IMPORTANT NOTICE - PLEASE READ BEFORE USE

You will need to **ACTIVATE** your STATS console as follows:

1. Download the STATS PC loader software from www.sierrastats.com.
2. Click on “Software Loader/Warranty Registration.
3. Click “Save” This will install loader to your desktop.
4. Power the STATS console with the AD152, 110V power adapter and connect to the PC with the ADC153 USB lead.
5. Switch the console ON. **IMPORTANT:** For the first time, please wait to ensure the driver for the console is installed.
6. Open the STATS Loader program by double clicking the icon on your PC desktop.
7. Complete the activation details. Once activated, this screen will not be displayed again.
8. The console will then be automatically loaded with your software.

NOTES:

- Ensure you update your console every 30 days to ensure you always have the latest software.
- The latest manuals and application guides can be found on our website at www.sierrastats.com.
- You must enter the correct assigned password each time. If you enter an incorrect password three times in succession, the machine will lock up for security reasons. You will then need to contact Sierra Technical Support at 800-648-3976 for un-locking.

ENGINE DIAGNOSTICS = STATS

SIERRA TOUCH AND TEST SYSTEM

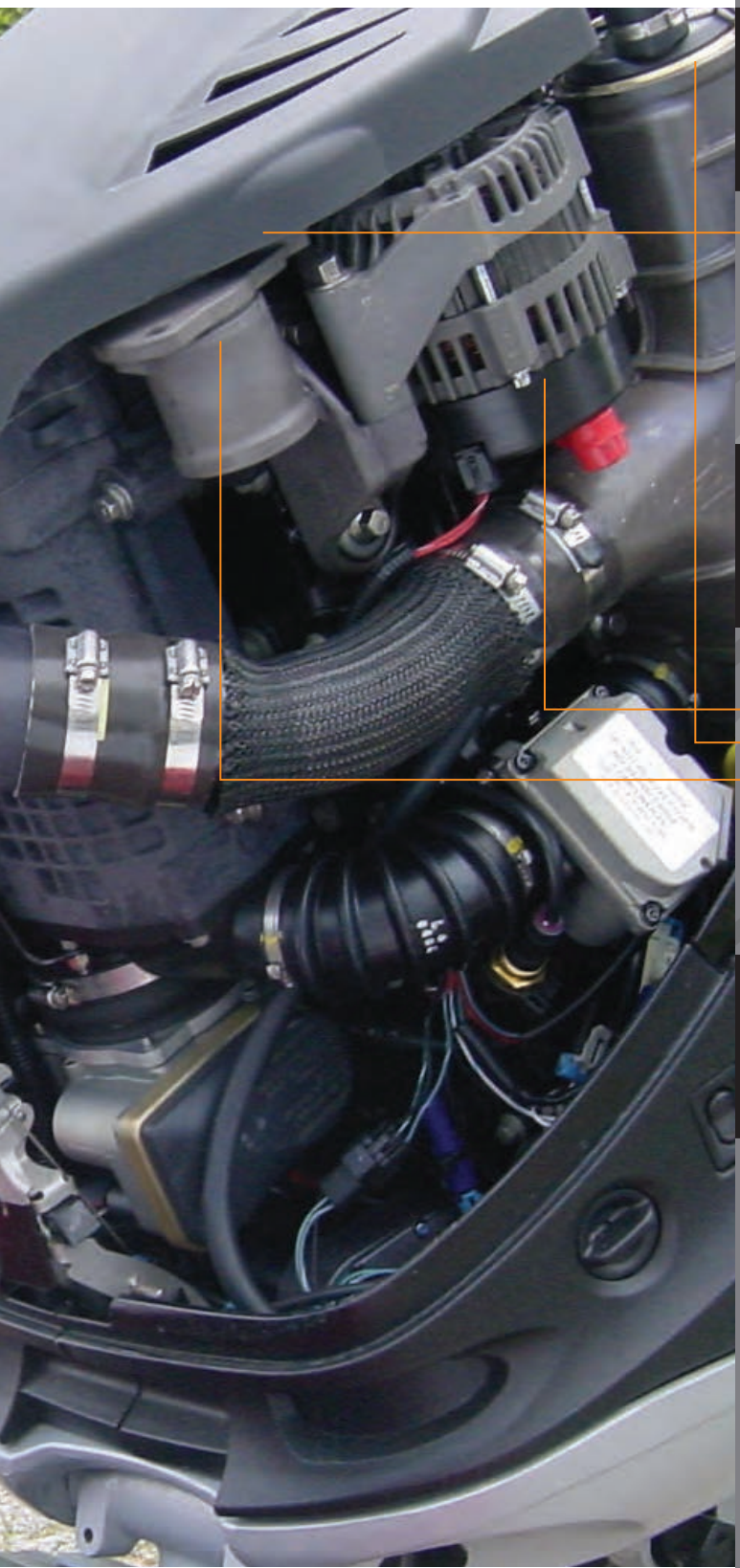
OPERATING MANUAL

Sierra
Marine Engine and Drive Parts

STATS MANUAL - V2.4 JUNE 2013

ONE SYSTEM = MULTIPLE OPERATIONS

STATS
SIERRA TOUCH AND TEST SYSTEM



MULTIPLE ENGINE COVERAGE

MERCURY/MERCRUISER®
YAMAHA®
SUZUKI®
BRP®
MEFI® 1, 2, 3 & 4
(any combination or single engine systems)

MULTIPLE DIAGNOSTICS

DIAGNOSES:
- Ø IGNITION SYSTEM
- Ø ELECTRONICS
- Ø FUEL SYSTEM

ECM HISTORY
READ/CLEAR CODES
TOUCH CONSOLE USER INTERFACE

MULTIPLE BENEFITS

LESS DOWNTIME ✓
MAXIMIZE PERFORMANCE ✓
INCREASE PROFIT ✓
PLUG AND PLAY ✓
INTUITIVE ✓

BACK TO CONTENTS

CONTENTS

VERSION: 2.4 JUNE 2013

1 OPERATING MANUAL

Unlocking Technology

SOFTWARE LICENSE AGREEMENT
The Software contained on the STATS equipment is owned by Sierra International. The customer has no title of ownership of the software, other than the ownership of the physical media that the software is intended to work on. The Copyright of software is owned by Sierra International and any customer responsible for software infringement or violation of this agreement will be held responsible for infringement of the copyright laws.
Sierra International retains the right to erase software from any tester/customer that has been found to infringe these laws.

1 OPERATING MANUAL

Contents

A Precautions

1. The hand held diagnostic tool is an electronic piece of equipment, and although designed for hostile environments it should not be exposed to excessive sunlight, high temperatures or immersed in liquids.
2. Return unit to carrying case when not in use.
3. Observe normal health and safety precautions when using this equipment.
4. Keep clear of all moving objects when near engine compartment.
5. When connecting to vehicle connectors, probe from the back.
6. Ignition circuits generate high voltages, extra precautions and care should be observed when diagnosing these systems.
7. Incorrect connections may damage sensitive electronic devices fitted to the vehicle.
8. Switch off the vehicle ignition when making or breaking connections.
9. Keep the unit away from spark plugs and coil leads to avoid measurement errors.
10. DO NOT disconnect any wiring harnesses or electronic component while ignition is ON.
11. DO NOT disconnect battery while engine is running.
12. Before any work is carried out, consult the vehicle manufacturer's recommended procedures and warranty specs to ensure any work is carried out in accordance with their instructions.

B1

Sierra STATS - INTRODUCTION

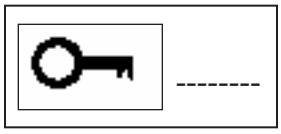
Product Description

The Sierra STATS has been developed to offer diagnostics for marine engines and recreational vehicles.

The Sierra STATS can be used as a hand-held portable diagnostic system, and is equipped with 64MB of RAM which is used for the application data, and 512MB of Flash for the protocol handling system. In addition to this it has a USB interface connection for fast downloads.

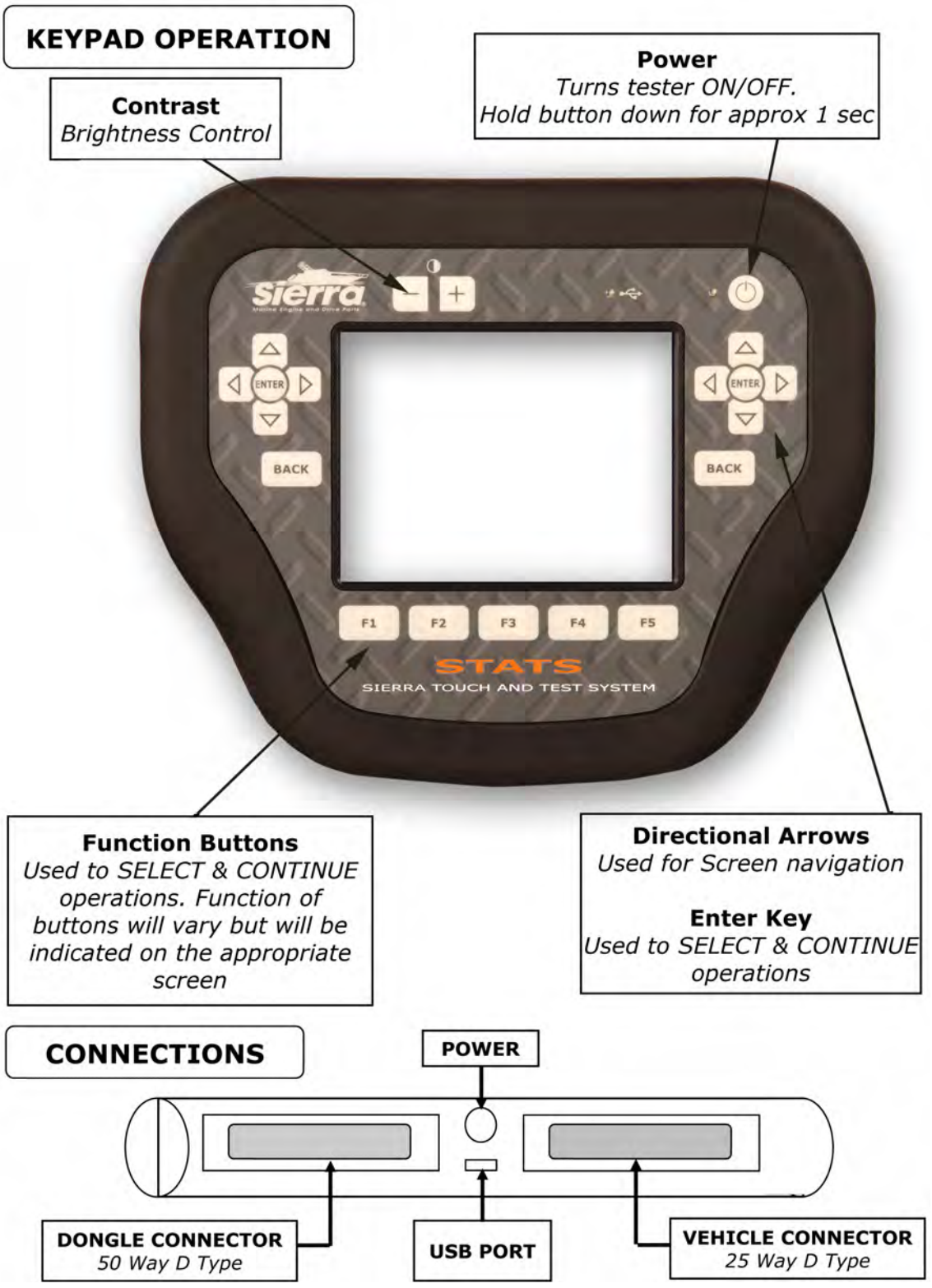
Designed with simplicity in mind Sierra STATS integrates simple color coded dongles that configures the tester, thus reducing the quantity of cables/adaptors required.

The unit is capable of reading/clearing fault codes, displaying live data, programming safety keys, component actuation, service resetting along with other functions that any particular system may allow.

POWER CONNECTION	Powered via the diagnostic socket or through the system wiring through a 25 way D-Type cable system. If no power is available through the vehicle diagnostic socket then the adapter cable will have the vehicle battery connections or adaptor required.
VEHICLE CONNECTION 	The unit is supplied with a range of cables to cover various manufacturers. The smaller adaptor cables use the ADC300 Master Cable, which connects to the tester. These adaptor cables can then be connected depending on which system is being tested.
LCD BACKLIGHT	The LCD BACKLIGHT is automatically switched on when the unit has power. This cannot be switched off or adjusted. If the unit is not used for a period of time the LCD backlight will automatically switch off, and as soon as any key is pressed it will switch back on again.
PASSWORD OPERATED 	To stop unauthorized access the unit is fitted with a password system. If the password is entered incorrectly three times the tester will be erased. For any problems with password operation or software updates, then the unit must be returned to Sierra.
SOFTWARE	Sierra STATS has the ability to store both a **Standard** version and **Beta** version of software. The required software is selected each time the tester is used.

B2 Sierra STATS - GENERAL OPERATION

KEYPAD OPERATION



CONNECTIONS

B2 Sierra STATS - GENERAL OPERATION

Password Operation

To stop unauthorized access the unit is protected by a unique password, which must be entered each time the tester is switched on.

Additionally this password will also be required for a number of other services such as updating software etc.

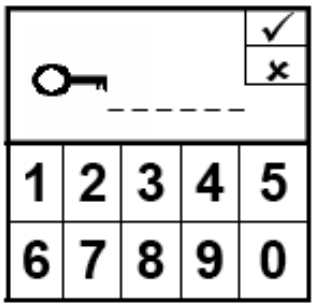


FIG 5

WARNING
If the password is entered incorrectly 3 times the unit will 'lock' and the Sierra STATS will require unlocking.
If this occurs then please contact Sierra at 217-324-9428
The process for unlocking will take up to 48 hours dependant on the time zone
ENSURE THE SCREEN IS CALIBRATED

Engine Connections & Dongles

The unit is supplied with a range of cables to connect to various manufacturers diagnostic sockets. The smaller adaptor cables use the ADC300 Master Cable (Fig 7), which connects to the STATS. These adaptor cables can then be connected depending on which system is being tested.

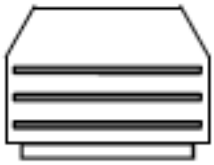
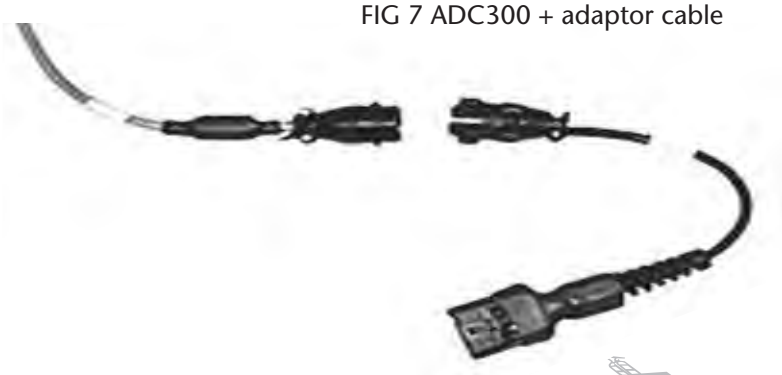


FIG 6

The unit is also supplied with a range of dongles (Fig 6) that configure the tester for the particular system being tested. The tester screen will advise if the incorrect dongle is fitted when the tester attempts to communicate with the vehicle.

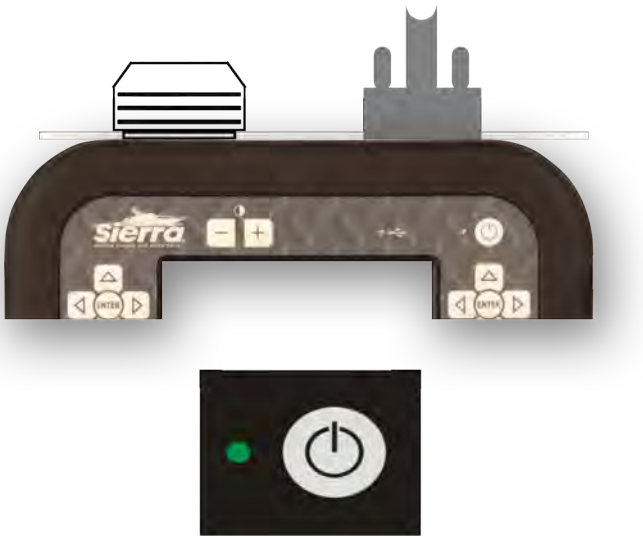
FIG 7 ADC300 + adaptor cable



NOTE: Refer to the appropriate vehicle manufacturer section for which cable and dongle to use.

