INTERMATIC®

ELECTRONIC 7-DAY WATER HEATER TIME SWITCHES
MODELS EH10, 120V AND EH40, 240V
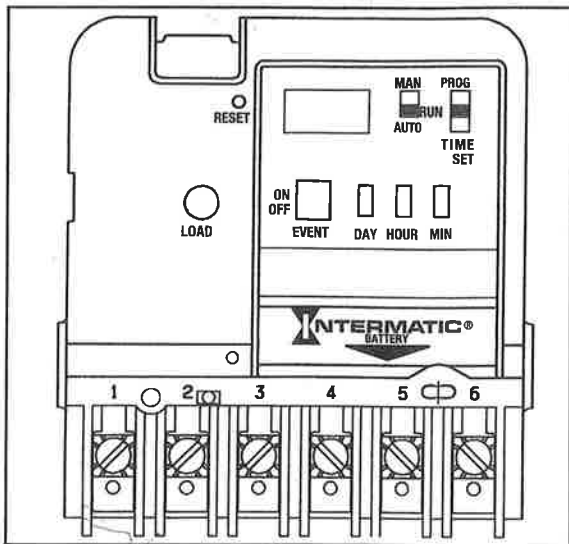WITH BATTERY CARRYOVER

Fig.1

⚠ **WARNING** *Risk of Fire or Electric Shock*
- Disconnect power at the circuit breaker(s) or disconnect switch(es) before installing or servicing.
- More than one circuit breaker or disconnect switch may be required to de-energize the equipment before servicing.
- Installation and/or wiring must be in accordance with National and Local Electrical Code requirements.
- Use #10 AWG wires - COPPER conductors ONLY.

NOTICE
- Do not touch circuit board components; contact can create a static discharge, which can damage the microprocessor.

OWNER/INSTALLER INSTRUCTION MANUAL
RETAIN FOR FUTURE REFERENCE.

MANUAL (MAN) - AUTOMATIC (AUTO)
(See Fig. 1)

- **MANUAL:** Bypasses your program completely; timer will not resume program until you return switch to AUTO mode position.
- **AUTOMATIC:** For automatically switching at ON/OFF times; accurate to-the-minute.

PROGRAM (PROG) - RUN - TIME SET
- **PROGRAM:** Use this position when programming.
- **RUN:** Use this position for normal operation. Be sure to return to RUN after setting time and program.
- **TIME SET:** Use this position to set day and time of day.

ON/OFF - EVENT (the large push button) - Serves a dual purpose

- **EVENT:** Used for programming (active only when switch is set at PROG).
- **ON/OFF:** Override (active only when switch is set at RUN); turns load ON if already off or OFF if already on. Timer automatically resumes program cycle only when slide switch is in AUTO. Note that this button is also accessible without opening the enclosure.

SPECIFICATIONS:
Clock Voltage - Model EH40 - 240V. A.C., 50/60 Hz
EH10 - 120V. A.C., 50/60 Hz
Power Consumption - EH10 - 1.0 W. Max., EH40 - 3.0 W. Max.
Contact Configuration - EH10 (SPST) Single pole-single throw model - EH40(DPST) Double pole-single throw model

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Switch Rating (Per Pole) -
- 30 amp inductive/resistive - 120-240V. A.C., 60 Hz
- 1 H.P. 120V. A.C., 60 Hz.
- 1-1/2 H.P. 240V. A.C., 60 Hz.
- 5 amp tungsten, 120-240V. A.C., 60 Hz.

Set Points (Events) - 12 total (6 ON/6 OFF) - Can be assigned in any combination to weekdays, weekend days, daily or weekly operation providing up to a maximum of 84 weekly operations (42 ON/42 OFF).
Battery Powered Clock Operation - 3 years minimum, AA industrial grade alkaline supplied with time switch.
Minimum ON/OFF Time - 1 Minute
Maximum ON/OFF Time - 6 days 23 hours 59 minutes
Shipping Weight - 2.37 Lbs. (1.05 Kg)
Case - Drawn steel, 7-3/4" (19.7 cm) high, 5" (12.7 cm) wide, 3" (7.6 cm) deep; gray finish with lockable spring hasp, clear see-through viewing window and external override.
Knockouts - Combination of 1/2 - 3/4" (one on back and each side, two on bottom)
Wire Size - AWG #10.

