Doheny's®

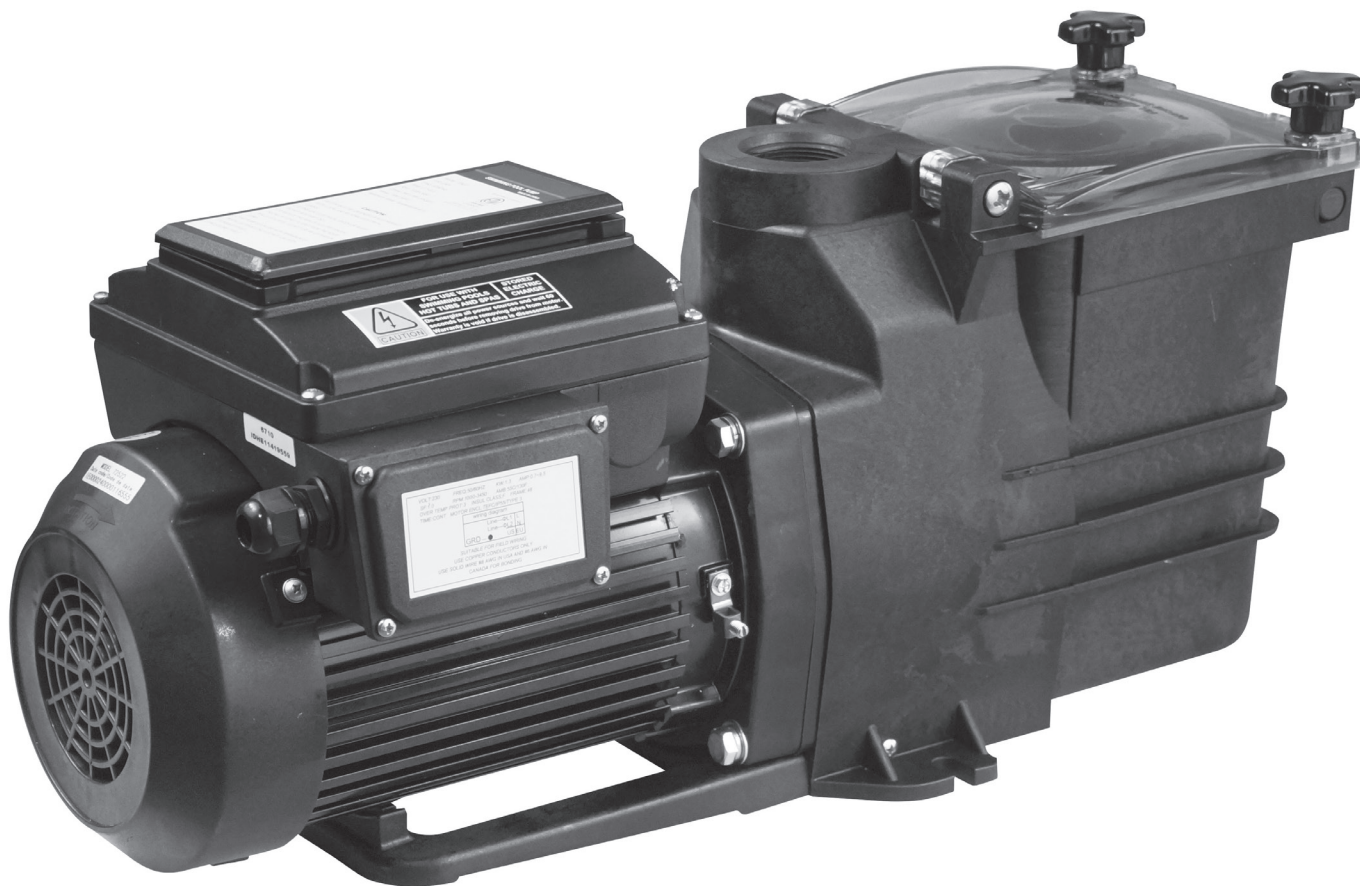**Pool Supplies FAST!**

Inground VS Pumps

Item #s 90500 90550

INSTALLATION, OPERATION & PARTS

To prevent potential injury and to avoid unnecessary service calls, read this manual carefully and completely.