B2 Sierra STATS - GENERAL OPERATION

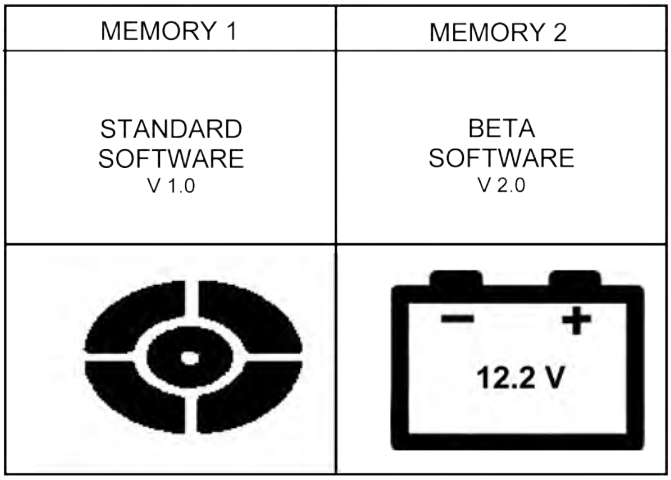
Initial Operation



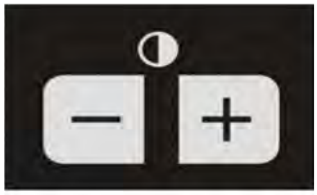
1. Connect the appropriate dongle and diagnostic cable for the vehicle being connected to.

2. Press & Hold the **Power** button until the green LED illuminates / the tester emits a beep.

3. The Main Menu selection screen will appear.
SEE IMPORTANT NOTE BELOW



4. If required the contrast can be adjusted using the '+ or -' buttons.
NOTE: The contrast can be adjusted on any screen.



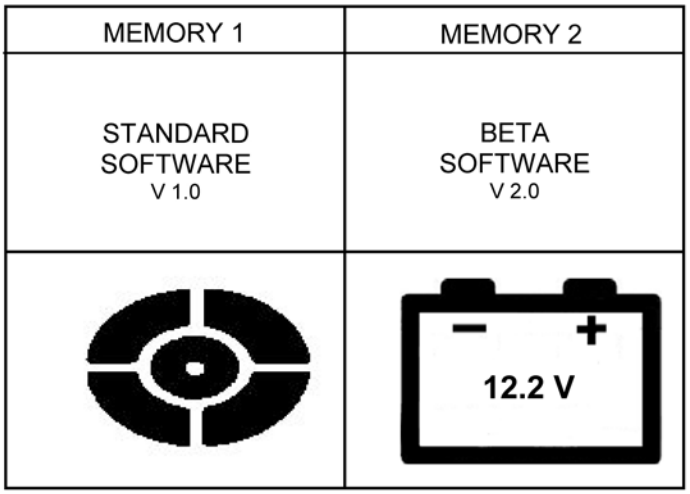
Contrast Adjust Buttons

IMPORTANT
If the Sierra STATS is being loaded from a blank state then the screen calibration process must be completed initially. If the unit is blank and any part of the screen is touched the unit will enter the calibration process.

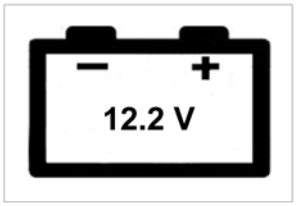
B2

Sierra STATS - GENERAL OPERATION

Main Menu

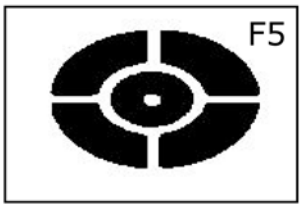


To select a function either press the **Function buttons (F1 to F5)** or touch the appropriate icon.



Battery Voltage

This displays the battery voltage of the vehicle it is connected to. Ensure the battery voltage is sufficient before proceeding. Note the voltage is displayed inside the icon and is not a selectable function.



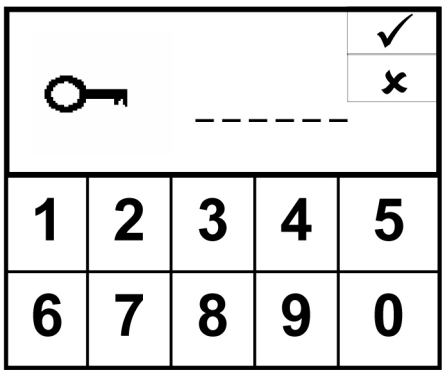
Calibration

This function is selected to calibrate the touch screen. Once selected a '+' will appear on the screen. The user must touch the centre of this cross either with a finger or pointer (not sharp and careful not to damage screen). When the '+' has been selected, another '+' will appear in a different area of the screen, which must be touched centrally again.
Repeat this for all the '+' that appear on the screen. Once complete the screen will indicate that calibration was successful and then revert to the main menu.

Engine Selection

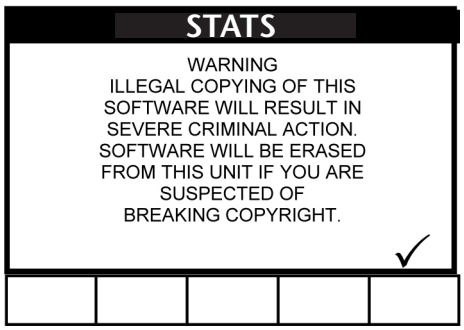
This function is selected to proceed to the **Engine Selection** menu.

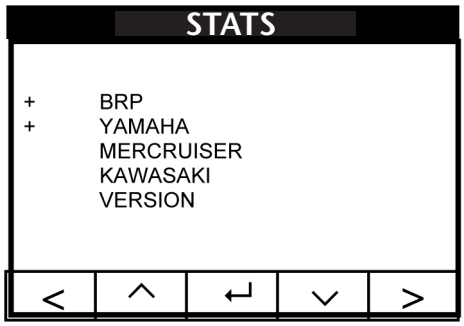
B2 Sierra STATS - GENERAL OPERATION



Enter the 6 Digit security code using the screen keypad. The numbers will appear as they are typed. Confirm that the correct security code has been entered.

WARNING
If the password is entered incorrectly 3 times the unit will 'lock' and the Sierra STATS will require unlocking.
If this occurs then please contact Sierra at 217-324-9428
The process for unlocking will take up to 48 hours dependant on the time zone
ENSURE THE SCREEN IS CALIBRATED





Using the arrows, select the required manufacturer and then press ENTER.

NOTE: For further information and operation refer to the specific application manual.

B3 Sierra STATS - FUNCTIONALITY

The functionality of the software will vary depending upon the engine.
Typical functions are as follows :

FAULT CODES	**READING FAULT CODES** Lists fault codes that are stored on the vehicle. NOTE : Fault codes can be either current, historic or intermittent. **CLEARING FAULT CODES** Allows fault codes to be cleared.
LIVE DATA	Allows values of certain components to be displayed in real time (ie battery voltage, throttle pot voltage, injector opening).
ACTUATOR OPERATION	Allows actuators to be operated via the tester to check they are working e.g. Injectors, Relays, Ignition Coils.
SPECIAL FUNCTIONS	A variety of functions that are available, dependant upon the system (ie all systems do not have the same options available).

B4 Sierra STATS - SOFTWARE UPDATE

Introduction

Sierra is constantly improving the existing software and developing new software. To ensure you get all software updates it is recommended that you connect to the Sierra website and download the latest software on a regular basis ie every 2 weeks.

Sierra STATS has the ability to store both a Standard version and Beta version of software. The required software is selected each time the tester is used.

Each time you have downloaded new software, re-calibrate the touch screen.

Downloading Software

The following procedure will guide you through the necessary steps to download the software.

Step 1 - Software Loader

a. Visit our website at www.sierrastats.com

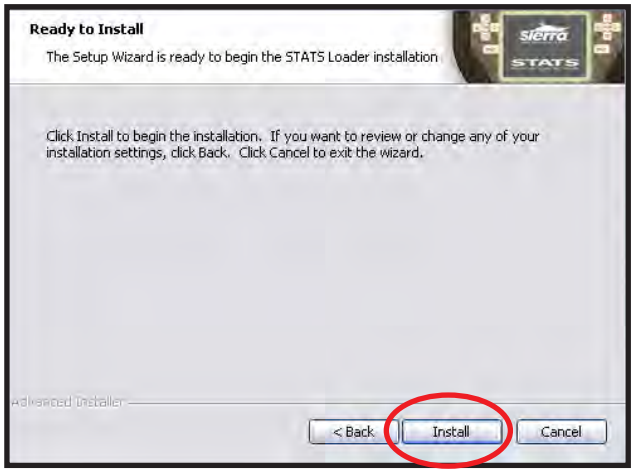
b. Select the Software Loader/warranty registration link and download to your computer.

Note: You will need to either download the 32 bit version or 64bit version dependant upon your PC.

c. Follow the on-screen instructions in the dialog boxes that appear.

NOTE: For further information and operation refer to the specific application manual.

B4 Sierra STATS - SOFTWARE UPDATE



d. At this stage your PC may display a warning about the installation not being verified. Select allow/continue...

e. Once you click finish, the Software Loader will launch automatically (providing the check box is ticked)

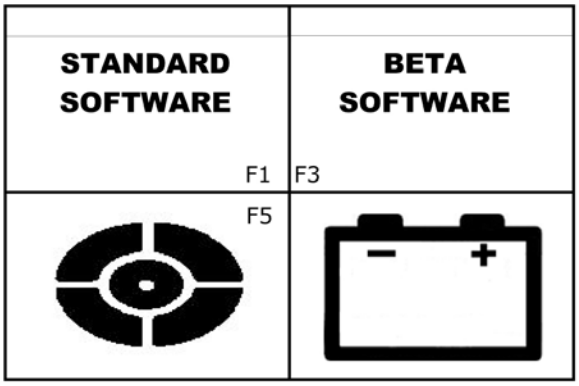
B4 Sierra STATS - SOFTWARE UPDATE

Updating Your Tester

A. Connect the power cable to the STATS.

B. Connect the USB cable between PC and STATS.

C. Turn the tester on and leave with the main menu being displayed.



D. The first time the tester is connected to the PC, the PC will detect new hardware and install the driver. Leave the PC to fully install the driver before proceeding.

Note:

- It is important that you always have the latest version of download program loaded on your PC.
- The version number can be found in the title bar of the Sierra STATS Loader program when launched.
- When loading a new version of the Loader program you must fully uninstall the previous version.

E. Open the Sierra STATS Loader program from your desktop by double clicking the icon on your desktop.

F. The Loader program will open.
The Loader program version number will appear in the top right-hand corner of the program.

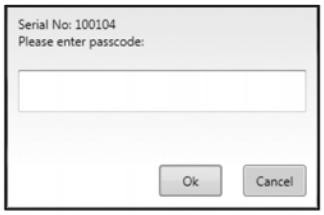
As the loader opens it performs a series of automatic checks as follows:

- If you don't have the latest loader program installed on your PC, a message advising you will appear and then take you through the process of automatically updating to the latest version.
  NOTE: There is no need to uninstall the old loader program first.

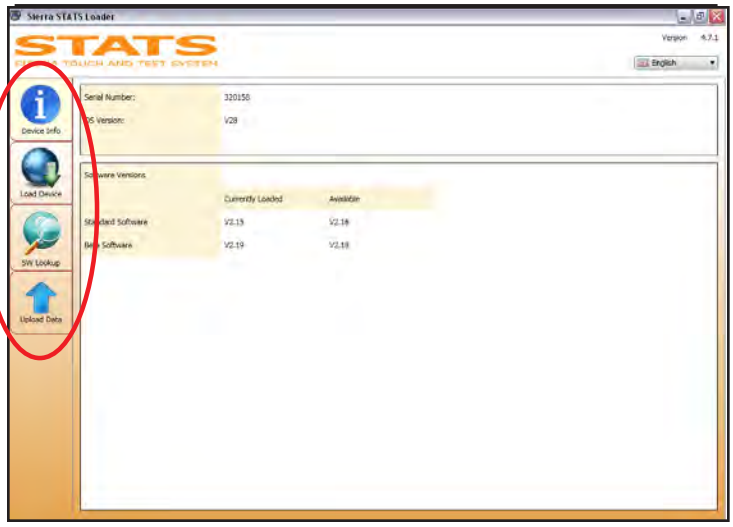
- If you are able to connect to the internet and www.sierrastats.com website.
  If you have a connection problem indicated after this test, you will need to check your firewall/anti-virus program settings with someone that understands how to configure the settings.

G. Click 'GO' icon (green arrow).

B4 Sierra STATS - SOFTWARE UPDATE



H. Enter the tester 6 digit passcode



I. The DEVICE INFO screen will be displayed. The other options are listed down the left hand side of the dialog box. The options are:

Device Info - Details information regarding your tester. It also indicates the version of software you currently have loaded on your tester and the version available on the website for download.

Load Device - Enables you to update your tester.

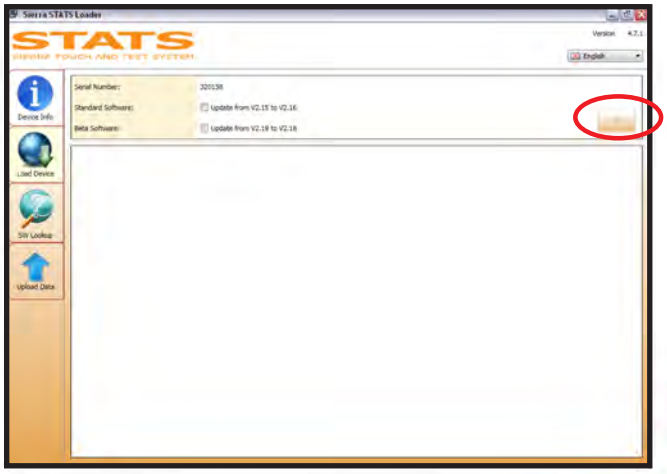
Software Lookup - Lists the software that 'YOU HAVE' and 'DON'T HAVE' loaded on your tester

Upload Data - Loads saved data from STATS console to PC to view/save/or print.

B4 Sierra STATS - SOFTWARE UPDATE

J. SOFTWARE LOOKUP

Two tabs listing the software that 'YOU HAVE' and 'DON'T HAVE' for standard and beta software.



K. LOAD DEVICE

Enables you to update your tester

Tick the appropriate check boxes (or both) depending on what software you wish to update (ie Standard or Beta)

i) When either Standard or Beta is selected it will be downloaded & previous software versions on the tester are over written.

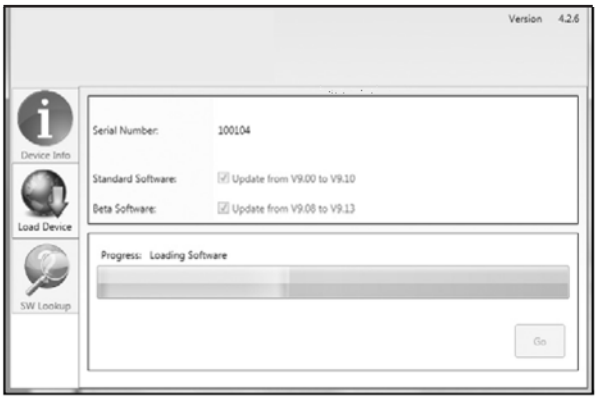
ii) If the unit has no software loaded, then Standard software must always be loaded onto the tester prior to loading Beta or both at the same time.

iii) Please note that BETA software is the latest software that we are working on and is not fully tested, however it allows customers to use the latest software at their own risk.

WARNING
IF YOU CHOOSE BETA SOFTWARE, THIS IS ENTIRELY AT YOUR OWN RISK.
SIERRA TAKES NO RESPONSIBILITY FOR THIS SOFTWARE

B4 Sierra STATS - SOFTWARE UPDATE

L. Once at least one check box has been ticked, the GO button will become active.



M. Click GO, the tester will now be updated.
Notes:
i) If there is a newer version of operating software (OS) for the tester, the loader will indicate.
ii) Do not disconnect the tester during the update procedure.
iii) The red USB LED on the tester flashes during data transfer.

