.1	31.5	14.3	162.029/196/0
MA2-550-FE241	18.6	8.5	7.2	24.4	550	15.6	39.9	18.1	162.029/197/0
MA2-600-FE241	20.3	9.2	7.2	24.4	600	17	41.5	18.9	162.029/197/0
MA2-650-FE241	22.0	10.0	7.2	24.4	650	18.4	43.2	19.6	162.029/197/0
MA2-700-FE241	23.7	10.8	7.2	24.4	700	19.8	44.9	20.4	162.029/197/0
MA2-750-FE241	25.4	11.5	7.2	24.4	750	21.2	46.6	21.2	162.029/197/0
MA2-800-FE241	27.0	12.3	7.2	32.2	800	22.6	53.7	24.4	162.029/198/0
MA2-850-FE241	28.7	13.0	7.2	32.2	850	24	55.4	25.2	162.029/198/0
MA2-900-FE241	30.4	13.8	7.2	32.2	900	25.5	57.1	26.0	162.029/198/0
MA2-950-FE241	32.1	14.6	7.2	32.2	950	26.9	58.7	26.7	162.029/198/0
MA2-1000-FE241	33.8	15.4	7.2	32.2	1000	28.3	60.4	27.5	162.029/198/0
MA2-1050-FE241	35.5	16.1	10.0	32.2	1050	29.7	62.1	28.2	162.029/199/0
MA2-1100-FE241	37.2	16.9	10.0	20.8	1100	31.1	61.4	27.9	162.029/200/0
MA2-1150-FE241	38.9	17.7	10.0	20.8	1150	33.0	63.1	28.7	162.029/200/0
MA2-1200-FE241	40.6	18.5	10.0	20.8	1200	34.0	64.8	29.5	162.029/200/0
MA2-1250-FE241	42.3	19.2	10.0	20.8	1250	35.4	66.5	30.2	162.029/200/0
MA2-1300-FE241	60.8	27.6	10.0	31.8	1300	36.8	98.3	44.7	162.029/201/0
MA2-1350-FE241	63.2	28.7	10.0	31.8	1350	38.2	100.6	45.7	162.029/201/0
MA2-1400-FE241	65.5	29.9	10.0	31.8	1400	39.6	102.9	46.8	162.029/201/0
MA2-1450-FE241	67.9	30.9	10.0	31.8	1450	41.0	105.3	47.9	162.029/201/0
MA2-1500-FE241	70.2	31.8	10.0	31.8	1500	42.5	107.6	48.9	162.029/201/0

GENERAL INFORMATION

Fireboy Automatic (CG Series) and Manual/Automatic (MA Series) Fire Extinguishing Systems are manufactured for a broad range of applications, including marine, industrial and commercial uses. This booklet is intended to outline the proper installation of the systems for most applications. If, however, further advice or technical advice is required, this information is available by writing or calling Fireboy Systems. The agent, FE-241, (Chlorotetrafluoroethane) has been accepted by the Environmental Protection Agency as a suitable alternate to Halon. Fireboy FE-241 Systems are approved for use in unoccupied areas. This would include many applications, but excludes any enclosed space which is normally occupied by human beings. Normally unoccupied areas include engine compartments of boats, industrial storage rooms, switching centers, electric utility rooms, paint storage lockers, and furnace rooms. The National Fire Protection Association defines normally occupied areas as "one that is intended of Occupancy." (NFPA-12A 1989)

All Fireboy Systems are Factory Mutual Laboratories (FM) approved through actual fire testing. All CG2 and MA2 models are U.S. Coast Guard approved.

NOTE: Fireboy Systems are not, nor are they intended to be, explosion suppression devices. They do not lessen the need to take all usual precautions before starting engines in boats or checking for fire hazards in other applications. Example: Boat owners should always check for fumes and run the blowers before starting engines, or operating generators, or other equipment in protected spaces.

WARNING: NEVER INSTALL A FIREBOY SYSTEM ON THE UNDERSIDE OF A HATCH COVER OR AN ACCESS DOOR WHICH COULD BE THROWN CLEAR BY AN EXPLOSION. NEVER INSTALL IN A MANNER THAT RESULTS IN THE ACTUATOR BEING IN CLOSE PROXIMITY TO ENGINE EXHAUST MANIFOLDS OR TURBO CHARGERS WHERE RADIATED HEAT COULD CAUSE PREMATURE ACTUATION. NEVER INSTALL UPSIDE DOWN. NEVER INSTALL IN A LOCATION THAT COULD TRAP WATER IN CONTACT WITH CYLINDER SURFACES.

MARINE INSTALLATION INSTRUCTIONS - Always check the system for damage in shipment. With this system at room temperature, check the pressure gauge to be sure the gauge pointer lies within the green zone. The correct weight is shown on the nameplate for the appropriate model. Be sure to weigh this unit at least once every six (6) months and record the accurate weight on the tag attached. Fireboy Systems are designed and intended only for installation in interior compartments where they are not subject to direct weather or seawater.