<u>**SAVE THIS INSTRUCTION MANUAL**</u> Use of aftermarket replacement parts voids warranty.

ATTENTION INSTALLER – THIS MANUAL CONTAINS IMPORTANT INFORMATION ABOUT THE INSTALLATION, OPERATION, AND SAFE USE OF THIS PUMP THAT MUST BE PROVIDED TO THE END USER OF THIS PRODUCT. FAILURE TO READ AND FOLLOW ALL INSTRUCTIONS COULD RESULT IN SERIOUS INJURY.

CHAPTER 1:
SAVE THIS INSTRUCTION MANUAL

Brief Introduction

This variable speed pump is designed to operate your swimming pool filtration system as well as your spa, waterfall, cleaner, heater, salt chlorine system and other water applications.

Using the control panel, you can run your pump on one of three scheduled programs:

1. Regular mode: use three quick start buttons.
   ECO (default 1500RPM) CLEAN (default 2400RPM) BOOST (default 3250RPM), and then adjust the pump to run at the speeds you selected.
2. Mode 1: 16 hours for each clean cycle.
3. Mode 2: 24 hours for each clean cycle.

The control panel also has LED indicators for speed as well as alarm indicators and error messages to warn the user against under and over voltage, high temperature, over current and freeze protection.
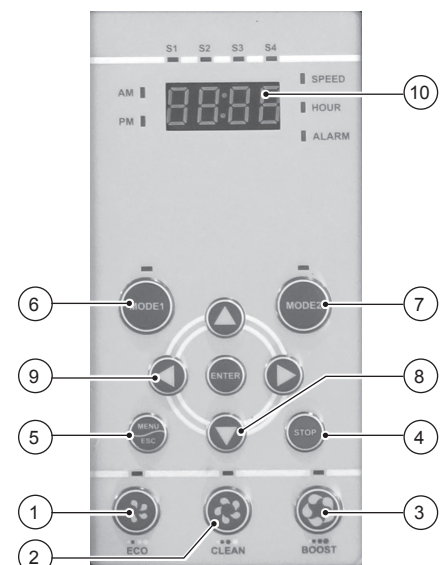
CHAPTER 2:
FEATURES OF LED CONTROL PANEL

1. Display and change time.
2. Display and change running speed.
3. Quick-start button of ECO/CLEAN/BOOST to run on different speed.
4. MODE1/MODE2 for scheduled program (16 hours or 24 hours clean cycle).
5. Re-start and reset to normal schedule after over current, over voltage, over heat, or unexpected power off.
6. Keep records of scheduled programs for maximally 15 days after power off.
7. Password needed when to make change of the program. (not effective now)
8. Run 5 minutes high speed when first start the pump
9. Step-by-step acceleration and deceleration of the speed to extend the use life of the motor and control panel.

CHAPTER 3:
INTRODUCTION OF LED CONTROL BOARD

1. ECO: Press to select and run on default speed 1500PRM, can adjust from 1000 to 2400RPM
2. CLEAN: Press to select and run on default speed 2400PRM, can adjust from 2400 to 2850RPM
3. BOOST: Press to select and run on default speed 3250PRM, can adjust from 2850 to 3450RPM
4. STOP: Press to stop the pump. The screen displays the present time.
5. MENU: Accesses the pump menu if the pump is stopped.
6. MODE 1: Run programmed 16 hours clean cycle.