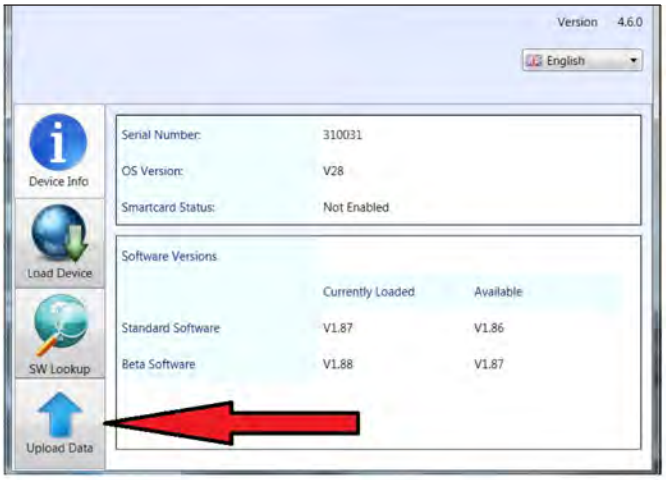
N. Click OK when completed. The tester has now been fully updated and can now be disconnected.

After Downloading new software, re-calibrate your screen

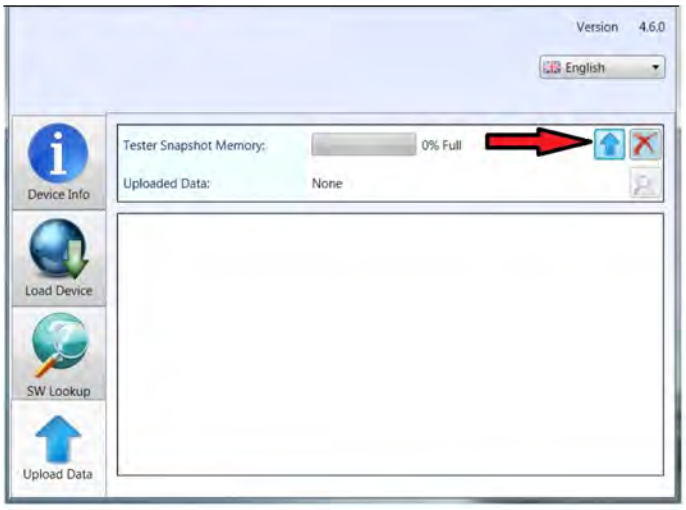
WARNING
If the password is entered incorrectly 3 times the unit will 'lock' and the Sierra STATS will require unlocking.
If this occurs then please contact Sierra at 217-324-9428
The process for unlocking will take up to 48 hours dependant on the time zone
ENSURE THE SCREEN IS CALIBRATED

B5 Sierra STATS - SAVE/PRINT DATA

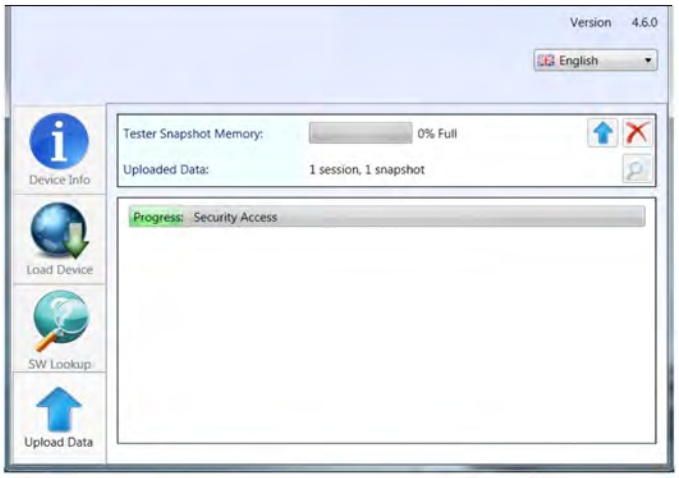
These screenshots provide a step by step guide on how to view & either save or print data from the tester - using the loader program.



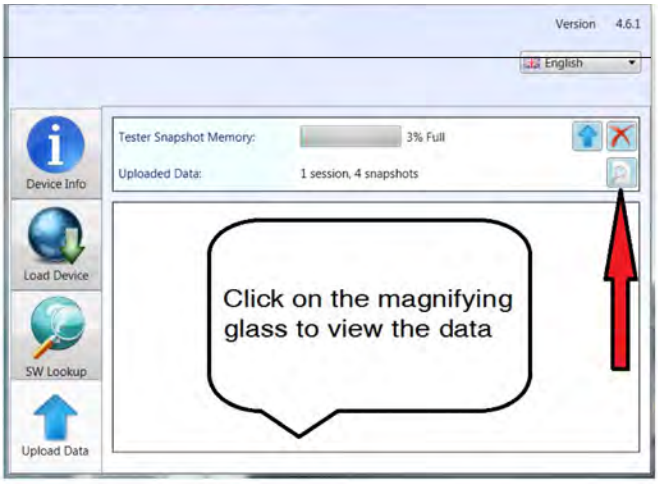
Click on the large arrow

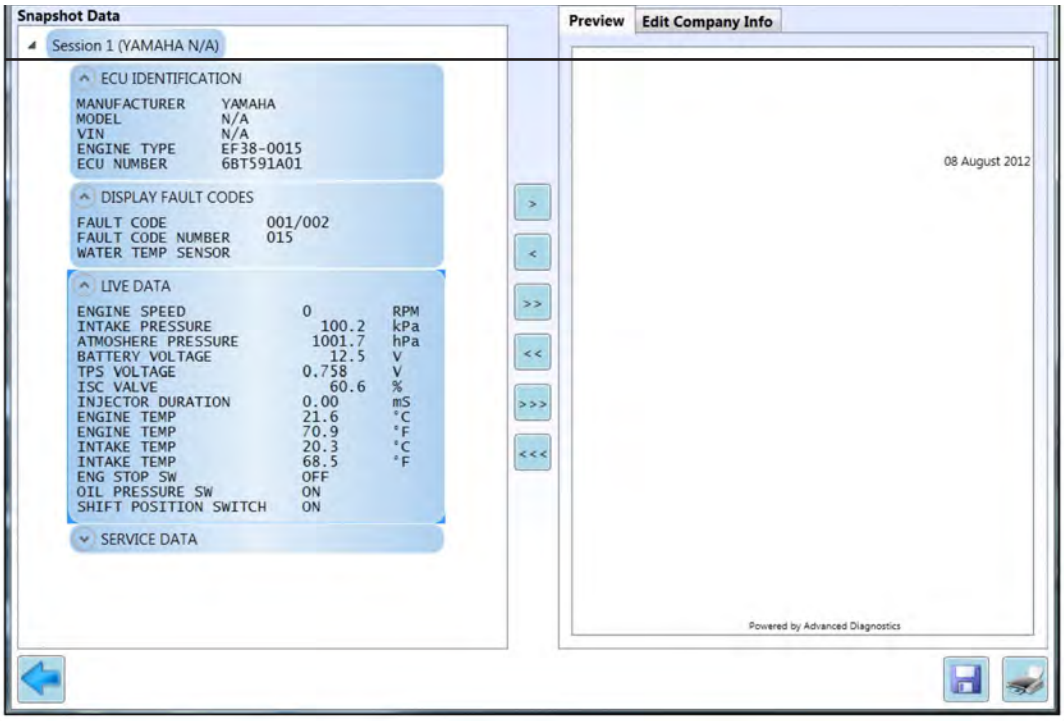


Click on the small arrow & Data will be uploaded from the tester



B5 Sierra STATS - SAVE/PRINT DATA

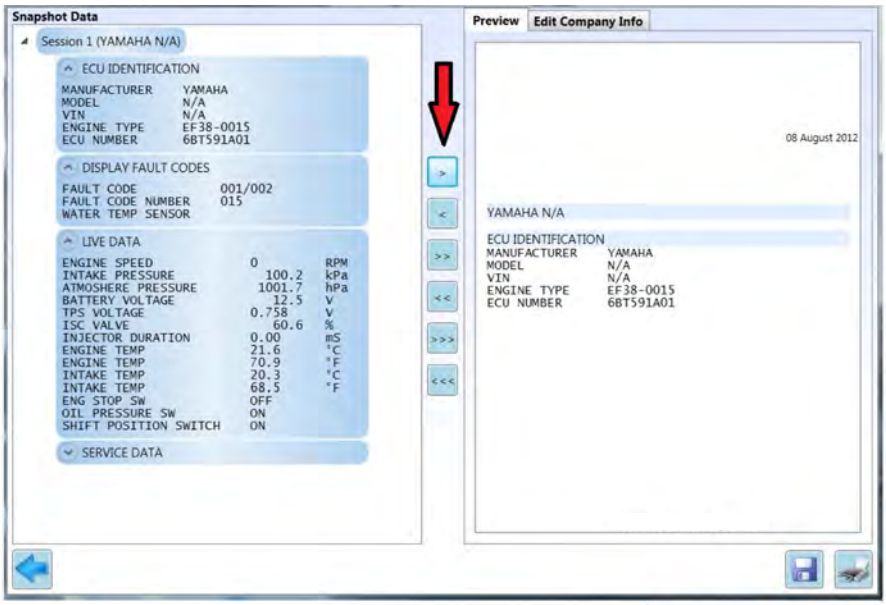




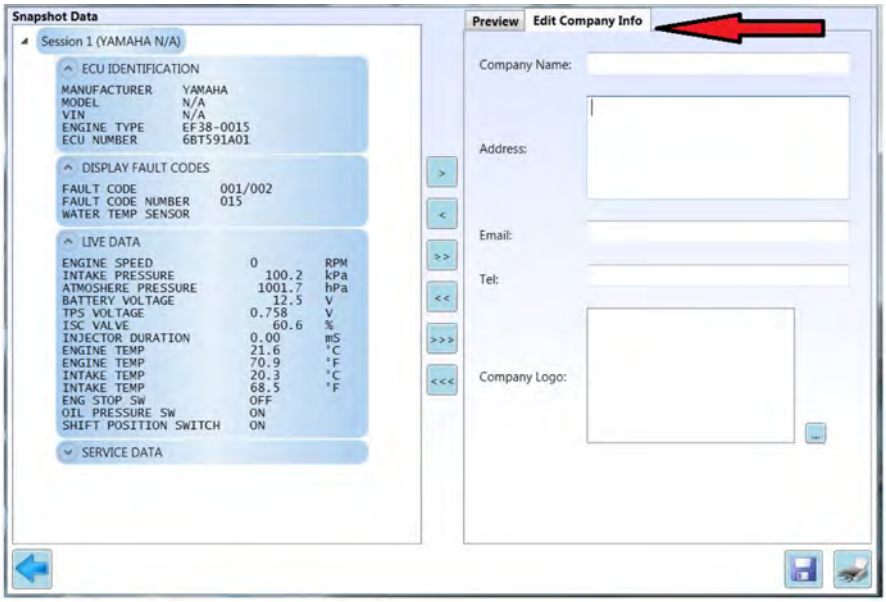
Data is stored on a drop-down tree on the left side of the window—click to view
Each separate session is started when you power up the tester and select a manufacturer.
As a guide, a maximum of approx 20 sessions can be recorded, dependant upon how much data is in each individual session.

B5 Sierra STATS - SAVE/PRINT DATA

Data can be moved across using the arrows here. The data that is moved, is the data that you wish to save/ print.



Workshop data is entered here including a company logo.



C SPECIFICATION

DESCRIPTION	**SPECIFICATION**
	Sierra STATS
OPERATING SUPPLY	12 - 27 VOLTS DC
USER INTERFACE	KEYPAD & TOUCHSCREEN
DISPLAY	128x64 Dot Matrix Back Lit LCD TFT
COMMUNICATION PROTOCOLS	J1850 ISO9141 SCP 5 VOLTS CCD & VPW ISO 11898-2 HIGH SPEED CAN ISO 11992 CAN
PC INTERFACE	USB
REVERSE POLARITY PROTECTION	YES
SIZE (INCHES)	10.43 X 8.66 X 1.96
WEIGHT	2lb 4.33oz
MEMORY	512KB RAM 64MB FLASH
STORAGE TEMPERATURE	32°F to 122°F
OPERATING TEMPERATURE	41°F TO 104°F
CURRENT CONSUMPTION	200mA 360mA (Back Lit)

2 YAMAHA

OPERATING MANUAL

Contents

2 YAMAHA-A APPLICATIONS

Yamaha Jet Ski's

			DTC 12,14			
GP1300R (2 STROKE)	2003⇨2008	✓	✓	✓	ADC300 + ADC403	A
VX (4 STROKE)	2007⇨2009	✓	✓	✓	ADC300 + ADC403	A
VX CRUISER (4 STOKE)	2007⇨	✓	✓	✓	ADC300 + ADC403	A
VX CRUISER DELUXE (4 STROKE)	2005⇨	✓	✓	✓	ADC300 + ADC403	A
VX SPORT (4 STROKE)	2005⇨	✓	✓	✓	ADC300 + ADC403	A
FX (4 STROKE)	2002⇨2009	✓	✓	✓	ADC300 + ADC403	A
FX CRUISER (4 STROKE)	2003⇨2009	✓	✓	✓	ADC300 + ADC403	A
FX HIGH OUTPUT (4 STROKE)	2004⇨	✓	✓	✓	ADC300 + ADC403	A
FX CRUISER HIGH OUTPUT (4 STROKE)	2004⇨	✓	✓	✓	ADC300 + ADC403	A
FX SUPER HIGH OUTPUT (4 STROKE)	2008⇨	✓	✓	✓	ADC300 + ADC403	A
FX CRUISER SUPER HIGH OUTPUT (4 STROKE)	2008⇨	✓	✓	✓	ADC300 + ADC403	A
FZR (4 STROKE)	2003⇨2008	✓	✓	✓	ADC300 + ADC403	A
FZS (4 STROKE)	2003⇨2008	✓	✓	✓	ADC300 + ADC403	A

Yamaha Jet Ski's Remote Control Programming

GP1300R (2 STROKE)	2003⇨2008	✓	ADC300 + ADC418	A
VX (4 STROKE)	2007⇨2009	✓	ADC300 + ADC418	A
VX CRUISER (4 STROKE)	2007⇨	✓	ADC300 + ADC418	A
VX CRUISER DELUXE (4 STROKE)	2005⇨	✓	ADC300 + ADC418	A
VX SPORT (4 STROKE)	2005⇨	✓	ADC300 + ADC418	A
FX (4 STROKE)	2002⇨2009	✓	ADC300 + ADC418	A
FX CRUISER (4 STROKE)	2003⇨2009	✓	ADC300 + ADC418	A
FX HIGH OUTPUT (4 STROKE)	2004⇨	✓	ADC300 + ADC418	A
FX CRUISER HIGH OUTPUT (4 STROKE)	2004⇨	✓	ADC300 + ADC418	A
FX SUPER HIGH OUTPUT (4 STROKE)	2008⇨	✓	ADC300 + ADC418	A
FX CRUISER SUPER HIGH OUTPUT (4 STROKE)	2008⇨	✓	ADC300 + ADC418	A
FZR (4 STROKE)	2003⇨2008	✓	ADC300 + ADC418	A
FZS (4 STROKE)	2003⇨2008	✓	ADC300 + ADC418	A

2 YAMAHA-A APPLICATIONS

Yamaha Outboards

		DTC 12,14				
4 Stroke EFI: F275	2008- UP	✓	✓	✓	ADC300 + ADC403	A
4-Stroke EFI: F115, 150, 200, 225HP	2000- UP	✓	✓	✓	ADC300 + ADC403	A
4-Stroke EFI: F40, 50, 60, 90, 250, 300	2000- UP	✓	✓	✓	ADC300 + ADC403	A
HPDI: 150, 175, 200, 225, 250, 300HP	1998- UP	✓	✓	✓	ADC300 + ADC403	A
Requires cables ADC300 + ADC403 for all above applications						

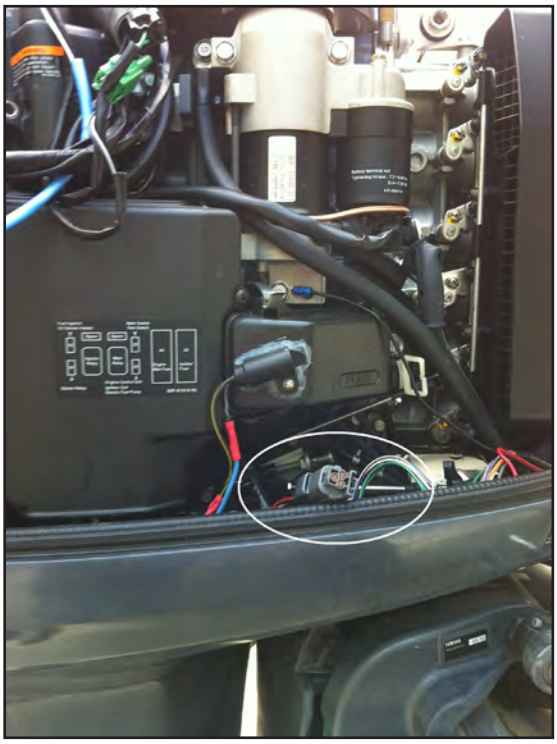
2 YAMAHA-B

DIAGNOSTIC SOCKET LOCATIONS

YAMAHA VX CRUISER
REMOTE CONTROL PROGRAMMING CONNECTOR

YAMAHA VX CRUISER

YAMAHA 250HPDI



Connector can be located on starboard side of engine, laying down in the lower cowling.