DIESEL ENGINES - Diesel engines will not stall with the ingestion of the FE-241 agent; thereby depleting the compartment of the agent and permitting a possible reflash of the fire. The Automatic Engine Shutdown Systems are available in three, five, and eight circuit designs.

Before installing, reconfirm the volume of the compartment to be protected in cubic feet or cubic meters, with no deductions taken for installed equipment. Now check the appropriate column on the nameplate indicating the model and the cubic volume for which it was designed. To determine cubic volume, multiply the width times the length times the depth at the keel. It is appropriate to use more agent than is required, but never install a Fireboy System that is rated for less volume than the compartment that is to be protected.

NOTE: Never install two smaller units to protect any given volume. Since Fireboy Systems are each independent of one another, there is no guarantee that both would discharge exactly at the same moment, thereby leaving you with inadequate agent to extinguish the fire. Two units may be installed in a given volume providing each unit is sufficient as designed. This results in a redundant system.

SELECTING THE LOCATION

NOTE: If mounting this system in a compartment that has an overhead hatch or deck that could be opened, or be lost in the event of an explosion, aim the actuator portion of the system so that the cylinder contents would be discharged into the compartment and not be thrown out into the open air.

VERTICAL, OVERHEAD, OR HORIZONTAL INSTALLATION
All CG2 and MA2 models up to 600 cubic ft. may be installed horizontally or vertically.

Units 601 cubic feet and above must be installed vertically. It is acceptable to tip the units up to 30 degrees off perpendicular. See Diagram.

MODELS UP TO 600 CU. FT.

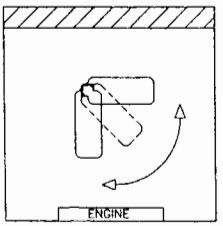


FIGURE 1

MODELS 601 CU. FT. AND ABOVE

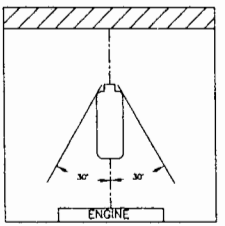


FIGURE 2

Vertical installation should be on the forward or aft vertical bulkhead of the engine compartment as near the centerline of the vessel (keel) and as high as possible. Direct the actuator towards the opposite bulkhead.

(Figure 1 & 2) In all installations, the actuator must be as high as possible and directed towards the opposite bulkhead.

WARNING:
When installing the models described above which are suitable for vertical or horizontal installation, the compartment overhead (ceiling) may be appropriate. In this case, locate the Fireboy as near the center of the compartment as possible. Install with cylinder wall parallel to the keel with the top of the cylinder toward the bow of the boat. The actuator itself should be pointed directly downward. If the Fireboy must be installed near the forward or aft portion of the overhead, secure it athwartship (crosswise to the keel), and direct the actuator towards the underside of engine(s). (Figure 2). In sailboats, avoid installing athwartship.

WARNING:
NEVER INSTALL A FIREBOY ON THE UNDERSIDE OF A HATCH COVER OR ON A DOOR LEADING INTO THE COMPARTMENT. IN THE EVENT OF AN EXPLOSION, OR THE HATCH AND DOOR BEING IN AN OPEN POSITION WHEN A FIRE OCCURS, THE DEVICE WILL AFFORD NO PROTECTION. FURTHERMORE, IN THE EVENT A DISCHARGE SHOULD OCCUR, A LIGHTLY SECURED DOOR MAY BE SWUNG OPEN ALLOWING THE PRESSURED DEVICE TO BECOME A MISSILE CAUSING SERIOUS PROPERTY DAMAGE, PERSONAL INJURY OR DEATH, NEVER INSTALL IN A MANNER THAT RESULTS IN THE ACTUATOR BEING IN CLOSE PROXIMITY TO ENGINE EXHAUST MANIFOLDS OR TURBO CHARGERS WHERE RADIATED HEAT COULD CAUSE PREMATURE ACTUATION.

After selecting location, use template located in the carton to drill the holes for the brackets. Locate the lower bracket 1 1/2" above the bottom of the cylinder and the upper bracket 1/2" above the Fireboy nameplate. After holes are drilled, use appropriate length (1024) stainless steel bolts and lockwashers and through bolt to bulkhead or overhead.

INSTALLING INDICATOR LAMP AND ESCUTCHEON PLATE

Your Fireboy System is supplied with one (1) indicator lamp and escutcheon plate. U.S. Coast Guard regulations require an indicator lamp and an escutcheon plate at each helm position from which the craft may be operated. Additional indicator lamps and escutcheon plates are available factory direct shown elsewhere in this manual. Select an appropriate location for the indicator lamp and escutcheon plate on or near the instrument panel at the helm in full view of the operator. Drill a 5/16" hole. Now remove the backing paper on the escutcheon panel, insert the two wires through the hole and firmly press in place. Your indicator lamp may now be wired according to the instructions as shown in Figure 4.