7. MODE 2: Run programmed 24 hours clean cycle.
8. Enter: Save and exit the menu.
9. ARROW BUTTONS:
   UP ARROW: Move up one level in the menu or to increase a digit when changing a setting.
   DOWN ARROW: Move one level down in the menu or to decrease a digit when changing a setting.
   LEFT ARROW: Moves the cursor left one digit when changing a setting.
   RIGHT ARROW: Moves the cursor right one digit when changing a setting
10. LED Screen: Composed of four digital tubes. Display current time when in standby. Switch current speed and time back and forth when in running.
11. AM/PM: Designed for 12-hour system. If pump run on 0:00-11:59, AM light on; if pump run on 12:00-23:59, PM light on.
12. MODE1 and MODE 2 have 4 stages, S1/S2/S3 S4 is the speed for each stage. If the S1 light is on, the pump is run on first stage, if the light twinkles, the time for the stage is not arrive yet or the pump is not running.
   If SPEED light is on, the screen will display the current RPM.
   If HOUR light twinkles, you are ready to set the running time for each stage.
   If ALARM light is on, an alarm condition exists.
13. Press MODE 1, the light will be lit and one light of S1/S2/S3/S4 will be on or twinkle. (Light twinkle means the current time is not during the set running period), and one of AM or PM light will be on.
14. Press MODE2, the light will be lit and the one light of S1/S2/S3/S4 will be on or twinkle. (Light twinkle means the current time is not during the set running period), and one of AM or PM light will on.
15. When the pump is in standby, switch MODE 1 and MODE2, the corresponding light will be lit, and the pump run accordingly.

Control Board

CHAPTER 4:
STOP AND RUN THE PUMP

Start the Pump
1. Make sure the pump is connected with electricity. When power is on, the display screen will display the time.
2. Press one of ECO/CLEAN/BOOST, the pump will run. The light on the corresponding program will be lit. No matter what program you select, the pump will run on 2850RPM for 5 minutes to eliminate the air in the pump, so the impeller will not dry grind thus to cause leakage. After high-speed running, the pump will run the default speed of the selected program.

Stop the Pump
1. Press STOP of the running pump, the pump will stop. The lights on the screen twinkle.

Change Pump Running Speed
1. When the pump is running ECO/CLEAN/BOOST, press arrow buttons up or down to change the speed, each press is for 50RPM. It will save automatically, no need to press ENTER.
2. Switch between ECO/CLEAN/BOOST during pump operation, the pump will not run 5 minutes high speed again.
3. For MODE 1 and MODE 2, to change speed of S1 and S3, first press CLEAN, if not work, you will need to stop the pump first. After 5 minutes high speed running, press CLEAN, then press arrow button to increase or decrease RPM. When press MODE 1 or MODE 2 again to run the pump, S1 and S3 will run as just selected.
To adjust S2 and S4, first press ECO, if not work, you will need to stop the pump. After 10 minutes high speed running, press ECO, then press arrow button to increase or decrease RPM . When press MODE 1 or MODE 2 again, S2 and S4 will run as just selected.

NOTE: RPM for S2 and S4 or S1 and S3 are always the same. The default for S1 and S3 is 2400RPM, the adjustable range is 2400 to 2850RPM. The default for S2 and S4 is 1500RPM.The adjustable range is 1000 to 2400PRM.

Pump Run Under Pre-Programmed Conditions
Pump has three quick start button ECO / CLEAN / BOOST, as below image. The default speed is 1500, 2400, 3250RPM respectively.
1. Be sure the pump is power on.
2. Press one of ECO/CLEAN/BOOST, the LED light on screen will be lit.
3. The screen will display STUP for 1 second, and run 2850PRM for 5 minutes. After 10 minutes, the pump will run on the selected speed.

1000-2400RPM Default: 1500	2400-2850RPM Default: 2400	2850-3450RPM Default: 3250
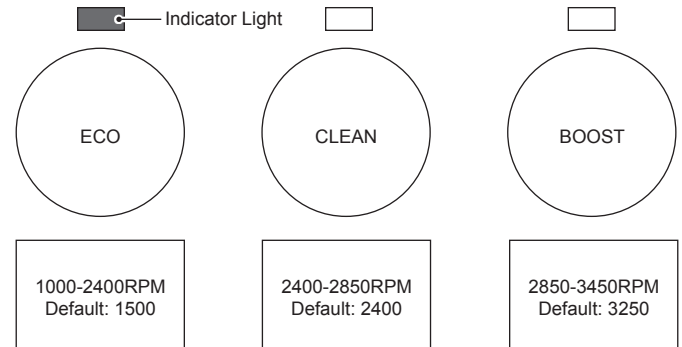
CHAPTER 5:
PUMP RUN UNDER MODE1 / MODE2

Mode 1 / Mode 2 Introduction
Running hours and RPMS are all adjustable.