YAMAHA 150 EFI

Can be found on front of engine about half way up the powerhead.

2 YAMAHA-C

GENERAL OPERATION

Yamaha

READ FAULT CODES
Displays the list of diagnostic trouble codes that are currently on the engine. Each fault code needs to be investigated and fixed, then the CLEAR FAULT CODES function can be used to clear the memory.

CLEAR FAULT CODES
This functions allows any fault codes that have been fixed to be cleared.

LIVE DATA
This function displays a list of LIVE DATA values from the engine ECU. This data list is what is available from the engine ECU, and each value will change as the engine components are operated. Please refer to vehicle manufacturers data for correct values and correct operating limits.

STATIONARY TESTS
This option allows you to :
1. Activate any fuel injector
2. Operate any ignition coil
3. Turn the fuel pump ON

ACTIVE TESTS
These tests can be operated while the engine is running. These tests are useful if there is a problem when the engine is running, and these option can be used to help identify the cause of the problem. For example the Cylinder drop test.

ENGINE HOURS
This function displays the engine running hours of the craft, and will indicate what speeds the engine has done and the overall hours the engine has been used.

CYLINDER DROP TEST
This allows you to isolate a cylinder that's not operating properly, by shutting off the fuel to the cylinder for a moment to see what effect this has on the overall engine performance.

2 YAMAHA-D FAULT CODES

Yamaha

1	Normal -- No Trouble
13	Incorrect Pulsar Coil Signal
14	Crank Position Sensor
15	Incorrect Engine Temperature sensor signal
17	Knock Sensor
18	Throttle Position Sensor Malfunction
19	Battery Voltage
22	Atmospheric Pressure Sensor
23	Intake Temperature Sensor Malfunction
24	Camshaft Position sensor (EXH)
25	Fuel Pressure Sensor
26	Injector
27	Water in Fuel
28	Shift Position Sensor
29	Intake Pressure Sensor
37	Intake Air Passage
39	Oil Pressure Sensor
40	Shift Position Sensor
41	Intake Pressure Sensor
44	Engine Stop lanyard Switch
45	Shift Cut-Off Switch
46	Overheat Thermister
47	Incorrect slant Detection Switch Signal
48	Incorrect Data Transmission
49	Overcooling
59	ECM Memory Data
68	Variable Camshaft Timing Starboard Valve Pulley Abnormal Advance
69	Variable Camshaft Timing Port Valve Pulley Abnormal Advance
71	Camshaft Position Sensor Starboard INT
72	Camshaft Position Sensor Port INT
73	Oil Control Valve Starboard
74	Oil Control Valve Port
85	ION Detection Module
86	Immobilizer
112	Electronic Throttle System -- ECM_Sub
113	Electronic Throttle System -- ECM_System
114	Electronic Throttle System -- ECM_Main
115	Electronic Throttle System -- Throttle Valve_Open
116	Electronic Throttle System -- Throttle Valve_Close
117	Electronic Throttle System -- Driving Motor P_Short
118	Electronic Throttle System -- Driving Motor N_Short
119	Electronic Throttle System -- Motor Connector_Open
122	Electronic Throttle System -- Driving Motor_Heat
123	Electronic Throttle System -- Driving Motor_Relay
124	Main Throttle Position Sensor Open
125	Main Throttle Position Sensor Short
126	Throttle Position Sensor Character Fail
127	Sub Throttle Position Sensor Open
128	Sub Throttle Position Sensor Short
129	Main Throttle Position Sensor
131	Accelerator Position Sensor
132	Accelerator Position Sensor

2 YAMAHA-D

FAULT CODES

Yamaha

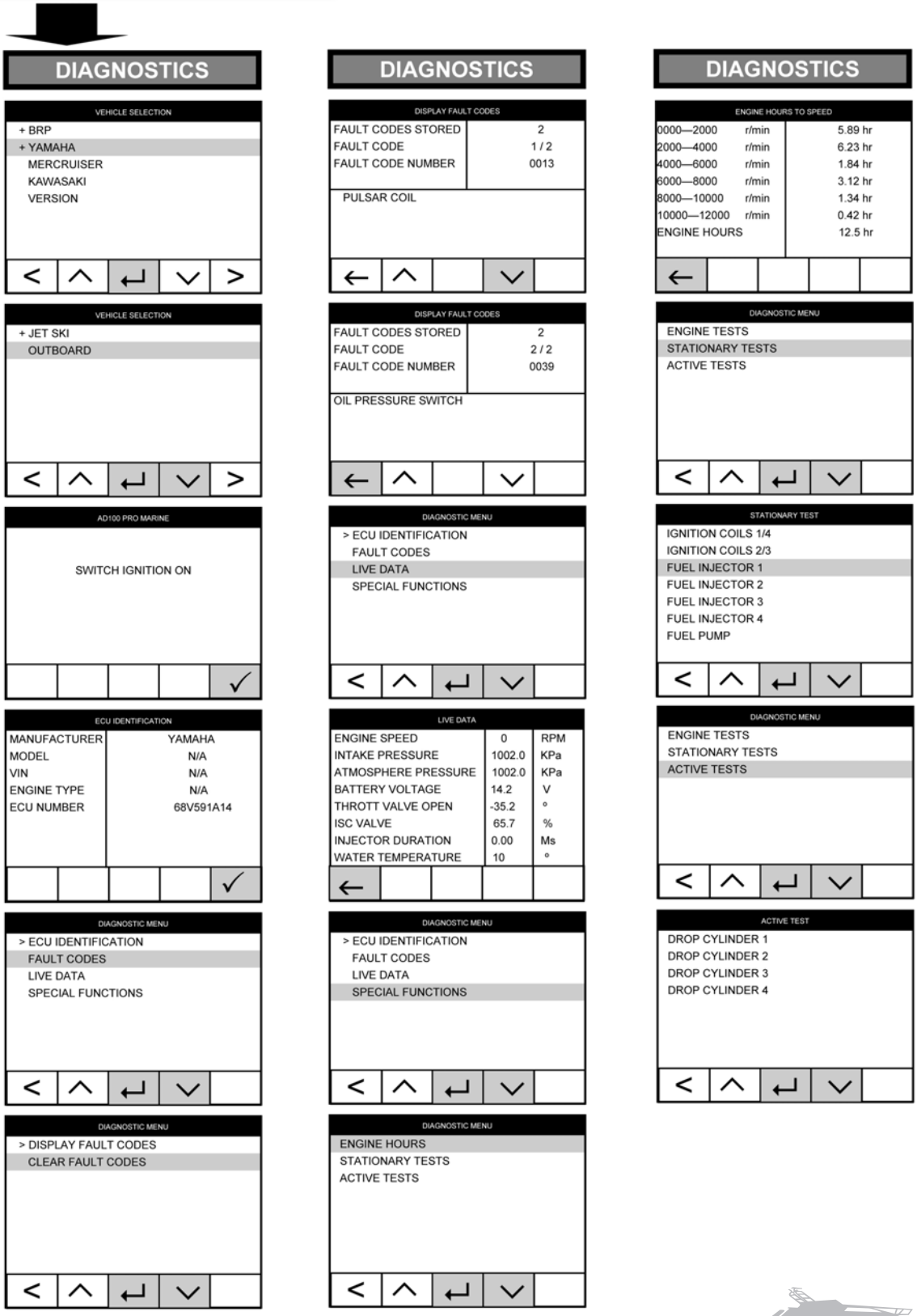
133	Accelerator Position Sensor
134	Accelerator Position Sensor
135	Accelerator Position Sensor
136	Electronic Throttle System-- Communication Error_Main
137	Electronic Throttle System-- Communication Error_Sub
138	Electronic Throttle System-- ECM_Main
139	Electronic Throttle System-- ECM_Sub
140	Electronic Throttle System--
141	Electronic Throttle System-- Throttle Position Sensor Voltage
142	Electronic Throttle System-- Return Spring
143	Electronic Throttle System-- Communication Error
144	Electronic Throttle System-- Low Voltage Mode
145	Electronic Throttle System-- Throttle Valve
146	Main Shift Position Sensor (PWR Short/ GND Open)
147	Main Shift Position Sensor (PWR Open/ GND Short)
148	Sub Shift Position Sensor (PWR Short/ GND Open)
149	Sub Shift Position Sensor (PWR Open/ GND Short)
150	Shift Position Sensor_ Character_Fail
153	Shift Motor_Over Current
154	Shift Motor_Deadlock (while Stopping)
155	Shift Motor_Deadlock (While Operation)
156	Communication Error 1ch (Engine-remo con)
157	Communication Error 2ch (Engine-remo con)
160	Main ST lever position sensor 1 main (PWR_Short/ GND Open)
161	Main ST lever position sensor 1 main (PWR_Open/ GND Short)
162	Main ST lever position sensor 1 Sub (PWR_Short/ GND Open)
163	Main ST lever position sensor 1 Sub (PWR_Open/ GND Short)
164	Main ST lever position sensor 1_watching fail
165	Main ST lever position sensor 1_character fail
166	Main ST lever position sensor 2 main (PWR Short/ GND open)
167	Main ST lever position sensor 2 main (PWR Open/ GND Short)
168	Main ST lever position sensor 2 sub (PWR Short/ GND open)
169	Main ST lever position sensor 2 sub (PWR Open/ GND Short)
170	Main ST lever position sensor 2_character fail
171	Sub ST lever posistion sensor 1 main (PWR_Short/ GND Open)
172	Sub ST lever posistion sensor 1 main (PWR_Open/ GND Short)
173	Sub ST lever posistion sensor 1 Sub (PWR_Short/ GND Open)
174	Sub ST lever posistion sensor 1 Sub (PWR_Open/ GND Short)
175	Sub ST lever posistion sensor 1_watching fail
176	Sub ST lever posistion sensor 1_character fail
177	Sub ST lever posistion sensor 2 main (PWR Short/ GND open)
178	Sub ST lever posistion sensor 2 main (PWR Open/ GND Short)
179	Sub ST lever posistion sensor 2 sub (PWR Short/ GND open)
180	Sub ST lever posistion sensor 2 sub (PWR Open/ GND Short)
181	Sub ST lever posistion sensor 2_character fail
183	Station selector system Fail
184	Level selector system Fail
186	Sub station communication error
187	Lever Pickup Abnormal

*The 3-digit codes are used for DEC system diagnosis. If the DEC system has failed, engine speed is automatically fixed at approximately 1400RPM