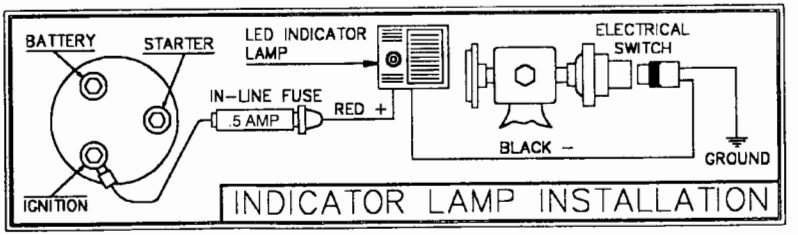


FIGURE 4

WIRING INDICATOR LAMP

WARNING: BEFORE ATTEMPTING TO WIRE THE INDICATOR LAMP, YOU MUST TURN OFF ALL ELECTRICAL CURRENT TO THE IGNITION SWITCH BY EITHER TURNING OFF THE IGNITION CIRCUIT BREAKER, REMOVING THE IGNITION FUSE, OR DISCONNECTING THE POSITIVE BATTERY TERMINAL. AN ELECTRICAL SHORT WHILE CONNECTING THE INDICATOR LAMP COULD RESULT IN ELECTRICAL BURN, INJURY OR FIRE.

The indicator lamp supplied is for 12 VDC use only. All Fireboy wiring must comply with the American Boat and Yacht Council Standard E9-9, titled, Direct Current Electrical Systems for Boats, available from ABYC, 3069 Solomon's Island Road, Edgewater, MD 21037.

NOTE: In order to fully comply with U.S. Coast Guard Rule 162.029, when this system is installed in boats having powered ventilation, (Fireboy's Engine Shutdown/Override System) the ground connection of the ventilation blower must be connected to the pressure switch at the same point as the indicator lamp or to terminal Number 1 of Fireboy System's Engine Shutdown/Override Systems. This connection method will interrupt the blower in the event of a discharge. Fireboy recommends installing an Engine Shutdown System when wiring to a blower.

IMPORTANT!
The current draw through the pressure switch must not exceed 5 amps. If a higher current limit is required, then an Engine Shutdown must be used.

NOTE:
The Escutcheon plate LED is connected to the pressure switch at the same point that auxiliary devices can be connected. Care must be taken when wiring in these devices to ensure that the presence of the LED does not affect the operation of the device. Contact Fireboy-Xintex for assistance if you are unsure about the installation.

If after reviewing the wiring instructions below, you have any doubts about your ability to safely install this device, don't take chances...consult a qualified marine electrician. In addition, ignition systems and electrical systems vary from boat to boat, and the directions, which follow, may not apply to your boat. Simply put, the Fireboy indicator lamp is wired in series with the ignition switch, fuse, Fireboy electrical pressure switch and common ground. (see Figure 4). Assemble the supplies you will need that are not included with your Fireboy System. The necessary length of insulated 16 gauge (minimum) stranded wire; a one-half (.5) ampere in-line fuse and fuse holder or circuit breaker. Properly sized insulated crimp-on wire connectors. Connect one lead of the fuse to the "ignition" position of the starter switch. Next, connect other lead of the fuse to the red plus wire of the LED indicator lamp. The black lead of the indicator lamp is now connected to one of the pigtail leads on the Fireboy System (as shown in Figure 4). NOTE: THE LED WILL NOT WORK IF YOU REVERSE THE BLACK AND RED WIRES. The remaining lead from the Fireboy System electrical switch is connected to ground. We recommend the negative block at the instrument panel for this ground connection. Your lamp installation is now complete.

TESTING INDICATOR LAMP

Reconnect power to the ignition switch with the key off. Lamp should be OFF. Turn keys on and the indicator lamp should be ON.

USING INDICATOR LAMP

The Fireboy System indicator lamp is designed to announce to the helmsman that the unit has been discharged. Under normal circumstances, whenever the ignition key is turned ON, the indicator lamp will glow. Should the Fireboy unit discharge during operation of the vessel, the lamp will go OFF. Should you wish to check the system while dockside, simply turn ON the ignition key. This design provides a constant "continuity" check of the system's electrical circuit without the need for a test mechanism. It also permits using the Fireboy electrical switch to directly interrupt other electrical systems.