MODE 1 - 16 Hour Running Cycle				
Stage	Start Time	Running Hour	Default Speed	Quick Start
S1	6:00 am	3 adjustable	2400 RPM	CLEAN
S2	9:00 am	5 adjustable	1500 RPM	ECO
S3	6:00 pm	3 adjustable	2400 RPM	CLEAN
S4	9:00 pm	5 adjustable	1500 RPM	ECO

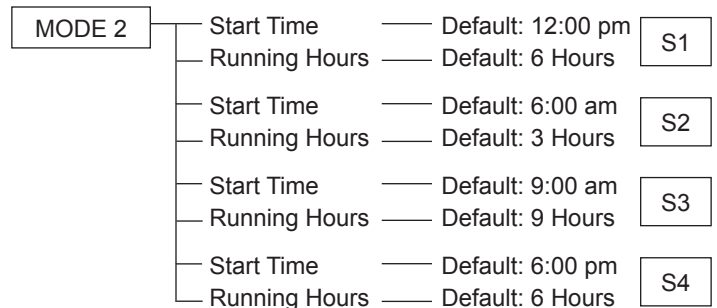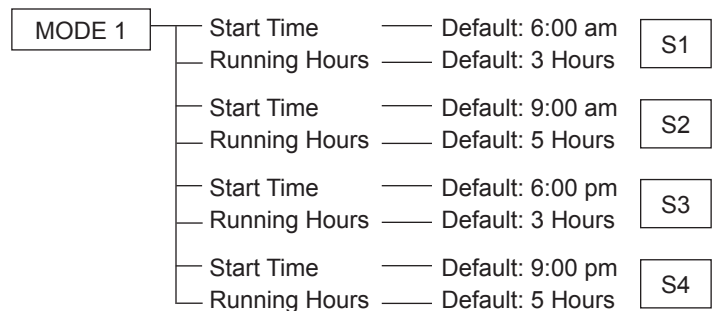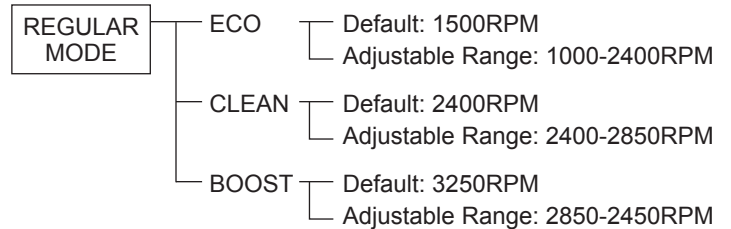| MODE 2 - 24 Hour Running Cycle				
Stage	Start Time	Running Hour	Default Speed	Quick Start
S1	12:00 pm	6 adjustable	1500 RPM	ECO
S2	6:00 am	3 adjustable	2400 RPM	CLEAN
S3	9:00 am	9 adjustable	1500 RPM	ECO
S4	6:00 pm	6 adjustable	2400 RPM	CLEAN

How to Set and Change Specifications of Mode 1 / Mode 2

1. Make sure STOP button is pressed before set up, and pump is not working. Press MENU, LED screen will display the current time (time will not count during set-up), use arrow buttons to adjust the time. LEFT and RIGHT to move the cursor one digit, and UP and DOWN to increase or decrease one digit. (Remarks: 0:00-11:59 is one cycle). For example, the current time is 6:00 and AM light is lit, when change the time after 11:59, the time change to 0:00, PM light will be lit.

2. After time set-up, press ENTER to save and quit. Don't press ENTER if to continue change the specification of MODE1 and MODE 2. Press MENU again, the light of MODE 1 and S1 will be lit, screen display 6:00, and AM light is lit. Use arrow buttons to adjust the time. When the time is over 11:59, PM light will be lit, AM light extinguished.

3. Press ENTER to save and quit after start time set-up. To continue and adjust the running hour, press MENU, then use arrow buttons to increase and decrease running hours. Each press is for 1 hour. Press ENTER to save and quit. Or press MENU to adjust S2/S3/S4, the same adjustment method as S1.