2 YAMAHA-E

SPECIAL FUNCTIONS

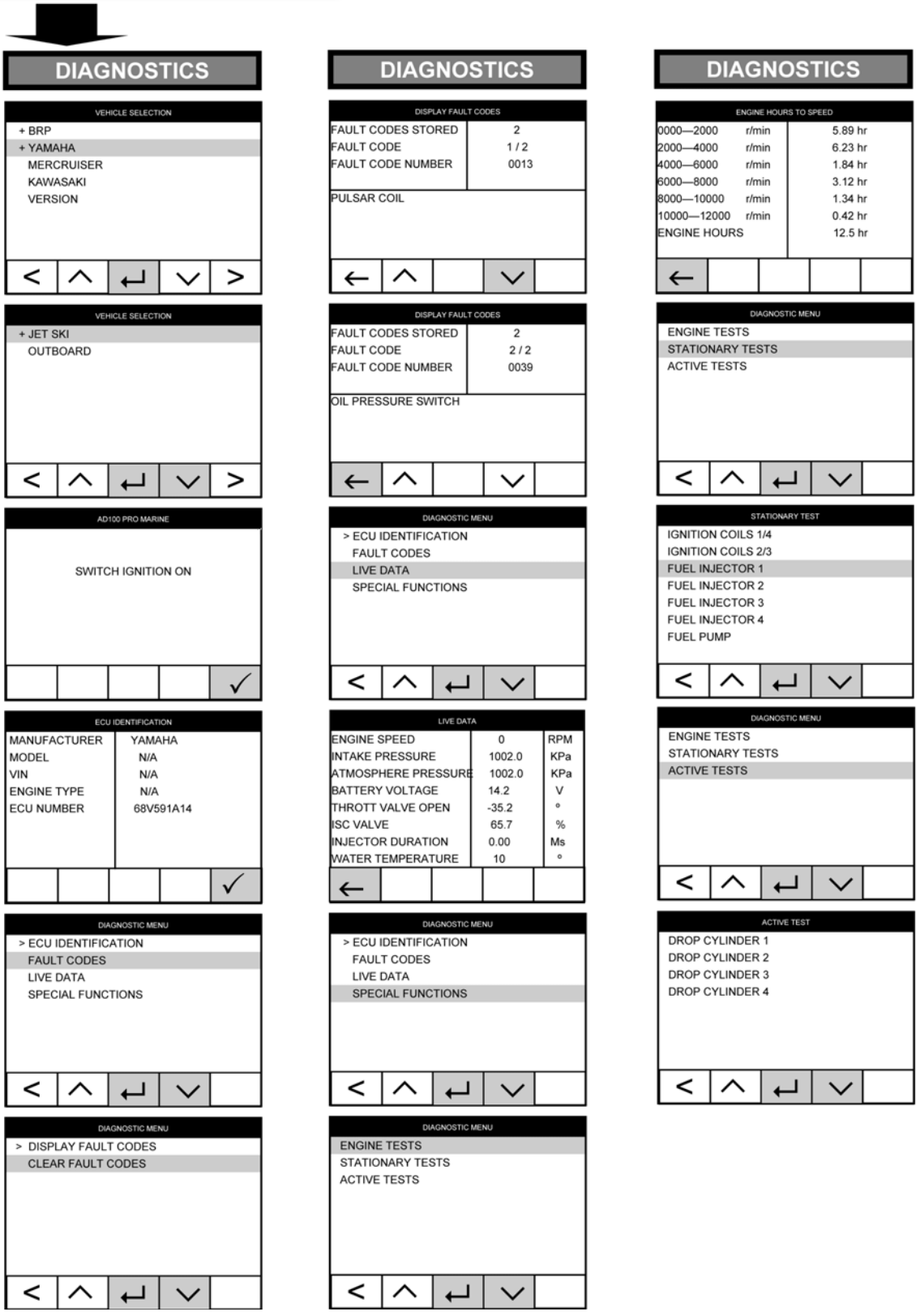
Yamaha Outboard Diagnostics



2 YAMAHA-E

SPECIAL FUNCTIONS

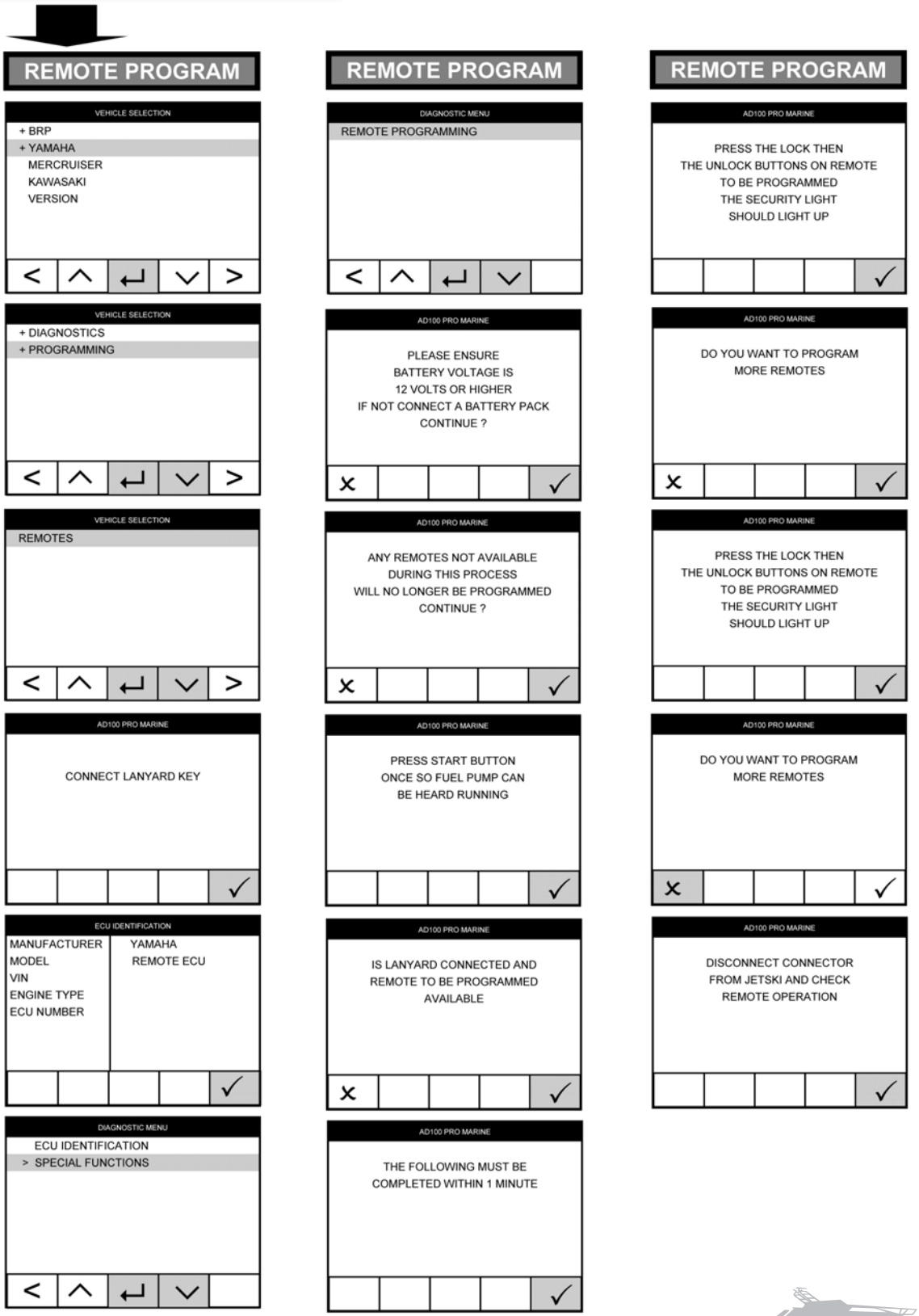
Yamaha
Jet Ski
Diagnostics



2 YAMAHA-E

SPECIAL FUNCTIONS

Yamaha
Jet Ski Remote
Programming



3 MERCRUISER

MERCURY/MERCRUISER/MEFI OPERATING MANUAL

Contents

3 MERCURY/MERCRUISER-A APPLICATIONS

Mercury/Mercruiser

		DTC 12,14					
Optimax V6 115, 135, 150, 175, 200, 225, 250, 2.5L, 3.0L	2001-2010	✓	✓	✓	ADC300 + ADC407		A
V6 EFI and Sport Jet	2002-2010	✓	✓	✓	ADC300 + ADC407		A
Optimax I3, 1.5L, 75, 90, 115HP	2002-2010	✓	✓	✓	ADC300 + ADC407 or ADC410		A
Optimax- DFI	1997-2001	✓	✓	✓	ADC410		A
2.5L EFI, 150, 175, 200, 225HP	2001-2010	✓	✓	✓	ADC300 + ADC407 or ADC410		A
Mercury Racing							
225X, 250XS, 300X, 300XS	2001-2010	✓	✓	✓	ADC300 + ADC407 or ADC410		A
2.5L (280) EFI	1998-2005	✓	✓	✓	ADC300 + ADC407 or ADC410		A
Mercuy 4 Stroke EFI							
40, 50, 60, 75, 90, 115 HP	2002-2010	✓	✓	✓	ADC300 + ADC407 or ADC410		A
Mercury Verado							
I-4 135, 150, 175, 200HP	2001-2010	✓	✓	✓	ADC300 + ADC407		A
I-6 200, 225, 250, 275, 300	2001-2010	✓	✓	✓	ADC300 + ADC407		A
I-6 350	2001-2010	✓	✓	✓			A
Mercury MFG by Yamaha							
30, 40, 50, 60, 75HP, 90 HP EFI, 115 HP EFI	2001-2006	✓	✓	✓			A
Mercury engines MFG by Yamaha require purchase use of Yamaha software module. See Yamaha application chart.							
Mercruiser							
4.3L MPI, 5.0 MPI, 350 MAG MPI, MX 6.2 MPI, Black Scorpion	2003-2010	✓	✓	✓	ADC300 + ADC407		A
496 MAG, 496 HO MAG, 8.1L, 8.1L HO	2001-2010	✓	✓	✓	ADC300 + ADC407		A
GM MEFI-1 thru MEFI-3	1992-2000	✓	✓	✓	ADC300 + ADC424		A
GM MEFI-4	1992-2000	✓	✓	✓	ADC300 + ADC424		A
Mercruiser Racing							
1075 SCi, 414 EFI, 600 Sci, 8.1 SHO	2001-2010	✓	✓	✓	ADC424		A
HP500 GM MEFI Equipped	1998-2010	✓	✓	✓	ADC300 + ADC424		A

3 MEFI-A

APPLICATIONS

MEFI 1, 2, 3 & 4

		DTC 12,14					
Volvo, EFI engines to	approx 2005	✓	✓	✓	ADC300 + ADC424		A
Pleasurecraft Marine (PCM)	1992-2006	✓	✓	✓	ADC300 + ADC424		A
Indmar	1992-2007	✓	✓	✓	ADC300 + ADC424		A
Crusader	1992-2006	✓	✓	✓	ADC300 + ADC424		A
Marine Power	1992-2008	✓	✓	✓	ADC300 + ADC424		A
Flagship Marine	1992-2006	✓	✓	✓	ADC300 + ADC424		A
RAMJET 350	2000 ⇨	✓	✓	✓	ADC300 + ADC424		A
S4 Hydrospace/Benelli Pro Edition	2005 ⇨	✓	✓	✓	ADC300 + ADC411		A
S4 Hydrospace/Benelli 110HP	2005 ⇨	✓	✓	✓	ADC300 + ADC411		A
Kodiak Marine	1992-2008	✓	✓	✓	ADC300 + ADC424		A
Panther Air Boats	2000 ⇨	✓	✓	✓	ADC300 + ADC424		A

3 MERCURY-B

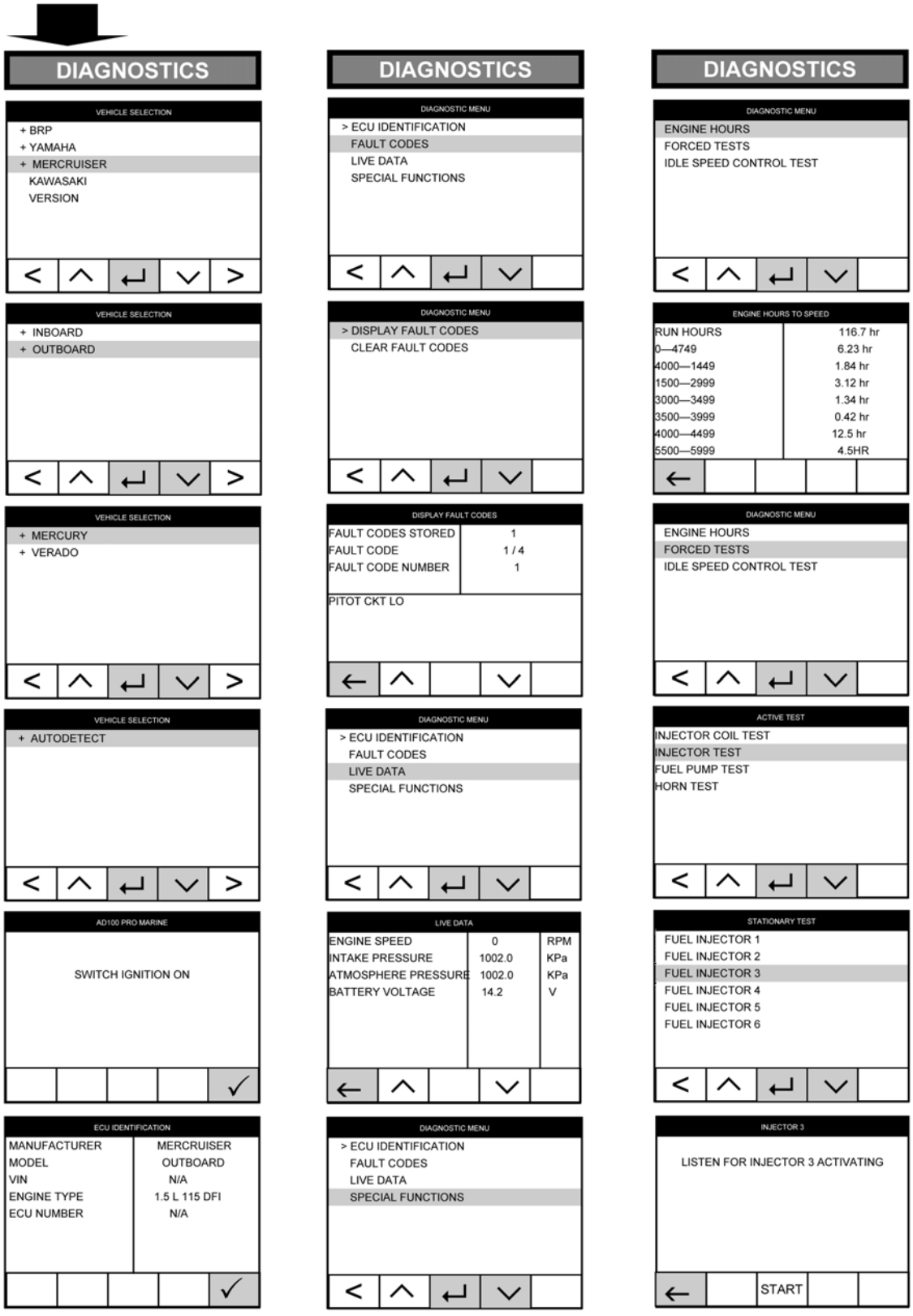
DIAGNOSTIC SOCKET LOCATIONS

MERCURY 4 PIN
DIAGNOSTIC CONNECTOR

3 MERCURY-C

SPECIAL FUNCTIONS

Mercury Outboards



3 MERCURY-D

FAULT CODES - DFI

Mercury Outboards

ACT	AIR COMPRESSOR TEMPERATURE SENSOR
ACT LIM	RPM LIMIT CAUSED BY AIR COMPRESSOR OVERHEAT
ACT TMP SEC	TIME SPENT IN AIR COMPRESSOR OVERHEAT
ACTIVE	PRESENT STATE OF SENSORS, SWITCHES, INJECTORS IGNITION COILS, ETC
AIR	INTAKE MANIFOLD AIR TEMPERATURE SENSOR : ERROR COUNT
AIR COM TMP	AIR COMPRESSOR TEMPERATURE SENSOR
AIR TMP	INTAKE MANIFOLD AIR TEMPERATURE SENSOR
AVAILABLE PWR%	A NORMALLY FUNCTIONING SYSTEM WILL ALLOW ENGINE TO MAKE 100% POWER
BAT LIM	RPM LIMIT CAUSED BY LOW BATTERY VOLTAGE
BATT	MAIN ENGINE BATTERY VOLTS : ERROR COUNT
BATV	MAIN ENGINE BATTERY VOLTS
BATTERY VOLT	MAIN ENGINE BATTERY VOLTS
BLK LIM	RPM LIMIT CAUSED BY LOW BLOCK WATER PRESSURE
BLK PSI MIN	BLOCK PRESSURE MINIMUM SPECIFICATION
BLOCK PSI	INLET WATER PRESSURE
BLOCK PSI SEC	TIME SPENT WITH LOW WATER PRESSURE TO BLOCK
BLOCK PSI	INLET WATER PRESSURE
BPSI	INLET WATER PRESSURE ERROR COUNT
BREAK IN	ENGINE BREAK IN ROUTINE
BREAK IN MIN	TIME IN MINUTES SPENT IN ENGINE BREAK ROUTINE
CALIB ID	CALIBRATION ID OF ECM
CODE	CALIBRATION ID OF ECM
COOL TMP PRT	COLLANT TEMP PORT SENSOR : ERROR COUNT
COOL TMP STB	COOLANT TEMP STARBOARD SENSOR : ERROR COUNT
COMP	AIR COMPRESSOR TEMPERATURE SENSOR : ERROR COUNT
COMP TMP	AIR COMPRESSOR TEMPERATURE ERROR COUNT
CPM LIM	RPM LIMIT CAUSED BY OVERHEAT CONDITION OF AIR COMPRESSOR
CTS LIM	RPM LIMIT CAUSED BY COOLANT TEMPERATURE OVERHEAT STARBOARD
CTS TMP SEC	TIME SPENT IN OVERHEAT ON THER STARBOARD BANK
CTP LIM	RPM LIMIT CAUSED BY COOLANT TEMPERATURE OVERHEAT PORT
CTP TMP SEC	TIME SPENT IN OVERHEAT ON THE PORT BANK
DDT	DIAGNOSTIC DEVICE
DINJ1-DINJ-6	DIRECT INJECTOR FOR CYLINDERS ONE THROUGH SIX
DIR INJ	DIRECT INJECTOR FOR CYLINDERS ONE THROUGH SIX
ECM ID	ECM HARDWARE REVISION LEVEL
ECM RUN TIME	TOTAL RUN TIME IN HOURS WITH THE ECM
ENGINE ID	ENGINE IDENTIFICATION
ENGINE RPM	REVOLUTIONS PER MINUTE OF ENGINE
ERR	ERROR COUNT
FAULT HIST	THE NUMBER OF TIMES A FAULT HAS OCCURED

3 MERCURY-D

FAULT CODES - DFI

Mercury Outboards

FI1—FI6	FUEL INJECTORS FOR CYLINDERS ONE THROUGH 6
GRD LIM	ENGINE GUARDIAN LIMIT MODE
GRD LIMIT SEC	TIME SPENT IN ENGINE GUARDIAN
H20	WATER IN FUEL FILTER : ERROR COUNT
HIST	PAST STATE OF INJECTORS, SENSORS, SWITCHES, IGNITION COILS, ETC
HORN	HORN DRIVER
IDLE	IDLE TPI=0%
IGN1-IGN6	IGNITION COIL FOR CYLINDERS ONE THROUGH SIX
IGN1-IGN6	IGNITION COIL FOR CYCLINDERS ONE TO SIX
IGN PRI	IGNITION COIL PRIMARY
INJ1—INJ6	INJECTOR FOR CYLINDER
LAMP	LAMP DRIVER FOR 4 FUNCTION GAUGE
LED	LIGHT EMITTING DIODE
LIMITER	RPM LIMITED DUE TO OVER TEMP, OVER SPEED, OIL FAIL, TPI FAIL, BATV
L OIL	LOW OIL SWITCH FOR UNDER COWL OIL TANK:ERROR COUNT
MAP	MANIFOLD ABSOLUTE PRESSURE SENSOR
NA	NOT AVAILABLE
OIL INJ CNT	NUMBER OF COUNTS OF OIL PUMP ACTIVIATION CYCLES:INDICATES PROPER PUMP ACT
OIL LIM	RPM LIMIT CAUSED BY LOW OIL CONDITION
OIL LOSS SEC	TIME SPENT WITH MINIMUM OIL RESERVE OR ELECTRICALLY FAILED OIL PUMP
OIL PMP	ELECTRONIC OIL PUMP
OIL PMP SEC	TIME SPENT WITH OIL PUMP FAULT
OVER TMP SEC	TIME IN SECONDS SPENT OVER HEAT CONDITION
PRLY	MAIN POWER RELAY : ERROR COUNT
PROM ID	PROGRAMMABLE READ ONLY MEMORY IDENTIFICATION ECM SOFTWARE REVISION
PWR 1 V	POWER SUPPLY 1 VOLT FOR SENSORS
PWR 2 V	POWER SUPPLY 2 VOLT FOR SENSORS
PWR LIM	POWER LIMIT MODE (RPM REDUCTION)
PWR LIMIT SEC	TIME SPENT IN POWER LIMIT
PWR RLY	MAIN POWER RELAY
PWR1	POWER SUPPLY 1 VOLT FOR SENSORS : ERROR COUNT
PWR1 VOLTS	POWER SUPPLY 1 VOLT FOR SENSORS
PWR2	POWER SUPPLY 1 VOLT FOR SENSORS : ERROR COUNT
PWR2 VOLTS	POWER SUPPLY 1 VOLT FOR SENSORS
RPM 0000-9999 RPM	RUN TIME HOURS BETWEEN 0000 AND 7999, IN 500 AND 1000 STEPS
RPM 8000+ RPM	RUN TIME HOURS ABOVE 8000 RPM
RPM LIM	RPM LIMIT DUE TO OVERSPEED
RPM LIMIT CNT	NUMBER OF COUNTS THE ECM ACTIVATED RPM LIMIT OR RPM REDUCTION
RPM LIMIT SEC	TIME SPENT IN RPM LIMIT
RPM REDUCT	ENGINE RPM REDUCED DUE TO MAJOR FAULT