GENERAL SAFETY INFORMATION:
1. Mount the time switch in the desired location using the three mounting holes which are provided. Mount the time switch at eye level, if possible, providing sufficient room to the left of the enclosure for the cover to swing open fully. (See Fig. #2). The time switch mechanism does not need to be removed from the enclosure to mount the time switch since the top mounting hole is a slotted type mounting hole. Secure a screw or other fastener at eye level. The head of the screw of fastener should be slightly larger than the narrow portion of the slotted hole to ensure that the time switch is securely held in place. The remaining two mounting holes provide a means to secure the time switch.
2. If you do remove the mechanism, refer to Figure #3 and remove the mechanism from the case by depressing the catch at the top of the case and pulling out.
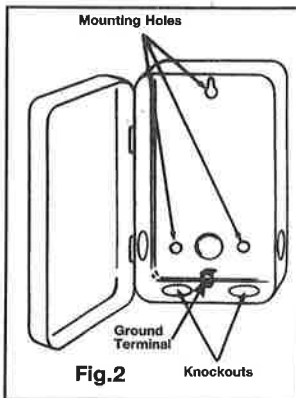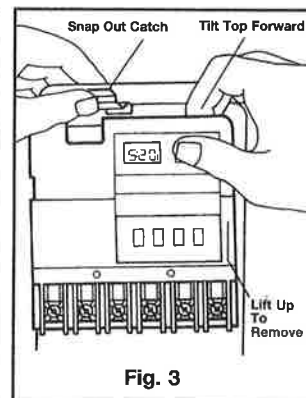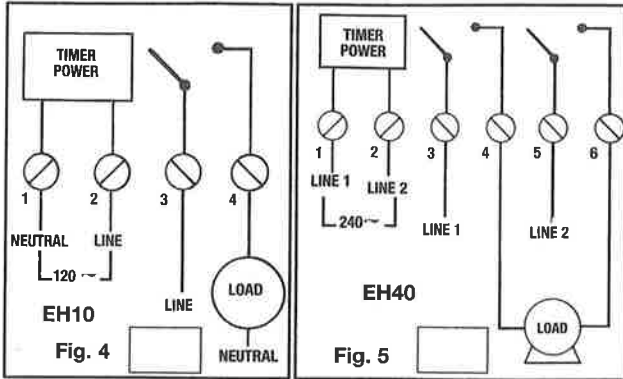

Fig.2   **Fig. 3**

3. Replace the mechanism in the case if it has been removed, making sure to engage ribs at sides of mechanism between ears at sides of case before snapping in place.
4. Lift the left side of the insulator off of the retaining post and pivot it up and away to expose the terminal screws.
5. Strip the supply and load wires by removing 1/2 inch of insulation. **DO NOT USE ALUMINUM WIRE.** Insert the wire ends under the proper terminal plates and tighten the screws firmly. Use any size wire AWG #10. Connect ground wire to grounding terminal at bottom of case.
6. Replace the plastic insulator.
7. Follow instructions for battery installation. Be sure that the battery is functioning properly. This can be checked by seeing that the display is visible. If the display has scrambled information, check to be sure that the polarity orientation of the battery is as shown on the cover label, then press the RESET switch and hold for at least two seconds. Note that the battery can easily be replaced without removing the time switch mechanism or field wiring. Simply press in and downward (in the direction of the arrow) on the battery cover which is identified with the word "Battery". It is recommended that the battery be replaced with a "AA" industrial grade alkaline cell at two to three

year intervals as part of the normal time switch maintenance observing battery polarity markings when installing. No other maintenance is required.

8. Place the slide switches in the AUTO and RUN position.
9. Reapply power to the time switch.
10. Press the recessed reset switch for at least two seconds. The display will show 12:00 A.M. and MO. Note that the days of the week are identified with the first two letters of the day (MO for Monday). The timer is now ready for programming. Refer to the examples which follow and enter the scheduled events (set points) required. Assign each of the 12 set points (EVENTS) entered to whichever day or groups of days of the week you wish an ON or OFF operation to occur.

Set Point = Event = ON = OFF

EH10 Fig. 4

EH40 Fig. 5

PROGRAMMING STEPS:
SET CURRENT DAY AND TIME
Slide switch to TIME SET. Push DAY until current day shows, then push HOUR until current hour AM or PM shows. Now push MINUTE until current minute shows. Clock is now set. Follow same procedure after replacing battery or changing time (such as for daylight saving time).

SET YOUR PROGRAM
Slide switch to PROG. Display will look like this: (-:- -)
- Press DAY until desired program period shows (see choices in "PROGRAM PERIOD OPTIONS" section above).
- Press HOUR until desired "ON 1" hour shows (that is, the first time each day of the program period that you want the load to turn ON).
- Press MINUTE until desired minute shows.
- Press EVENT to program time for ON 1 (and to advance to programming for OFF 1).
- Press DAY again until all seven days of the week show (or until another desired program period option shows; see "PROGRAM PERIOD OPTIONS").
- Press HOUR again until desired "OFF 1" hour shows (that is, the first time each day of the program period that you want the devices to turn OFF).
- Press MINUTE until desired minute shows.
- Press EVENT to set time for OFF 1. You may now begin setting ON 2, a second ON time, for the same program period, OR press DAY to change to a different program period.
- Repeat above procedure until all desired ON/OFF programs are set.