4. Follow MODE 1's adjustment methods to adjust MODE 2.

5. **Could not change speed using arrow buttons when running MODE1/MODE2.** Can only change the speed of MODE 1 and MODE 2 by pressing CLEAN/ECO/BOOST, and then use arrow button UP and DOWN to change the RPM. When it is done, the corresponding speed in MODE 1 / MODE 2 will also change. You could only change according to the matching quick start button. For example, in MODE 1, S1 and S3 is CLEAN, S2 and S4 is ECO; in MODE 2, S1 and S3 is ECO, S2 and S4 is CLEAN.

CHAPTER 6:
HOW TO OPERATE THE PUMP

Programmed Schedules

Totally three pre-programmed schedules: Regular Mode (including ECO; CLEAN; BOOST) and MODE 1/MODE 2. Can change the speed in the mode of ECO/CLEAN/BOOST freely.

REGULAR MODE
- ECO
  - Default: 1500RPM
  - Adjustable Range: 1000-2400RPM
- CLEAN
  - Default: 2400RPM
  - Adjustable Range: 2400-2850RPM
- BOOST
  - Default: 3250RPM
  - Adjustable Range: 2850-2450RPM

MODE 1
- Start Time — Default: 6:00 am / Running Hours — Default: 3 Hours — S1
- Start Time — Default: 9:00 am / Running Hours — Default: 5 Hours — S2
- Start Time — Default: 6:00 pm / Running Hours — Default: 3 Hours — S3
- Start Time — Default: 9:00 pm / Running Hours — Default: 5 Hours — S4

MODE 2
- Start Time — Default: 12:00 pm / Running Hours — Default: 6 Hours — S1
- Start Time — Default: 6:00 am / Running Hours — Default: 3 Hours — S2
- Start Time — Default: 9:00 am / Running Hours — Default: 9 Hours — S3
- Start Time — Default: 6:00 pm / Running Hours — Default: 6 Hours — S4