CABLE INSTALLATION

WARNING: All Fireboy MA Systems installations must use only genuine Fireboy cables and associated components that are engineered specifically for this application. Nothing else will provide the intended degree of safety and reliability inherent in these systems. Any substitution will void all laboratory and Coast Guard approvals and Fireboy warranties, and may result in an inoperative system, as well as in unsafe and hazardous condition. Never install manual release handle in space to be protected. Never install a cable on a CG2 Series. For use on MA2 Series only.

NOTE: When installing and connecting the manual discharge cable, never push the cable at the T-handle end. This may cause the cable to jam and become inoperable. The cable has a feature that when completely pulled out may twist and lock at the T-Handle end and will not allow you to pull the T-Handle back into place. In the event of this, turn the T-Handle and the threaded metal rod counter clock wise a 1/2 turn until released and pull the cable from the "S" hook to return the cable to an operational position. You may need to use a pair of pliers to carefully twist the threaded metal rod and release it from a locked position.

Determine the location of the escutcheon plate (2 1/2" X 4" with 13/32" hole) for the manual release handle. It should be located at the helm station, on a firm support and in full view of the operator. The rear of the panel at this point must allow clearance for the cable ferrule to extend behind the panel (approximately 12 inches). Using the escutcheon plate as a template, locate and drill a 13/32" hole for the cable. Using the correct length of Fireboy cable, route the cable in the most direct manner, with as few bends as possible, to the cylinder location. The minimum bend radius is 12 inches (a 24 inch circle) and must not be reduced. The best installation will usually follow the same route as manufacturer installed cables. (Example: Steering, throttle, and transmission cables).

Cable must be installed in such a manner that it will not be subject to pinching or crushing, rubbing, extreme vibration, sharp bending or kinking, or extremes of heat or cold. The total number of bends (in degrees) should not exceed 360. (Example: 4 right angle bends (90°) = 4 x 90° = 360°. If the correct length of cable is used, it should never be necessary to coil the cable. In any case, a coil shall not be placed in the same enclosure as the cylinder. After the cable has been run, the nylon clamps provided are used to secure loose sections where required to keep it from sagging. Use the support clamps on straight runs only, never in a bend. Clamps must not crush cable.

DO NOT CONNECT CABLE END TO CYLINDER AT THIS TIME.

ESCUTCHEON PANEL AND T-HANDLE - SEE PAGE 15, FIGURE 5

With the temperature above +50°F for proper adhesion, peel the release paper from the back of the escutcheon panel. Align the lower hole and press panel down evenly to activate adhesive. Following Figure 5 on page 15, place nut and lock washer in place on the cable end and insert through the 13/32" hole in the panel and escutcheon. Pull cable shaft out to its full extension and screw ferrule on to cable (approximately 4-5 turns maximum), slide o ring onto cable shaft, screw red T-handle onto cable shaft (not far enough to obstruct cross hole in T-handle) and push down into ferrule to seat o ring. Align holes in ferrule and T-handle and temporarily install pull pin. Align T-handle so the "Fire" reads vertically, and tighten nut behind panel. Recheck cable installation. CABLE MUST NOT BE CONNECTED TO CYLINDER AT THIS TIME. Remove pull pin and operate T-handle. It must move easily and freely, with no binding or undue friction after this check, re-seat T-handle in ferrule and insert pull pin. Seal the pull pin using the special plastic tamper seal provided. The seal must pass through the ring of the pull pin only once. Insert the free end of the seal into the projecting portion of the tab end (marked "enter") and pull up snug. The seal provides a positive means of determining if the system has been manually actuated, and is not reusable.

CONNECTING CABLE TO CYLINDER - SEE FIGURES 6 & 7

WARNING: ACCIDENTAL DISCHARGE DURING HANDLING OR INSTALLATION MAY CAUSE SERIOUS INJURY OR DEATH. DO NOT LIFT, CARRY, OR HANDLE BY ACTUATOR, PRESSURE SWITCH, OR CABLE. WEAR EYE PROTECTION WHEN INSTALLING OR SERVICING CYLINDER.

NOTE: IF A DUAL RELEASE ADAPTER (DRA-1001-01) IS TO BE USED WITH THIS INSTALLATION, FOLLOW THE INSTRUCTIONS ENCLOSED WITH THAT UNIT AT THIS TIME.

With the cylinder mounted, insert cable end into hole in upper end of cylinder manifold. Depending on the model number of the system you are installing, the "S" hook of the cable is inserted on the right or left side of the manual actuator lever. Push the cable end through the hole in the cylinder manifold far enough to allow you to bend the flexible center strand, and insert the "S" hook into the hole in the manual actuator lever from the proper side. Move the cable jacket ferrule back into the manifold and insert the wire retaining clip provided, into the slot at the top of the manifold to secure the cable taking care to insure that the pin passes through the circular groove in the cable ferrule.