3 MERCURY-D

FAULT CODES - DFI

Mercury Outboards

SEC	SECONDARY OF IGNITION COIL
TGAP	CRANK POSITION SENSOR AIR GAP
TIME TO OIL	COUNT UP TIMER TO NEXT OIL PUMP STROKE
TLNK	THROTTLE POSITION LINKAGE OR RANGE ERROR FAULT
TP1 LIM	RPM REDUCTION CAUSED BY TPI 1 FAULT
TP2 LIM	RPM REDUCTION CAUSED BY TPI 2 FAULT
TPI %	THROTTLE POSITION INDICATOR PERCENT
TPI LINK	THROTTLE POSITION LINKAGE OR RANGE ERROR FAULT
TPI1	THROTTLE POSITION INDICATOR 1 : ERROR COUNT
TPI 1 VOLTS	THROTTLE POSITION INDICATOR 1 VOLTS
TPI2	THROTTLE POSITION INDICATOR 2 : ERROR COUNT
TPI 2 VOLTS	THROTTLE POSITION INDICATOR 2 VOLTS
TPNA	THROTTLE POSITION NO ADAPT FAULT
TRIG	CRANK POSITION SENSOR : ERROR COUNT
TRIG SIG	CRANK POSITION SENSOR SIGNAL
TRIGGER ERR	ERROR COUNT IN READING CORRECT CRANK POSITION SIGNAL
WOT	WIDE OPEN THROTTLE = 100%

3 MERCURY-D

FAULT CODES - IGNITION

Mercury Outboards

BREAKIN TIME	TOTAL ENGINE BREAK IN TIME
COOLANT TMP	COOLANT TEMPERATURE
COOLANT SNSR HIST	COOLANT TEMPERATURE SENSOR HISTORY
DDT	DIAGNOSTIC DEVICE
ECM RUN TIME	TOTAL RUN TIME OF ECM
ENGINE RPM	ENGINE REVOLUTIONS PER MINUTE
FLAG A	STATUS SWITCH FLAG FOR PRESENT OR CURRENT FAULTS
FLAG B	STATUS SWITCH FLAG FOR HISTORY OR PAST FAULTS
FUEL ENRICHMENT	FUEL ENRICHMENT SOLENOID VALVE
KNOCK MOD HISTORY	VOLTAGE LEVEL HISTORY FROM DETONATION MODULE
KNOCK TIME	TIME SPENT IN KNOCK OR DETONATION
KNOCK VOLTS	VOLTAGE LEVEL FROM DETONATION CONTROL MODULE
LED	LIGHT EMITTING DIODE
LOW OIL SWITCH	LOW OIL SWITCH FOR UNDER COWL OIL TANK
OVER TMP	OVER TEMPERATURE OR OVER HEAT
OVERTMP TIME	TIME SPENT IN OVER TEMPERATURE MODE
PROM ID ECM	PROGRAMMABLE READ ONLY MEMORY IDENTIFICATION SOFTWARE REVISION
RPM LIM CNT	NUMBER OF COUNTS RPM LIMIT MODE WAS ACTIVATED
RPM LIM TIME	TIME SPENT IN RPM LIMITER MODE
SHIFT SWITCH	SHIFT SWITCH
SPARK ANG ATDC	SPARK ANGLE AFTER TOP DEAD CENTRE
SPARK ANG BTDC	SPARK ANGLE BEFORE TOP DEAD CENTRE
THROTTLE POS V	THROTTLE POSITION VOLTAGE
THROTTLE SNSR	THROTTLE POSITION SENSOR
THROTTLE SNSR HIST	THROTTLE POSITION SENSOR HISTORY
TRIGGER SIGNAL	TRIGGER SIGNAL FROM CRANK POSITION SENSOR
WATER LEVEL	WATER LEVEL IN WATER SEPARATING FUEL FILTER

3 MERCURY-D

FAULT CODES - 3.0L FUEL

Mercury Outboards

AIR SNSR HIST	INTAKE MANIFOLD AIR TEMPERATURE SENSOR HISTORY
AIR TMP	INTAKE MANIFOLD AIR TEMPERATURE
AIR TMP DEG	INTAKE AIR TEMPERATURE DEGREES
ATMOSPH PSI	ATMOSPHERIC AIR PRESSURE
COOLANT TMP	COOLANT TEMPERATURE
COOLANT SNSR HIST	COOLANT TEMPERATURE SENSOR HISTORY
DELTA PSI	THE DIFFERENCE BETWEEN ATMOSPHERIC PSI AND MAP PSI
FLAG A	STATUS SWITCH FLAG FOR PRESENT OR CURRENT FAULTS
FLAG B	STATUS SWITCH FLAG FOR HISTORY OR PAST FAULTS
FUEL PUMP % ON	FUEL PUMP ON TIME AS A PERCENTAGE
INJECT MSEC	INJECTOR MILLISECOND ON TIME
LOW OIL SWITCH	LOW OIL SWITCH FOR UNDER COWL OIL TANK
MAP PSI	MANIFOLD ABSOLUTE PRESSURE PSI
MAP SNSR	MANIFOLD ABSOLUTE PRESSURE SENSOR
MAP SNSR HIST	MANIFOLD ABSOLUTE PRESSURE SENSOR HISTORY
OVER TMP	OVER TEMPERATURE OR OVER HEAT
RPM LIMITER	RPM LIMITER CONTROLLED BY ECM
THROTTLE POS V	THROTTLE POSITION VOLTAGE
THROTTLE SNSR	THROTTLE POSITION SENSOR
THROTTLE SNSR HIST	THROTTLE POSITION SENSOR HISTORY
TRIGGER SIGNAL	TRIGGER SIGNAL FROM CRANK POSITION SENSOR
WATER LEVEL	WATER LEVEL IN WATER SEPARATING FUEL FILTER

3 MERCURY-D

FAULT CODES 2.5L 824003

Mercury Outboards

AIR TMP	INTAKE MANIFOLD AIR TEMPERATURE
ATMOSPH PSI	ATMOSPHERIC AIR PRESSURE
COOLANT TMP	COOLANT TEMPERATURE
INJECT A MSEC	INJECTOR MILLI SECOND ON TIME (CYL 1 & 2)
INJECT B MSEC	INJECTOR MILLI SECOND ON TIME (CYL 3 & 4)
INJECT C MSEC	INJECTOR MILLI SECOND ON TIME (CYL 5 & 6)
MAP PSI	MANIFOLD ABSOLUTE PRESSURE PSI
MAP SNSR	MANIFOLD ABSOLUTE PRESSURE SENSOR
OVER TMP	OVER TEMPERATURE OR OVER HEAT
PUMP AMPS	FUEL PUMP AMERAGE DRAW
PUMP STATUS	FUEL PUMP SPEED, LOW OR HIGH
STATUS FLAG	STATUS SWITCH FLAG FOR PRESENT OR CURRENT FAULTS
THROTTLE POS V	THROTTLE POSITION VOLTAGE
THROTTLE SNSR	THROTTLE POSITION SENSOR
TRIGGER A	PRIMARY IGNITION 5 COIL SIGNAL
TRIGGER B	PRIMARY IGNITION 1 COIL SIGNAL
TRIGGER C	PRIMARY IGNITION 3 COIL SIGNAL

3 MERCURY-D

FAULT CODES - 4 STROKE OUTBOARDS

Mercury Outboards

COOLANT TMP	COOLANT TEMPERATURE
LOW OIL PRESS	LOW OIL PRESSURE SWITCH
OVER TMP	OVER TEMPERATURE OR OVER HEAT
RPM LIMIT	RPM LIMIT DUE TO OVER SPEED
RPM REDUCTION	ENGINE RPM REDUCED DUE TO LOW OIL PRESSURE OR OVER HEAT
SPARK AND ATDC	SPARK ANGLE AFTER TOP DEAD CENTRE
SPARK AND BTDC	SPARK ANGLE BEFORE TOP DEAD CENTRE
STATUS LED	STATUS SWITCH FLAG FOR PRESENT OR CURRENT FAULTS

3 MERCRUISER-D

FAULT CODES SMARTCRAFT SYSTEMS

Mercruiser Sterndrives

5 VDC PWR LO	5 VOLT ECM INTERNAL POWER SUPPLY LOW
5 VDC PWR 2 LO	5 VOLT ECM POWER SUPPLY LOW TO SMARTCRAFT
ACT	AIR COMPRESSOR TEMPERATURE
ACT INPUT HI	AIR COMPRESSOR TEMPERATURE SENSOR INPUT HIGH
ACT INPUT LO	AIR COMPRESSOR TEMPERATURE SENSOR INPUT LOW
ACT TMP SEC	TIME SPENT IN AIR COMPRESSOR OVERHEAT
ACTIVE	ACTIVE FAULT STATE OF SENSORS, SWITCHES, INJECTORS
AT	INTAKE MANIFOLD AIR TEMPERATURE SENSOR
AT INPUT HI	AIR TEMPERATURE SENSOR INPUT IS HIGH
AT INPUT LO	AIR TEMPERATURE SENSOR INPUT IS LOW
AIR COM TMP	AIR COMPRESSOR TEMPERATURE SENSOR
AIRFLOW HI	INCOMING AIRFLOW TO ENGINE IS HIGHER THAN EXPECTED
AIR TEMP CKT HI	AIR TEMPERATURE SENSOR CIRCUIT IS HIGH
AIR TEMP CKT LO	AIR TEMPERATURE SENSOR CIRCUIT IS LOW
AIR TEMP	INTAKE MANIFOLD AIR TEMPERATURE SENSOR
AVAILABLE PWR %	A NORMALLY FUNCTIONING SYSTEM WILL ALLOW ENGINE TO MAKE 100% POWER
BARO PSI	BAROMETRIC PRESSURE
BATT VOLTS	MAIN ENGINE BATTERY VOLTS
BATTERY VOLTS	MAIN ENGINE BATTERY VOLTS
BATT VOLTS HIGH	BATTERY VOLTAGE IS ABOVE ALLOWABLE LIMIT
BATT VOLTS LOW	BATTERY VOLTAGE IS BELOW ALLOWABLE LIMIT
BLK PSI MIN	BLOCK PRESSURE MINIMUM SPECIFICATION
BLOCK PRESS LOW	ENGINE BLOCK PRESSURE BELOW ALLOWABLE LIMIT
BLOCK PSI	INLET WATER PRESSURE
BLOCK PSI SEC	TIME SPENT WITH LOW WATER PRESSURE TO BLOCK
BLOCK OVERHEAT	ENGINE BLOCK IS OVERHEATING
BLOCK TMP	BLOCK TEMPERATURE
BLK TEMP CKT HI	ENGINE BLOCK TEMPERATURE SENSOR CIRCUIT IS HIGH
BLK TEMP CKT LO	ENGINE BLOCK TEMPERATURE SENSOR CIRCUIT IS LOW
BOOST BY CKT HI	BOOST BYPASS CIRCUIT IS HIGH
BOOST BY CKT LO	BOOST BYPASS CIRCUIT IS LOW
BOOST VALVE ERR	BOOST VALVE DIAGNOSTIC ERROR : TEST VALVE
BPSI INPUT HI	BLOCK PRESSURE SENSOR INPUT IS HIGH
BPSI INPUT LO	BLOCK PRESSURE SENSOR INPUT IS LOW
BREAK IN	ENGINE BREAK IN ROUTINE
BREAKIN ACTIVE	ENGINE BREAK IN ROUTINE IS ACTIVE
BREAKIN LEFT	TIME REMAINING IN ENGINE BREAK IN
BREAKIN STR	BREAKIN STRATEGY
BUS +12	CAN BUS 12 VOLT SUPPLY FOR SMARTCRAFT
CALIB ID	CALIBRATION ID OF ECM

3 MERCRUISER-D

FAULT CODES SMARTCRAFT SYSTEMS

Mercruiser Sterndrives

CAN ERR1 TO 10	CAN WIRING PROBLEM
CHI	CUSTOMER HELM INTERFACE (SC5000)
CODE	CALIBRATION ID OF ECM
COOL TMP PRT	COOLANT TEMP PORT SENSOR
COOL TMP STB	COOLANT TEMP STARBOARD SENSOR
COMP	AIR COMPRESSOR TEMPERATURE SENSOR
COMP OVERHEAT	AIR COMPRESSOR TEMPERATURE IS ABOVE ALLOWABLE LIMIT
COMP TEMP CKT HI	AIR COMPRESSOR TEMPERATURE SENSOR CIRCUIT IS HIGH
COMP TEMP CKT LO	AIR COMPRESSOR TEMPERATURE SENSOR CIRCUIT IS LOW
COMP TMP	AIR COMPRESSOR TEMPERATURE
COMPRESS OVRHT	AIR COMPRESSOR TEMPERATURE IS ABOVE THE ALLOWABLE LIMIT
CTP INPUT HI	COOLANT TEMPERATURE PORT SENSOR IS HIGH
CTP INPUT LO	COOLANT TEMPERATURE PORT SENSOR IS LOW
CTP TEMP SEC	TIME SPENT IN OVERHEAT ON PORT BANK
CTS INPUT HI	COOLANT TEMPERATURE STARBOARD SENSOR INPUT IS HIGH
CTS INPUT LO	COOLANT TEMPERATURE STARBOARD SENSOR INPUT IS LOW
CTS TMP SEC	TIME SPENT IN OVERHEAT ON STARBOARD BANK
DEMAND%	TPI% / TPS% ON DTS MODELS THIS IS ERC DEMAND%
DEMAND DIFF	FAULTY POTENTIOMETERS IN ERC
DINJ1-DINJ6 OPEN	DIRECT INJECTOR 1-6 IS OPEN CIRCUIT
DINJ1– DINJ6 SHORT	DIRECT INJECTOR 1-6 IS SHORT CIRCUIT
DRIVE LUBE LO	LOW DRIVE LUBE RESERVOIR
DRIVER POWER LO	INSIFFICIENT BATTERY VOLTAGE OR WIRING PROBLEM
DTS	DIGITASL THROTTLE AND SHIFT
DUAL CAN ERR	WIRING PROBLEM BETWEEN CAN 1 AND CAN2
ECM555	ELECTRONIC CONTROL MODULE WITH POWER PC 555 MICROCOMPUTER
ECM MEMORY ERR	ECM MEMORY HAS BEEN CORRUPTED
ECM ID	ECM HARDWARE REVISION LEVEL
ECM TRIG 1-8 OPEN	ECM SPARK TRIGGER SIGNAL CIRCUIT 1-8 IS OPEN
ECM TRIG 1-8 SHORT	ECM SPARK TRIGGER SIGNAL CIRCUIT 1-8 IS SHORT
ECT	ENGINE COOLANT TEMPERATURE SENSOR
ENGINE ID	ENGINE IDENTIFICATION
ERC	ELECTRONIC REMOTE CONTROL HANDLE AT THE HELM
ESC	ELECTRONIC SHIFT CONTROL
ESC CONTROL LOST	ESC CANNOT MAINTAIN IN GEAR POSITION
ESC-NS POS DIFF	ESC POSITION AND COMMANDED POSITION DO NOT AGREE
ESC TIMEOUT	ESC ACTUATOR HAS NOT PHYSICALLY MOVED WITH RESPECT TO THE ERC LEVER POS
EST 1-8	ELECTRONIC SPARK TRIGGER SIGNAL TO THE IGNITION COIL DRIVER CIRCUIT
EST 1-8 OPEN	ELECTRONIC SPARK TRIGGER SIGNAL CIRCUIT 1-8 IS OPEN
EST 1-8 SHORT	ELECTRONIC SPARK TRIGGER SIGNAL CIRCUIT 1-8 IS SHORT