Control Panel Menu Structure

```
                                              ┌──────────────────┐         ┌──────────────────┐
                                              │  00:00 - 11:59   │─────────│       AM         │
                              ┌────────────┐  └──────────────────┘         └──────────────────┘
                              │            │  ┌──────────────────┐         ┌──────────────────┐
                              │  SET TIME  │  │  12:00 - 23:59   │─────────│       PM         │
                              │            │  └──────────────────┘         └──────────────────┘
                              └────────────┘  ┌──────────────────┐         ┌──────────────────┐
                                              │   TIME SETUP     │─────────│   Default 06:00  │
                                              └──────────────────┘         └──────────────────┘
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	S1	Default 06:00
	R1	Default 3 hours
	S2	Default 09:00
	R2	Default 5 hours
MODEL 1	S3	Default 18:00
	R3	Default 3 hours
	S4	Default 21:00
	R4	Default 5 hours

	S1	Default 06:00
	R1	Default 3 hours
	S2	Default 09:00
	R2	Default 9 hours
MODEL 2	S3	Default 18:00
	R3	Default 6 hours
	S4	Default 24:00
	R4	Default 6 hours

MENU

END
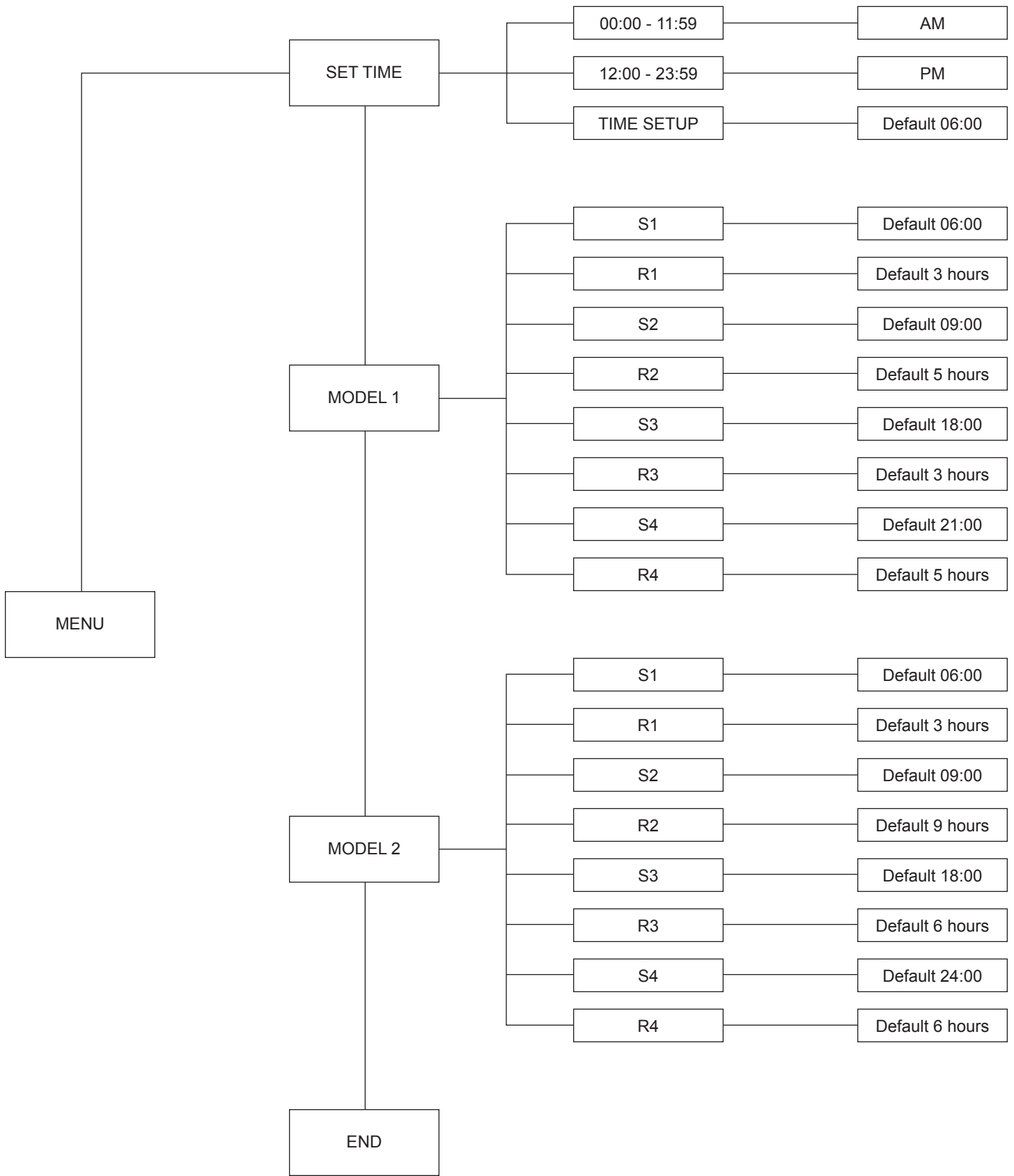
Inground Pump Item #'s 15900 & 15901
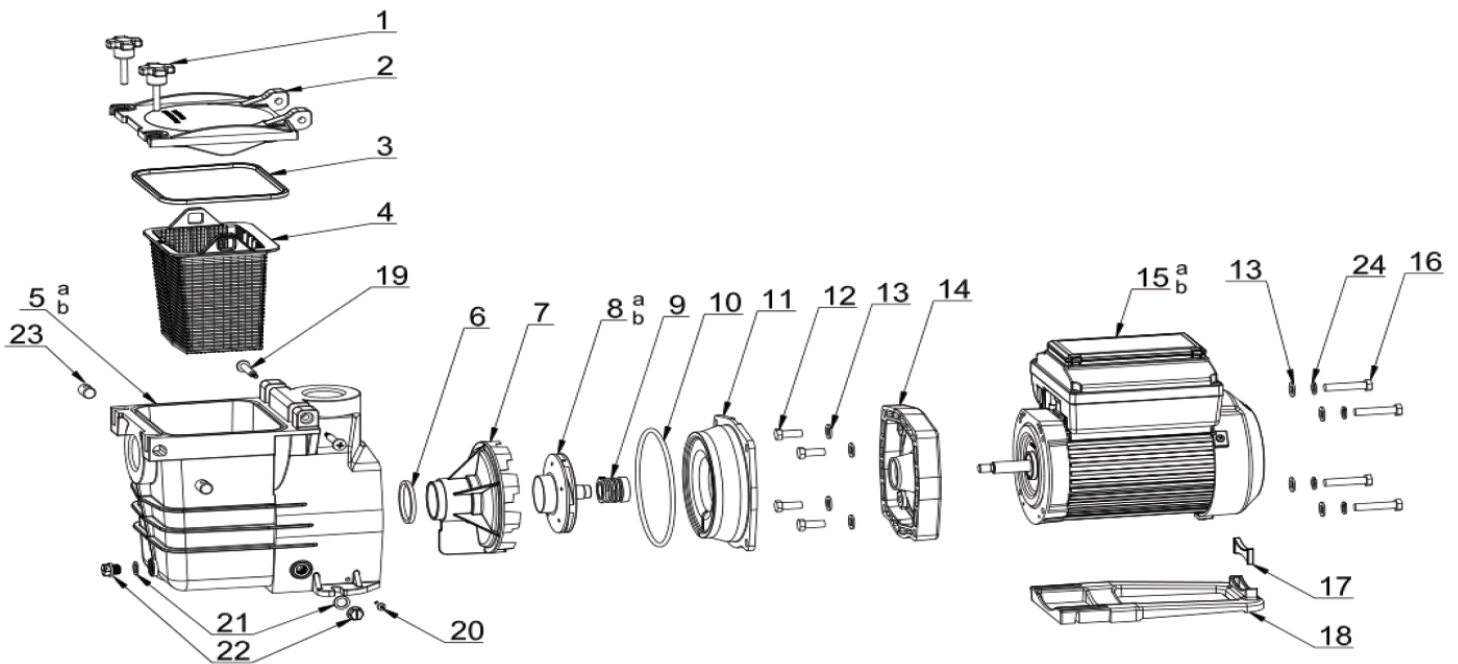
REF No.	PART NUMBER	DESCRIPTION	No. REQ'D
1	648910606080	Handle Screws	2
2	48915102089	Cover	1
3	65432053080	Gasket	1
4	48910402001	Basket	1
5a	648915105080	Pump Housing 1.5"	1
5b	648915104080	Pump Housing 2"	1
6	65432040080	O-Ring	1
7	647258001080	Diffuser	1
8a	89106201	Impeller for 1.5 HP Pump	1
8b	72580071	Impeller for 3 HP Pump	1
9	65028026000	Seal Assembly	1
10	65431121080	O-Ring	1
11	647258002080	Pump Cover	1
12	5225007000	Screw 3/8-16 UNC*25.4mm	4
13	65244015000	Gasket M10	8
14	648910602080	Over Cover	1
15a	65023333000	Variable Speed 1.5 HP Motor	1
15b	65023337000	Variable Speed 3 HP Motor	1
16	65225008000	Screw 3/8-16 UNC *50.8mm	4
17	648912301080	Supporting Foot	1
18	648910608080	Mounting Foot	1
19	65212058000	Screw ST4.8*9	2
20	65212013000	Screw ST4.8*25	2
21	65432002080	Gasket	2
22	648860105080	Drain Plug	2
23	648910607080	Reseller	2
24	65244032000	Spring Washer	4

CHAPTER 7:
PERFORMANCE CURVE