CAUTION! WITH THE "S" HOOK IN PLACE, AND THE CABLE END RETAINING CLIP **NOT** INSTALLED, ANY PULL ON THE CABLE EXCEEDING 20 POUNDS WILL ACTUATE THE RELEASE MECHANISM. THE CABLE SHOULD NEVER BE INSTALLED OR REMOVED WITHOUT THE CYLINDER BEING SECURELY FASTENED IN ITS MOUNTING BRACKETS. ALWAYS WEAR EYE AND FACE PROTECTION EQUIPMENT WHILE PERFORMING THIS PROCEDURE.

OPERATION OF YOUR FIREBOY MODEL MA2 SYSTEM

When actuation occurs, a loud sound may be heard similar to that of small arms fire, followed by a rushing air sound. Your Fireboy will also indicate actuation whenever the ignition key is ON and the indicator lamp is OFF. Actual actuation time, when fire occurs, is entirely dependent upon the severity or intensity of the fire.

When actuation occurs, IMMEDIATELY SHUT DOWN ALL ENGINES, POWERED VENTILATION, and ELECTRICAL SYSTEMS AND EXTINGUISH ALL SMOKING MATERIALS. DO NOT OPEN THE ENGINE COMPARTMENT IMMEDIATELY. THIS FEEDS OXYGEN TO THE FIRE AND A FLASHBACK COULD OCCUR. Allow the agent to "soak" the compartment for at least 15 minutes and wait for hot metals or fuels to cool before cautiously inspecting for cause or damage. Have approved portable extinguishers at hand and ready for use. DO NOT BREATHE FUMES OR VAPORS CAUSED BY THE FIRE AS THEY ARE HAZARDOUS AND TOXIC.

MANUAL OPERATION OF MA2 SYSTEMS

If a fire is known to exist in the compartment in which the Fireboy is located, DO NOT WAIT FOR AUTOMATIC ACTUATION. Release the system manually. Close all hatches leading to the compartment, shut down all forced ventilation devices, engines, generators and electrical systems. Remove the safety pin from the "FIRE" T-handle, and pull firmly and release. A loud "rushing or air" sound will be heard. Depending on the model size, complete discharge will take from 1 to 9 seconds. DO NOT OPEN THE COMPARTMENT IMMEDIATELY. Keep the compartment closed for period of time sufficient to allow the agent to "soak" all areas of the protected space. This allows cooling of hot metals. Premature opening of the compartment allows an in-rushing of oxygen and could result in a flash-back. When opening the compartment for inspection, have hand held portable extinguishers ready.

MAINTAINING YOUR FIREBOY SYSTEM

Inspect the pressure gauge and the system daily. Figure 3 illustrates the ready and discharge condition of the actuator. Remove and weigh the complete unit (less brackets) every six (6) months on an accurate scale and record on tag provided. (Do not use any type of hand-held scales. Instead use an accurate scale which is frequently certified by an independent agency.) If weight is below that shown on each unit's nameplate, it must be removed from service immediately. If leakage is suspected, brush liquid soap on all points of possible leaks, or submerge entire unit in clean water and watch carefully for 5 to 10 minutes. Leaks will appear as tiny bubbles. If leakage is found, return the unit to manufacturer immediately for repair or replacement. See Limited Warranty on page 12 for details. Remember the two most important requirements to assure full charge and reliability of your Fireboy System are (1) visual inspection of the gauge and the actuator to determine if it has been actuated; (2) weighing, the sure method of determining the contents of the agent in the system.

All models from 75 cubic feet and above are rechargeable. Recharging is possible on these models providing the loss of agent is not due to fire, but through leakage as a result of damage or defects. Because all models smaller than 75 cubic feet are provided in aluminum canisters, they are not refillable. This is a DOT law. Fireboy recommends weighing the unit on an accurate scale at least once every six (6) months. With proper visual and weighing inspections, your Fireboy System will provide many years of reliable protection.

DISCONNECTION AND INSPECTION OF MANUAL DISCHARGE CABLE

WARNING: ACCIDENTAL DISCHARGE DURING HANDLING, INSTALLATION OR INSPECTION MAY CAUSE SERIOUS INJURY OR DEATH. WEAR EYE PROTECTION WHEN INSTALLING OR SERVICING CYLINDER AND MANUAL DISCHARGE CABLE.

SEE FIGURE 7

The manual discharge cable should be inspected annually at the same time as the extinguisher.

When disconnecting the manual discharge cable from the cylinder manifold **do not** remove the pull pin on the T-Handle. First remove the wire retaining clip securing the cable located at the slot in the top of the manifold. Carefully push the cable from the backside of the manifold towards the actuator far enough to allow you to bend the flexible center strand and remove the "S" hook from the black manual actuator lever. Once the "S" hook is free of the lever you should be able to pull the cable through the back and away from the manifold.

To reconnect the manual discharge cable to the cylinder, please reference "Connecting Cable To Cylinder" page 9 in this manual.