3 MERCRUISER-D

FAULT CODES SMARTCRAFT SYSTEMS

Mercruiser Sterndrives

ETC CONTROL	LOSS OF ELECTRONIC THROTTLE CONTROL CIRCUIT
ETC STICKING	ELECTRONIC THROTTLE CONTROL STICKING
ETC IDLE RANGE	ETC IS OUTSIDE OF EXPECTED RANGE
ETC MOTOR OPEN	ELECTRONIC THROTTLE CONTROL MOTOR IS OPEN
ETC MOTOR SHORT	ELECTRONIC THROTTLE CONTROL MOROR IS SHORTED
FINJ 1—FINJ8 OPEN	FUEL INJECTOR CIRCUIT 1-8 IS OPEN
FINJ1—FINJ8 SHORT	FUEL INJECTOR CIRCUIT 1-8 IS SHORTED
FPC TOTAL	FUEL PER CYLINDER
FUEL LVL CKT HI	FUEL LEVEL SENSOR CIRCUIT HIGH
FUEL LVL CKT LO	FUEL LEVEL SENSOR CIRCUIT LOW
FUEL LVL CKT2 HI	FUEL LEVEL SENSOR CIRCUIT 2 HIGH
FUEL LVL CKT2 LO	FUEL LEVEL SENSOR CIRCUIT 2 LOW
FUEL LVL IN HI	FUEL LEVEL SENSOR INPUT IS HIGH
FUEL LVL IN LO	FUEL LEVEL SENSOR INPUT IS LOW
FUEL PRES CKT LO	FUEL PRESSURE SENSOR CIRCUIT IS LOW
FUEL PRES CKT HI	FUEL PRESSURE SENSOR CIRCUIT IS HIGH
FUEL PSI CKT HI	FUEL PRESSURE SENSOR CIRCUIT HIGH
FUEL PSI CKT LO	FUEL PRESSURE SENSOR CIRCUIT LOW
FUEL PUMP CKT	FUEL PUMP CIRCUIT OR RELAY FAULT
FUEL PUMP RLY	FUEL PUMP RELAY
GEAR POS DIFF	ESC POSITION SENSOR DOES NOT AGREE WITH SHIFT SWITCH
GUARDIAN	ENGINE GUARDIA STRATEGY IS ACTIVE
GRD LIMIT SEC	TIME SPENT IN ENGIN GUARDIAN
H20 IN FUEL	WATER IN FUEL
H20 PRES CKT HI	ENGINE WATER PRESSURE SENSOR CIRCUIT IS HIGH
H20 PRES CKT LO	ENGINE WATER PRESSURE SENSOR CIRCUIT IS LOW
HALL SENSOR	HALL EFFECT SENSOR (CRANK SENSOR)
HALL SENSOR STR	HALL EFFECT SENSOR |(CRANK SENSOR) STRATEGY IS ACTIVE
HEAD OVRHT	CYLINDER HEAD IS OVERHEATING
HEAD TEMP	CYLINDER HEAD TEMPERATURE
HEAD TEMP CKT HI	CYLINDER HEAD TEMPERATURE CIRCUIT IS HIGH
HEAD TEMP CKT LO	CYLINDER HEAD TEMPERATURE CIRCUIT IS LOW
HELM ADC CHECK	COMMAND MODULE RELIABILITY CHECK OR CAN BUS PROBLEM
HORN	HORN DRIVER (INTERNAL ECM)
HORN OUTPUT	WARNING HORN SYSTEM NOT FUNCTIONAL
IAC OUTPUT	IDLE AIR CONTROL VALVE OR CIRCUIT FAULT
IAC PWM%	IDLE AIR CONTROL VALVE DUTY CYCLE PERCENT
IDLE	IDLE TPI=0%
IDLE MAP STR	IDLE RPM MAP STRATEGY
IGN1—IGN8	IGNITION COIL FOR CYLINDERS 1 TO 8

3 MERCRUISER-D

FAULT CODES SMARTCRAFT SYSTEMS

Mercruiser Sterndrives

IGN PRI	IGNITION COIL PRIMARY
KNCOK SENSOR 1	KNOCK SENSOR 1
KNOCK SENSOR 2	KNOCK SENSOR 2
LAKE/SEA	LAKE OR SEA TEMPERATURE
LIFT PUMP OUT	CHECK FUEL SUPPLY MODULE LIFT PUMP
LIFT PUMP SW HI	LIFT PUMP SWITCH IS HIGH—FUEL SUPPLY MODULE OVERFLOW
LIFT PUMP TIMER	FUEL SUPPLY MODULE NOT FILLING
LOW DRIVE LUBE	LOW DRIVE LUBE RESERVOIR
LOW OIL SEC	TIME SPENT ON LOW OIL RESERVE
MAP	MANIFOLD ABSOLUTE PRESSURE SENSOR
MAP CKT HI	MANIFOLD ABSOLUTE PRESSURE SENSOR CIRCUIT HIGH
MAP CKT LO	MANIFOLD ABSOLUTE PRESSURE SENSOR CIRCUIT LOW
MAP DIFF ERR	BOTH TPI 'S ARE FUNCTIONING BUT MAP SENSOR CALCULATIONS DONT AGREE
MAP INPUT HI	MAP SENSOR INPUT IS HIGH
MAP INPUT LO	MAP SENSOR INPUT IS LOW
MAP IDLE CHECK	MAP SENSOR RATIONALITY/LOSS OF VACUUM CHECK
MAT	MANIFOLD AIR TEMPERATURE
MAT CKT HI	MANIFOLD AIR TEMPERATURE CIRCUIT HIGH
MAT CKT LO	MANIFOLD AIR TEMPERATURE CIRCUIT LOW
MPRLY	MAIN POWER RELAY
MPRLY BACKFEED	AN EXTERNAL POWER SOURCE HAS BYPASSED THE MAIN POWER RELAY
MPRLY OUTPUT	MAIN POWER RELAY OUTPUT CIRCUIT HAS A FAULT
NEUTRAL OVERSPD	NEUTRAL GEAR OVERSPEED
OIL INJ CNT	NUMBER OF COUNTS OF OIL PUMP ACTIVATION
OIL JET CKT HI	OIL JET PRESSURE CIRCUIT IS HIGH
OIL HET CKT LO	OIL JET PRESSURE CIRCUIT IS LOW
OIL JET PRES LO	OIL JET PRESSURE IS LOW
OIL LEVEL	MAIN OIL TANK SENDER DATA
OIL LVL BOAT LO	OIL LEVEL IN BOAT TANK IS LOW
OIL LVL ENG LO	OIL RESERVE ACTIVE ON ENGINE TANK
OIL LVL CKT HI	OIL LEVEL SENSOR CIRCUIT IS HIGH
OIL LVL CKT LO	OIL LEVEL SENSOR CIRCUIT IS LOW
OIL LVL IN HI	OIL LEVEL SENSOR INPUT IS HIGH
OIL LVL IN LOW	OIL LEVEL SENSOR INPUT IS LOW
OIL PMP SEC	TIME SPENT WITH OIL PUMP FAULT
OIL PRES LOW	OIL PRESSURE LOW
OIL PES CKT HI	OIL PRESSURE SENSOR CIRCUIT IS HIGH
OIL PES CKT LO	OIL PRESSURE SENSOR CIRCUIT IS LOW
OIL PSI	ENGINE OIL PRESSURE
OIL PSI CKT HI	OIL PRESSURE SENSOR CIRCUIT HIGH

3 MERCRUISER-D

FAULT CODES SMARTCRAFT SYSTEMS

Mercruiser Sterndrives

OIL PSI CKT LO	OIL PRESSURE SENSOR CIRCUIT LOW
OIL PSI STR	OIL PRESSURE STRATEGY
OIL PUMP	OIL PUMP ELECTRICALFAULT
OIL PUMP OUTPUT	OIL PUMP ELECTRICAL FAULT
OIL QLTY CKT HI	OIL QUALITY CIRCUIT HIGH
OIL QLTY CKT LO	OIL QUALITY CIRCUIT LOW
OIL REMOTE STR	REMOTE OIL TANK STRATEGY
OIL RESERVE STR	OIL RESERVE STRATEGY IS ACTIVE
OVERSPEED	OVERSPEED OR RPM LIMIT
OIL SYSTEM	OIL SYSTEM FAULT
OIL TMP CKT HI	OIL TEMPERATURE CIRCUIT HIGH
OIL TMP CKT LO	OIL TEMPERATURE CIRCUIT LOW
OIL TMP OVRHT	OIL TEMPERATURE OVERHEAT
OVERSPEED	ENGINE HAS ENTERED STAGE 0 OF RPM LIMIT
OVERSPEED 1	ENGINE HAS ENTERED STAGE 1 OF RPM LIMIT
OVERSPEED 2	ENGINE HAS ENTERED STAGE 2 OF RPM LIMIT
OVER TMP SEC	TIME IN SECONDS SPENT IN OVER HEAT
PADDLE WHEEL	DATA USED TO CLACULATE BOAT SPEED
PADDLE WHEEL STR	PADDLE WHEEL STRATEGY
PITOT	PILOT PRESSURE SENSOR DATA FIR BOAT SPEED CALCULATIONS
PITOT CKT HI	PITOT PRESSURE SENSOR CIRCUIT HIGH
PITOT CKT LO	PITOT PRESSURE SENSOR CIRCUIT LOW
PORT EMCT CKT HI	PORT EXHAUST MANIFOLD COOLANT SENSOR CIRCUIT HIGH
PORT EMCT CKT LO	PORT EXHAUST MANIFOLD COOLANT SENSOR CIRCUIT LOW
PORT EMCT OVRHT	PORT EXHAUST MANIFOLD COOLANT TEMPERATURE OVERHEAT
PRT EMCT	PORT EXHAUST MANIFOLD COOLANT TEMP
PRT EMCT CKT HI	PORT EXHAUST MANIFOLD COOLANT SENSOR CIRCUIT HIGH
PRT EMCT CKT LO	PORT EXHAUST MANIFOLD COOLANT SENSOR CIRCUIT LOW
PRT EMCT OVRHT	PORT EXHAUST MANIFOLD COOLANT TEMPERATURE OVERHEAT
PITOT INPUT HI	PITOT PRESSURE SENSOR INPUT IS HIGH
PITOT INPUT LO	PITOT PRESSURE SENSOR INPUT IS LOW
PORT HEAD OVRHT	OVERHEAT ON THE PORT BANK
PORT OVERHEAT	OVERHEAT ON THE PORT BANK
PWR 1 VOLTS	POWER SUPPLY 1 VOLTS (INTERNAL ECM)
PWR RLY	POWER RELAY
PWR RLY OUTPUT	POWER RELAY OUTPUT CIRCUIT HAS FAILED
PWR RELAY BACKFD	AN EXTERNAL POWER SOURCE HAS BYPASSED THE MAIN POWER RELAY
PWR1 LOW	+5VOLT SENSOR POWER SUPPLY IS LOW
REVERSE OVERSPD	REVERSE GEAR OVERSPEED
RPM LIMIT SEC	TIME SPENT IN RPM LIMIT

3 MERCRUISER-D

FAULT CODES SMARTCRAFT SYSTEMS

Mercruiser Sterndrives

RUN TIME HR	TOTAL RUN TIMER IN HOURS WITH THIS ECM
SC DIAG CKT HI	SUPERCHARGERDIAGNOSTIC CIRCUIT IS HIGH
SC OVERHEAT	SUPERCHARGER OVERHEAT
SC TEMP CKT LO	SUPERCHARGER TEMPERATURE CIRCUIT IS LOW
SC TEMP CKT HI	SUPERCHARGER TEMPERATURE CIRCUIT IS HIGH
SUP CHG TMP	SUPERCHARGER OUTLET TEMPERATURE
SEA PUMP CKT HI	SEA PUMP PRESSURE SENSOR CIRCUIT HIGH
SEA PUMP CKT LOW	SEA PUMP PRESSURE SENSOR CIRCUIT LOW
SEA PUMP PSI	SEA PUMP PRESSURE
SEA PUMP PSI LO	SEA PUMP PRESSURE LOW
SEA TMP CKT HI	SEA/LAKE TEMPERATURE CIRCUIT HIGH
SEA TMP CKT LO	SEA/LAKE TEMPERATURE CIRCUIT LOW
SEA TEMP IN HI	SEA/LAKE TMPERATURE SENSOR INPUT IS HIGH
SEA TEMP IN LO	SEA/LAKE TMPERATURE SENSOR INPUT IS LOW
SEC	SECONDARY IGNITION COIL
SEC FINJ1-6 OPEN	SECONDARY FUEL INJECTOR CIRCUIT IS OPEN
SEC FINJ1-6 SHORT	SECONDARY FUEL INJECTOR CIRCUIT IS SHORTED
SHIFT DRV OVRHT	INTERNAL ECM DRIVER FOR SHIFT ACTUATOR IS OVERHEATING
SHIFT POS CKT HI	SHIFT POSITION SENSOR INPUT CIRCUIT HIGH
SHIFT POS CKT LO	SHIFT POSITION SENSOR INPUT CIRCUIT LOW
SHIFT ADAPT ERR	CHECK ESC COMPONENTS FOR BINDING
SHIFT ANT SWITCH	PROBLEM WITH SHIFT ANTICIPATE SWITCH OR PROBLEM WITH OUTDRIVE
SHIFT SWITCH	FAULTY NEUTRAL SWITCH OR WIRING
SMARTSTART ERR	DTS ENGINE FAILED TO SEE FLYWHEEEL ROTATION WHEN STARTED. NO RPM DETETCED.
STAR OVERHEAT	OVERHEAT ON THE STARBOARD BANK
START SOLENOID	OPEN CIRCUIT TO START SOLENOID
STBD HEAD OVRHT	OVERHEAT ON THE STARBOARD BANK
STBD TEMP CKT HI	COOLANT TEMPERATURE STARBOARD SENSOR CIRCUIT IS HIGH
STBD TEMP CKT LO	COOLANT TEMPERATURE STARBOARD SENSOR CIRCUIT IS LOW
STB EMCT	STARBOARD EXHAUST MANIFOLD COOLANT TEMP
STB EMCT CKT HI	STARBOARD EXHAUST MANIFOLD COOLANT TEMPERATURE CIRCUIT HIGH
STB EMCT CKT LO	STARBOARD EXHAUST MANIFOLD COOLANT TEMPERATURE CIRCUIT LOW
STBD EMCT CKT HI	STARBOARD EXHAUST MANIFOLD COOLANT TEMPERATURE CIRCUIT HIGH
STBD EMCT CKT LO	STARBOARD EXHAUST MANIFOLD COOLANT TEMPERATURE CIRCUIT LOW
STB EMCT OVRHT	STARBOARD EXHAUST MANIFOLD COOLANT TEMPERATURE OVERHEAT
STEER CKT HI	OUTDRIVE STEERING POSITION SENSOR CIRCUIT HIGH
STEER CKT LO	OUTDRIVE STEERING POSITION SENSOR CIRCUIT LOW
STOP CKT ACTIVE	EMERGENCY STOP CIRCUIT IS EITHER IN THE CLOSED POSITION OR SHORTED TO GND
TGAP	CRANK POSITION SENSOR AIR GAP
THERMOSTAT FAULT	CHECK COOLING SYSTEMS COMPONENTS