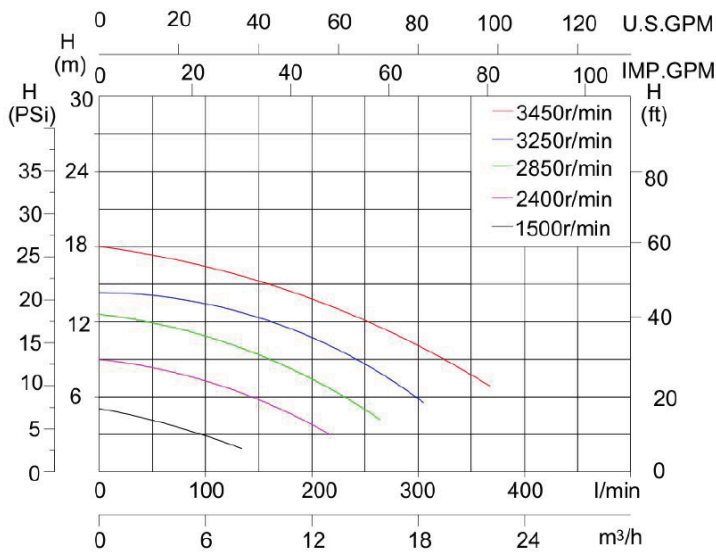
Alert Code Details	
Code	**Error**
1	Blocked/Short Circuit/Overheat
2	Voltage input exceeds limit
4	High input voltage
8	Low input voltage
16	Exceeds maximum speed
32	Speed is 0
64	Motor phase loss
128	Abnormal start-up
256	System configuration error
512	Stall at start-up
1024	System operation error, contact Harris
4096	Hardware test error, contact Harris

CHAPTER 8:
ALERTS & WARNINGS

The pump displays all alerts and warnings on the control panel. When an alarm or warning condition exists, the corresponding LED will be lit on the display. All control panel buttons are disabled until the alarm or warning is acknowledged with the ENTER button, hold the power until display turns off.

POWER OUT FAILURE – Incoming supply voltage is less than 190 VAC.

PRIMING ERROR – If the pump is not defined as primed within the maximum priming time it will stop and generate a priming alarm for 10 minutes, then attempt to prime again. If the pump cannot prime within 5 attempts it will generate a permanent alarm and have to be manually reset.

OVERHEAT ALERT – If the drive temperature gets over 103 Degrees Fahrenheit the pump will slowly reduce speed until the temperature condition clears.

OVER CURRENT – Indicates that the drive is overloaded or the motor has an electrical problem. Once the over current condition clears, the drive will restart.

OVER VOLTAGE – Indicates excessive supply voltage or and external water source is causing the pump and motor to rotate thereby generating excessive voltage in the drives internal DC buss. You can press the STOP button or other mode to re-run the pump.

1 Year Limited Doheny's Pool Pump Warranty

Please read installation instructions before installing pool pump

This pump was inspected before shipment from our warehouse. To original purchasers of this pump, Doheny Enterprises, Inc., 10411 80th Ave, Pleasant Prairie, WI, warrants its products free from defects in materials and workmanship for a period of **ONE** (1) year from the date of purchase.

Parts which fail or become defective during the warranty period, except as a result of freezing, negligence, improper installation, use, or care, shall be replaced, at our option, without charge, within 90 days of the receipt of defective product, barring unforeseen delays.