PLEASE NOTE: Before you program your timer, or when you remove the battery, or when you use the **RESET**, pressing **EVENT** will display the bar symbol -:-- ON 1. Repeated pressing of EVENT will display all the way through the final bar symbol -:-- OFF 6. Once you program your timer, however, each actual time setting you make will replace the bar symbol. While programming, each time you press **EVENT** you will advance to the next **EVENT**.

PROGRAM PERIOD OPTIONS:
Your timer gives you up to 6 different ON and 6 different OFF settings per program period. You can use all 6 settings per period, or as few as you like. A program period covers one of these:
- **ALL 7 DAYS OF THE WEEK** combined into one - display shows: MO TU WE TH FR SA SU.
- **MONDAY THRU FRIDAY** combined into one - display shows: MO TU WE TH FR.
- **SATURDAY AND SUNDAY** combined into one - display shows: SA SU.

- **EACH INDIVIDUAL DAY OF THE WEEK** - display shows only that day.
- **BLANKDAY EXPLANATION** - "BLANKDAY" follows Sunday after last push of DAY button (when the lower slide switch is set at PROGRAM). The purpose of the BLANKDAY is to disable a program setting on a day.

Program periods with days "combined into one" help you make settings for those multiple days quickly and conveniently while using only one ON/OFF pair. When you set such a program period, all settings will be identical for every day of that period.

PERSONAL PROGRAM EXAMPLES

DAY CHECKS	EVENTS ON TIMES	OFF TIMES	DISPLAYED	DAYS & TIMES DISPLAYED	
EXAMPLE 1					
MO TU WE TH FR SA SU	5:00 PM	10:00 PM	ON 1 OFF 1	MO TU WE TH FR SA SU	5:00 PM
EXAMPLE 2					
MO TU WE TH FR	6:00 PM	10:00 PM	ON 1 OFF 1	MO TU WE TH FR MO TU WE TH FR	6:00 PM 10:00 PM
SA SU	4:00 PM	8:00 PM	ON 2 OFF 2	SA SU SA SU	4:00 PM 8:00 PM
EXAMPLE 3					
MO TU WE TH FR	8:00 AM	9:30 AM	ON 1 OFF 1	MO TU WE TH FR MO TU WE TH FR	8:00 AM 9:30 AM
MO TU WE TH FR	5:30 PM	11:15 PM	ON 2 OFF 2	MO TU WE TH FR MO TU WE TH FR	5:30 PM 11:15 PM
SA SU	3:00 PM	10:00 PM	ON 3 OFF 3	SA SU SA SU	3:00 PM 10:00 PM
EXAMPLE 4					
MO TU WE TH	8:00 PM	11:30 PM	ON 1 OFF 1	MO TU WE TH MO TU WE TH	8:00 PM 11:30 PM
FR SA	5:00 PM	2:20 PM (DAY AFTER)	ON 2 OFF 2	SU SU	7:00 PM 10:30 PM
SU	7:00 PM	10:30 PM	ON 3 OFF 3	FR MO	5:00 PM 11:30 PM
			ON 4 OFF 4	SA TU	5:00 PM 11:30 PM
			ON 5 OFF 5	"BLANKDAY" WE	-:- - 11:30 PM
			ON 6 OFF 6	"BLANKDAY" TH	-:- - 11:30 PM

NOTE: "-:- -" follows Sunday after last push of DAY button (when the slide switch is set at PROG). The purpose of the -:- - is to cancel a program setting on that day.

REVIEW YOUR PROGRAM
Slide switch to PROG. Press EVENT button to advance display to each ON or OFF setting. Check days and times displayed. To make a change, follow instructions under "SET YOUR PROGRAM". To delete a displayed set point, press DAY button until "-:- -" is displayed.

GENERAL FEATURES AND HINTS FOR TROUBLE FREE USE
- BUTTON: When you press a button, there is an advance of one time unit; holding a button down advances continuously until released.
- MAINTENANCE: With the exception of battery replacement at 2-3 year intervals, your Intermatic timer is maintenance-free.
- **AFTER THE INSTALLATION IS COMPLETED, THE LOCKABLE HASP SHOULD BE MOVED TO THE UP POSITION TO ENGAGE THE COVER WHEN IT IS CLOSED.**

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