MAINTAINING THE INDICATOR LAMP CIRCUIT

Should the indicator lamp fail to come ON when the ignition key is ON, first check the pressure gauge and actuator to see if the system has discharged. If not, check fuse. Next, using a continuity tester, check the electrical pressure switch on the system bottle itself. Pull the molded rubber connector off by pulling straight away from the manifold, and place the probes of the continuity tester directly on the spade connectors. This pressure switch should have a closed circuit. Next, check the continuity of the entire wiring circuit. The indicator lamp is an LED (light emitting diode) and cannot be tested with a continuity tester. A simple method to test LED's is to remove the lamp and touch the Red wire to the + terminal and the black wire to the - terminal of an ordinary 9 volt battery. Should the indicator lamp be faulty, replacement lamps are available direct from Fireboy. Should the continuity of the pressure switch indicate an open circuit, the system will have to be returned to the factory for either replacement or repair, depending upon the model involved.

LIMITATIONS

Only one Fireboy System shall be installed per compartment. For example, never use two Model MA2-200 systems to protect a 400 cu. ft. enclosure. Instead, use the appropriate size system for the gross volume of the compartment. Multiple units are not approved unless each system is sufficient for the entire compartment, thereby resulting in a redundant system. If two multiple units were installed to provide the amount of agent required, there is no assurance that both would discharge at exactly the same time since each unit is fully independent of the other.

OPTIONAL EQUIPMENT

Coast Guard Regulation 162.029 requires an indicator lamp be installed at each helm station from which the vessel may be operated. These additional escutcheon plates and indicator lamp kits are available factory direct. Outside the U.S.A. and Canada, see your dealer.

An Automatic Discharge Alarm provides both an audible and visual alarm when the system discharges. Includes a 2" round instrument with a simple three (3) wire hookup. Automatic Engine Shutdown/Override System is required for use with Fireboy Systems in diesel powered craft.

3 YEAR LIMITED WARRANTY

This Warranty is in lieu of all other express or implied Warranties

Seller warrants title, materials, and workmanship on equipment, except components manufactured by others for which Seller assigns, as permitted, the original manufacturers warranty. Seller's warranty shall be for a period of (3) three years from the date of sale to the ORIGINAL CONSUMER PURCHASER, during which non-conforming equipment returned to Seller at Buyer's expense and risk be repaired or replaced at Seller's option. Fireboy-Xintex, Inc. will repair or replace products found to be defective in materials or workmanship within the period set forth above, provided that: (a) the product has not been subjected to abuse, contamination, neglect, accident, incorrect wiring not our own, improper installation or servicing, or used in violation of instructions furnished by Fireboy-Xintex, Inc. and (b) as to any prior defects in materials or workmanship covered by this warranty, the product has not been repaired or altered by anyone except Fireboy-Xintex, Inc. and (c) the serial number has not been removed, defaced or otherwise changed, and (d) examination discloses, in the judgement of Fireboy-Xintex, Inc. does not assume the costs of removal and/or installation of the product or any other incidental costs which may arise as a result of any defect in materials or workmanship, and (e) upon discovery of defect, Buyer shall immediately cease use of and notify Fireboy-Xintex, Inc.

ANY WARRANTY IMPLIED BY LAW, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS, IS IN EFFECT ONLY FOR THE DURATION OF THE EXPRESS WARRANTIES SET FORTH ABOVE, NO PERSON IS AUTHORIZED TO GIVE ANY OTHER WARRANTY, OR TO ASSUME FOR FIREBOY-XINTEX, INC. ANY OTHER LIABILITY IN CONNECTION WITH THE SALE OF ITS PRODUCTS, FIREBOY-XINTEX, INC. SHALL NOT BE LIABLE FOR THE LOSS OF USE, REVENUE, OR PROFIT OR FOR ANY INJURY, OR FOR ANY OTHER CONSEQUENTIAL OR INCIDENTAL DAMAGES, BUYER IS NOT RELYING ON SELLER'S JUDGEMENT REGARDING HIS PARTICULAR REQUIREMENTS, AND HAS HAD AN OPPORTUNITY TO INSPECT THE PRODUCT TO HIS SATISFACTION.

This warranty gives you specific legal rights, and you may also have other rights, which vary, from state to state.