After 90 days, to obtain warranty replacements, defective components should be returned, transportation paid, to the place of purchase. For further Doheny's service, contact Doheny's customer care department. No returns may be made directly to the factory without the express written authorization of Doheny Enterprises, Inc.

To original purchasers of this pump, Doheny Enterprises, Inc. warrants its pump housing/strainer to be free from defects in materials and workmanship for a period of **ONE** (1) year from the date of purchase.

Strainers which become defective during the warranty period, except as a result of freezing, negligence, improper installation, use or care, or as the result of a use in association with an automatic valving system.

All other conditions and terms of the standard warranty apply.

Doheny shall not be responsible for cartage, removal and/or reinstallation labor or any other such costs incurred in obtaining warranty replacements.

The Doheny Enterprises, Inc. warranty does not apply to components manufactured by others. For such products, the warranty established by the respective manufacturer will apply.

Some states do not allow a limitation on how long an implied warranty lasts, or the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

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

General Maintenance

1. Clean strainer basket regularly. Do NOT strike basket to clean. Inspect strainer cover gasket regularly and replace as necessary.
2. Pumps have self-lubricating motor bearings and shaft seals. No lubrication is necessary.
3. Keep motor clean. Ensure air vents are free from obstruction to avoid damage. Do NOT use water to hose off motor.
4. Occasionally, shaft seals must be replaced, due to wear or damage.

Storage/Winterization

1. Do not purge the system with compressed air. Use only a low pressure (below 5 psi), high volume blower when air purging the pump, filter or piping.
2. Allowing the pump to freeze will void the warranty.
3. Use ONLY propylene glycol as antifreeze in your pool/spa system.
4. Drain all water from pump and piping when expecting freezing temperatures or when storing pump for a long time.
5. Keep motor dry and covered during storage. To avoid condensation/corrosion problems, do NOT cover or wrap pump with plastic film or bags.