ACCESSORIES FOR FIREBOY AUTOMATIC SYSTEMS

PART NO.	DESCRIPTION
DA-1001-01I	Discharge Alarm - Round Bezel
DA-1001-02I	Discharge Alarm - Square Bezel
B-2174-10'	Wire Harness for Second Station Display
B-2174-30'	Wire Harness for Second Station Display
12 VDC	
ES-3000-01	3 Circuit Engine Shutdown System - Round Bezel
ES-3000-02	3 Circuit Engine Shutdown System - Square Bezel
ES-5000-01	5 Circuit Engine Shutdown System - Round Bezel
ES-5000-02	5 Circuit Engine Shutdown System - Square Bezel
ES-5015-01	5 Cir. Eng. Shutdown Sys. W/Time Delay - R. Bezel
ES-5015-02	5 Cir. Eng. Shutdown Sys. W/Time Delay - S. Bezel
ES-8000-01	8 Circuit Engine Shutdown System - Round Bezel
ES-8000-02	8 Circuit Engine Shutdown System - Square Bezel
ES-8015-01	8 Cir. Eng. Shutdown Sys. W/Time Delay - R. Bezel
ES-8015-02	8 Cir. Eng. Shutdown Sys. W/Time Delay - S. Bezel
DU-1002-01D	Second Station Display for use with Engine Shutdown System - Round Bezel
DU-1002-02D	Second Station Display for use with Engine Shutdown System - Square Bezel

PART NO.	DESCRIPTION
24-32 VDC	
ES-3000-01-24/32	3 Circuit Engine Shutdown System - Round Bezel
ES-3000-02-24/32	3 Circuit Engine Shutdown System - Square Bezel
ES-5000-01-24/32	5 Circuit Engine Shutdown System - Round Bezel
ES-5000-02-24/32	5 Circuit Engine Shutdown System - Square Bezel
ES-5015-01-24/32	5 Cir. Eng. Shutdown Sys. W/Time Delay - R. Bezel
ES-5015-02-24/32	5 Cir. Eng. Shutdown Sys. W/Time Delay - S. Bezel
ES-8000-01-24/32	8 Circuit Engine Shutdown System - Round Bezel
ES-8000-02-24/32	8 Circuit Engine Shutdown System - Square Bezel
ES-8015-01-24/32	8 Cir. Eng. Shutdown Sys. W/Time Delay - R. Bezel
ES-8015-02-24/32	8 Cir. Eng. Shutdown Sys. W/Time Delay - S. Bezel

NOTE: Detroit diesel engines require Automatic Engine Shutdown Systems with time delay.

Fireboy accessories are available from your Fireboy-Xintex distributor, dealer or retailer.

CUSTOMER EXCHANGE PROGRAM FOR DISCHARGED UNITS OF CERTAIN MODEL FIREBOY SYSTEMS

We will replace any non-refillable Fireboy unit for one-half (1/2) of the current suggested list price at the time of the return, plus shipping cost. Fireboy-Xintex, Inc. reserves the right to discontinue this exchange program without notice in the event it shall for any reason, discontinue the marketing of a comparable unit. Refillable units may be returned to Fireboy for refilling, unless the unit discharged in a fire. Units involved in a fire are not refillable and are to be considered condemned.

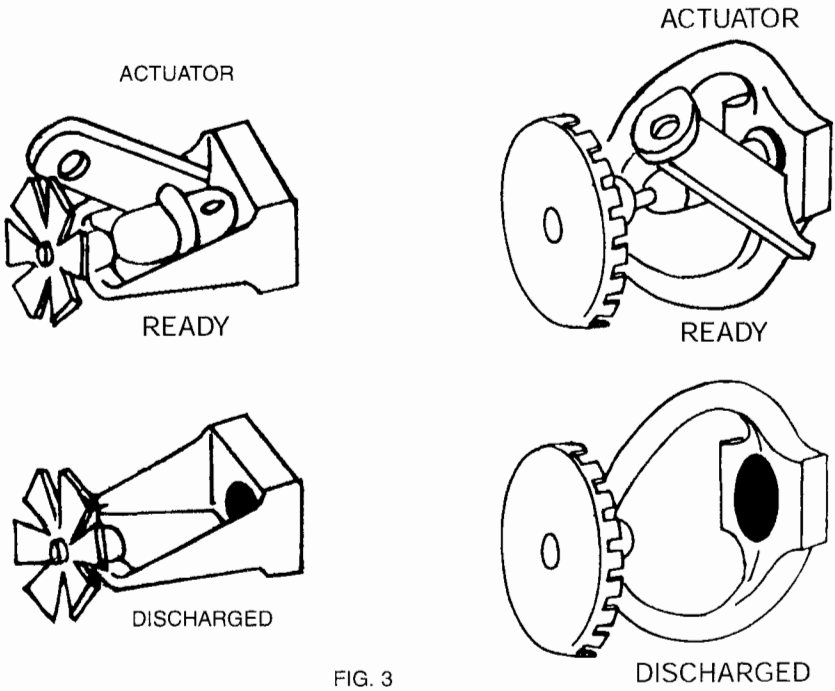


FIG. 3

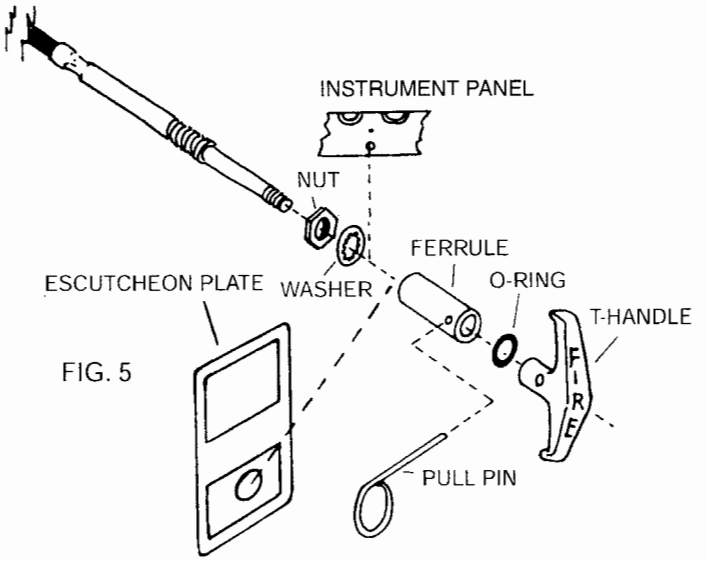


FIG. 5

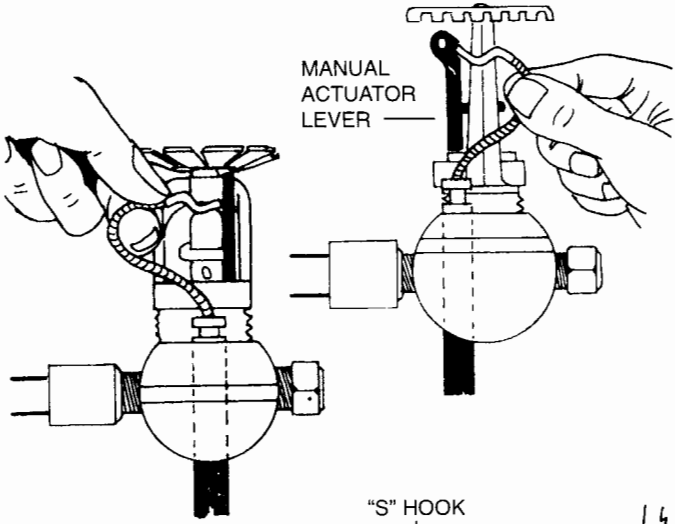


FIG. 6

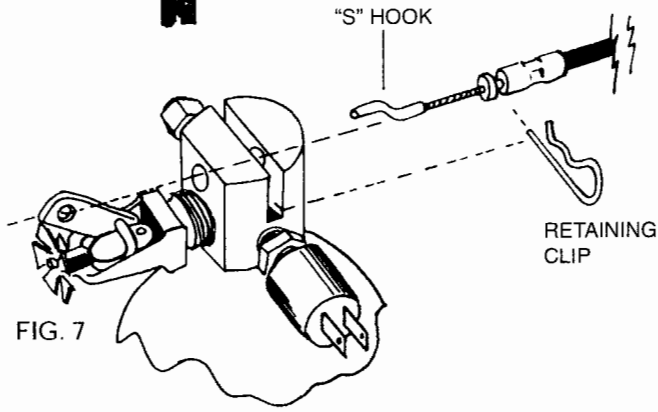
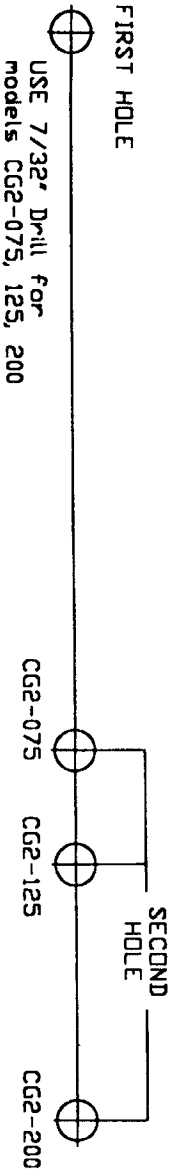


FIG. 7

Mounting Bracket Template for Fireboy Models CG2 & MA2-075, 125, and 200



FIREBOY®
AUTOMATIC FIRE EXTINGUISHER

Mailing Address: P.O. Box 152, Grand Rapids, Michigan USA 49501-0152
Shipping: 0-379 Lake Michigan Drive NW, Grand Rapids, Michigan USA 49544
Phone (616) 735-9380 FAX (616) 735-9381
TOLL FREE: 1-866-350-9500
Website: www.Fireboy-Xintex.com E-mail: Fireboy@Fireboy-Xintex.com

2004 Fireboy-Xintex, Inc.