3 MERCRUISER-D

FAULT CODES SMARTCRAFT SYSTEMS

Mercruiser Sterndrives

TPI% TPS%	THROTLE POSITION INDICATOR PERCENT
TPI OR TPS	THROTTLE POSITION INDICATOR OR THROTTLE POSITION SENSOR
TPI ALL ERR	NONE OF THE TWO TPI'S ANDF MAP AGREE
TPI1 DIFF ERR	MAP SENSOR RANGE = TPI2 BUT TPI1 DOES NOT AGREE
TPI1 CKT HI	TPI 1 SENSOR CIRCUIT IS HIGH
TPI1 CKT LO	TPI 1 SENSOR CIRCUIT IS LOW
TPI 1 INPUT HI	TPI 1 SENSOR CIRCUIT IS HIGH
TPI 2 INPUT LO	TPI 1 SENSOR CIRCUIT IS LOW
TPI 1 NO ADAPT	THROTTLE POSITION INDICATOR 1 HAS A MECHANICAL SYSTEM, LINKAGE OR FAULT
TPI1 ADAPT ERR	THROTTLE POSITION INDICATOR 1 HAS A MECHANICAL SYSTEM, LINKAGE OR FAULT
TPI 1 RANGE HI	TPI 1 IS ABOVE THE ALLOWABLE HIGH RANGE
TPI 1 RANGE LO	TPI 1 IS BELOW THE ALLOWABLE LOW RANGE
TPI1 VOLTS	THROTTLE POSITION INDICATOR 1 VOLTS
TPS1 CKT HI	THROTTLE POSITION SENSOR 1 CIRCUIT HIGH
TPS1 CKT LO	THROTTLE POSITION SENSOR 1 CIRCUIT LOW
TPS1 NO ADAPT	THROTTLE POSITION INDICATOR 1 HAS A MECHANICAL SYSTEM, LINKAGE OR FAULT
TPI2 DIFF ERR	MAP SENSOR RANGE = TPI1 BUT TPI2 DOES NOT AGREE
TPI2 CKT HI	TPI 2 SENSOR CIRCUIT IS HIGH
TPI2 CKT LO	TPI 2 SENSOR CIRCUIT IS LOW
TPI 2 NO ADAPT	THROTTLE POSITION INDICATOR 2 HAS A MECHANICAL SYSTEM, LINKAGE OR FAULT
TPI 2 RANGE HI	TPI 2 IS ABOVE THE ALLOWABLE HIGH RANGE
TPI 2 RANGE LO	TPI 2 IS BELOW THE ALLOWABLE LOW RANGE
TPI2 VOLTS	THROTTLE POSITION INDICATOR 2 VOLTS
TRANS OVERHEAT	TRANSMISSION OVERHEAT
TRIM	TRIM SENDER DATA
TRIM CKT HI	TRIM SENSOR CIRCUIT HIGH
TRIM CKT LO	TRIM SENSOR CIRCUIT LOW
TRIM INPUT HI	TRIM SENSOR INPUT IS HIGH
TRIM INPUT LO	TRIM SENSOR INPUT IS LOW
VENT SWITCH HI	VENT SWITCH IS HIGH DUE TO FUEL IN VENT CANISTER
VR SENSOR	VARIABLE RELUCTANCE SENSOR
VR SNSR STR	VARIABLE RELUCTANCE SENSOR STRATEGY
WARNING HORN	WARNING HORN SYSTEM NOT FUNCTIONAL
WATER IN FUEL	WATER IN FUEL FILTER
WATER PRES LO	WATER PRESSURE TO ENGINE IS LOW
WOT	WIDE OPEN THROTTLE TPI=100%

4 KAWASAKI

KAWASAKI OPERATING MANUAL

Contents

4 KAWASAKI-A APPLICATIONS

Kawasaki

		DTC 12,14				
STX 1100 DI (FITCH)	2000-2003	✓	✓	✓	ADC300 + ADC416 + ADC450	A
ULTRA 130 DI (FITCH)	2001-2004	✓	✓	✓	ADC300 + ADC416 + ADC450	A
STX (4 STROKE)	2009-2010	✓	✓	✓	ADC300 + ADC419 + ADC414	A
STX-12F (4 STROKE)	2003-2008	✓	✓	✓	ADC300 + ADC419 + ADC414	A
STX-15F (4 STROKE)	2004-2010	✓	✓	✓	ADC300 + ADC419 + ADC414	A
ULTRA LX (4 STROKE)	2007-2010	✓	✓	✓	ADC300 + ADC419 + ADC406	A
ULTRA 250 X (4 STROKE)	2007-2008	✓	✓	✓	ADC300 + ADC419 + ADC406	A
ULTRA 260 LX (4 STROKE)	2009-2010	✓	✓	✓	ADC300 + ADC419 + ADC406	A
ULTRA 260 X (4 STROKE)	2009-2010	✓	✓	✓	ADC300 + ADC419 + ADC406	A
ULTRA LX (4 STROKE)	2007-2010	✓	✓	✓	ADC300 + ADC419 + ADC414 or ADC406	A
ULTRA 250 X (4 STROKE)	2007-2008	✓	✓	✓	ADC300 + ADC419 + ADC414 or ADC406	A
ULTRA 260 LX (4 STROKE)	2009-2010	✓	✓	✓	ADC300 + ADC419 + ADC414 or ADC406	A
ULTRA 260 X (4 STROKE)	2009-2010	✓	✓	✓	ADC300 + ADC419 + ADC414 or ADC406	A

Note: Must press set on IC before starting diagnostics on all Ultra models.

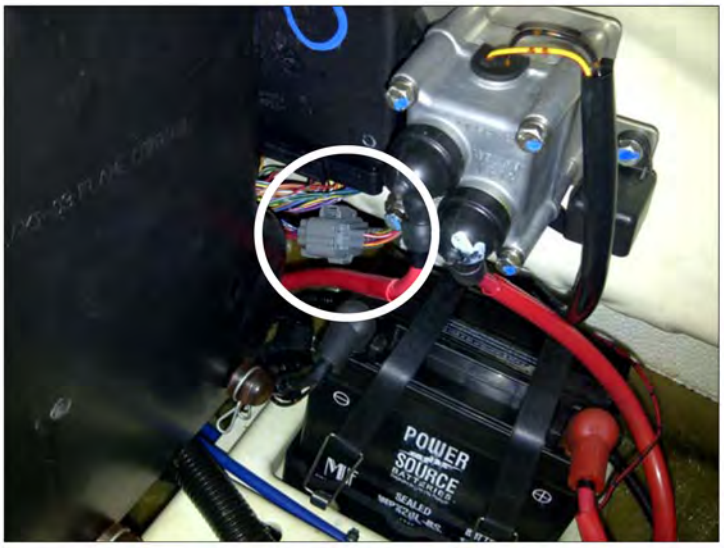
4 KAWASAKI-B

DIAGNOSTIC SOCKET LOCATIONS

Kawasaki

KAWASAKI STX15F
DIAGNOSTIC SOCKET

KAWASAKI STX15F
POWER CONNECTOR



4 KAWASAKI-C GENERAL OPERATION

Kawasaki

READ FAULT CODES
Displays the list of diagnostic trouble codes that are currently on the engine. Each fault needs to be investigated and fixed. The fault code will be cleared automatically once the problem has been fixed, as there is no clear fault code function on this manufacturer.

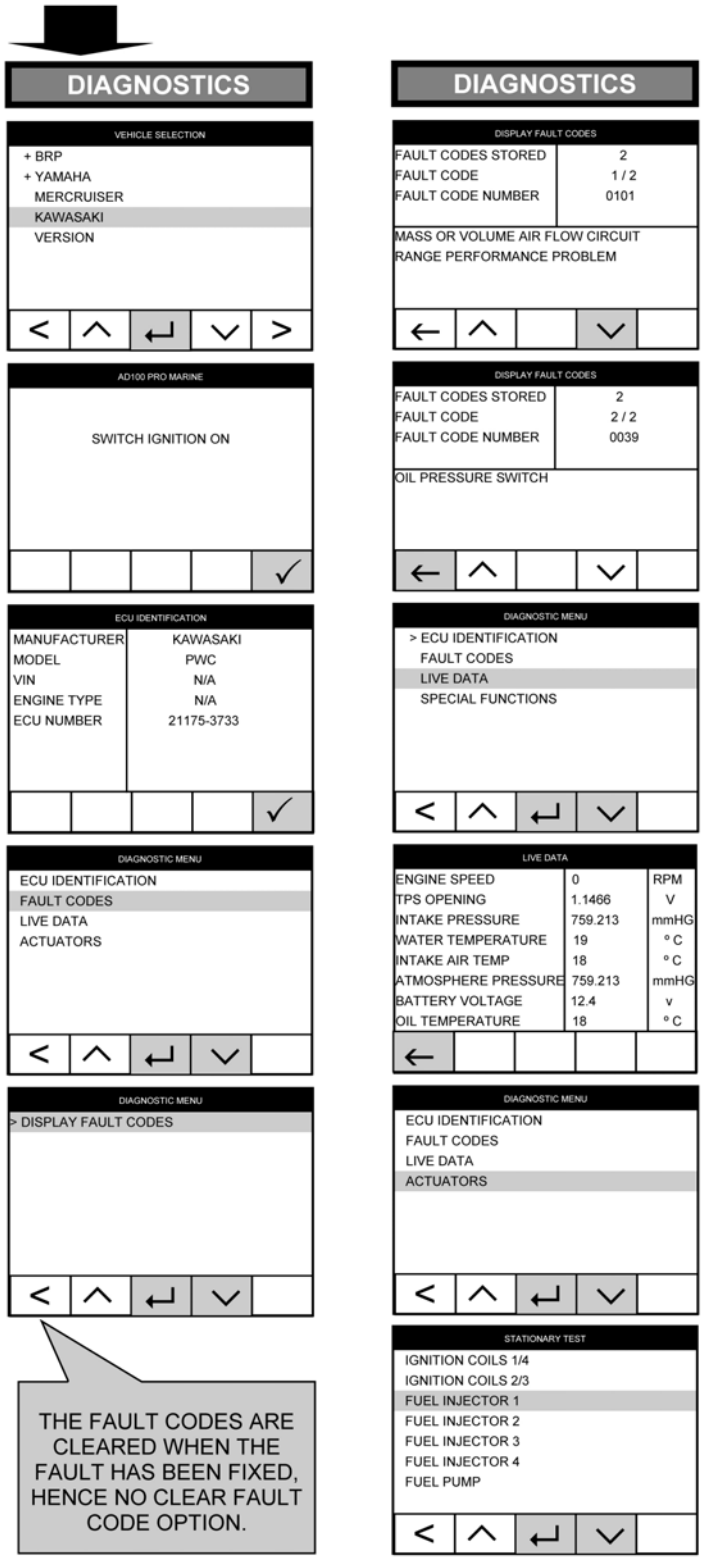
LIVE DATA
This function displays a list of LIVE DATA values from the engine ECU. This data list is what is available from the engine ECU, and each value will change as the engine components are operated. Please refer to vehicle manufacturers data for correct values and correct operating limits.

ACTUATORS
These tests are useful for finding our specific problems with the engine. The tests include :
IGNITION COILS 1/4 (Operates Ignition coils 1 and 4)
IGNITION COILS 2/3 (Operates Ignition coils 2 and 3)
FUEL INJECTOR 1 (Operates Fuel Injector 1)
FUEL INJECTOR 2 (Operates Fuel Injector 2)
FUEL INJECTOR 3 (Operates Fuel Injector 3)
FUEL INJECTOR 4 (Operates Fuel Injector 4)
FUEL PUMP (Operates Fuel Pump)

4 KAWASAKI-D

SPECIAL FUNCTIONS

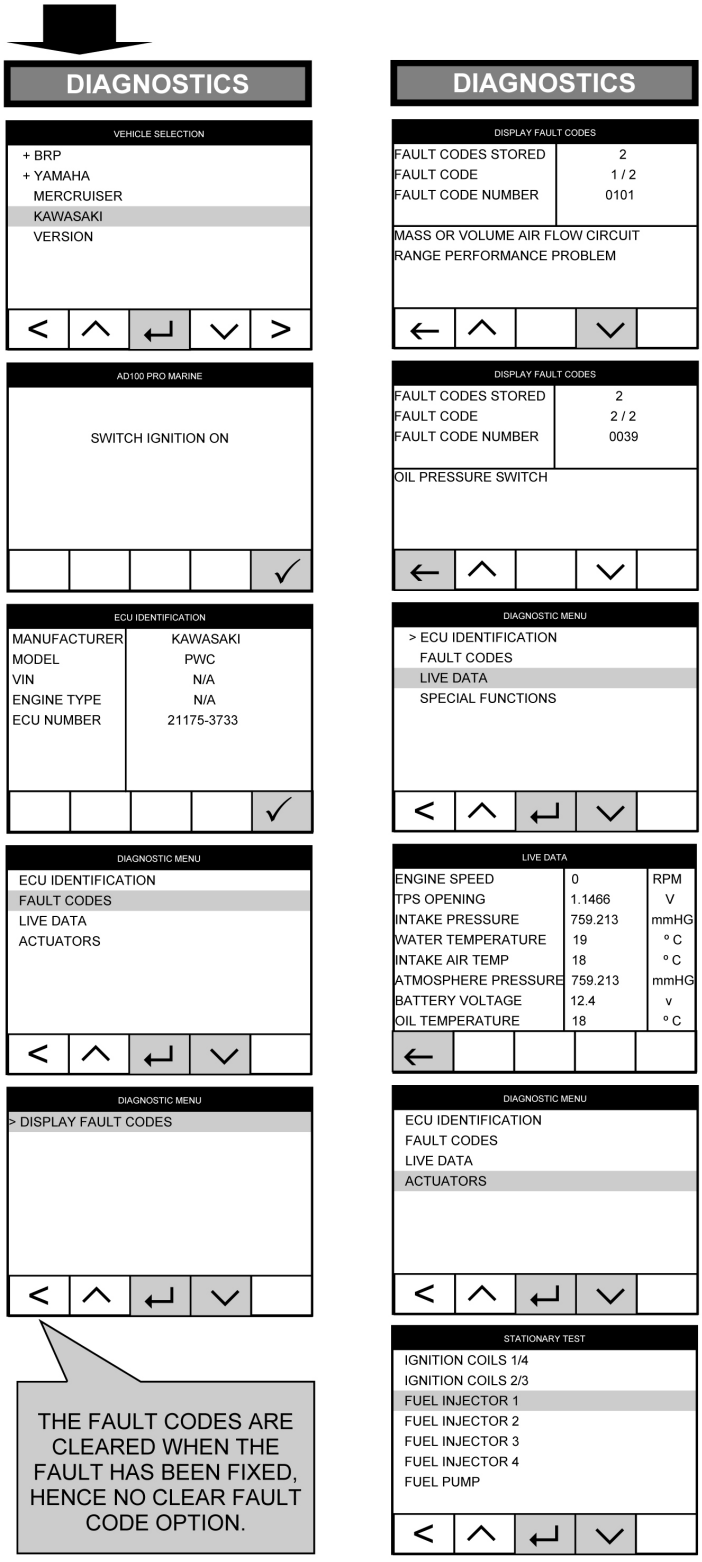
Kawasaki Jet Ski (4 Stroke)



4 KAWASAKI-D

SPECIAL FUNCTIONS

Kawasaki Jet Ski (DI Fitch)



5 BRP/SEADOO

BRP (JOHNSON & EVINRUDE)/SEADOO OPERATING MANUAL

Contents

5 BRP/SEADOO-A APPLICATIONS

Seadoo diagnostics

			DTC 12,14			
GTX (DESS RFI)	1998⇨2002	✓	✓	✓	ADC300 + ADC404 + ADC450	D
GSX (DESS RFI)	1999⇨2000	✓	✓	✓	ADC300 + ADC404 + ADC450	D
GTI (DESS RFI)	2004⇨2006	✓	✓	✓	ADC300 + ADC404 + ADC450	D
GTI-LE (DESS RFI)	2003⇨2006	✓	✓	✓	ADC300 + ADC404 + ADC450	D
GTI-RENTAL (DESS RFI)	2006	✓	✓	✓	ADC300 + ADC404 + ADC450	D
3D RFI (DESS RFI)	2004⇨2005	✓	✓	✓	ADC300 + ADC404 + ADC450	D
GTX DI (947 DI)	2000⇨2003	✓	✓	✓	ADC300 + ADC404 + ADC450	C
RX DI (947 DI)	2000⇨2003	✓	✓	✓	ADC300 + ADC404 + ADC450	C
LRV DI (947 DI)	2003	✓	✓	✓	ADC300 + ADC404 + ADC450	C
XP DI (947 DI)	2003⇨2004	✓	✓	✓	ADC300 + ADC404 + ADC450	C
GTX 4TEC (4 TEC)	2003⇨2006	✓	✓	✓	ADC300 + ADC404	B
GTX WAKE (4 TEC)	2003⇨	✓	✓	✓	ADC300 + ADC404	B
GTX LTD SUPERCHARGED (4 TEC)	2003⇨2007	✓	✓	✓	ADC300 + ADC404	B
GTX 155 (4 TEC)	2007⇨	✓	✓	✓	ADC300 + ADC404	B
RXP (4 TEC)	2004⇨	✓	✓	✓	ADC300 + ADC404	B
RXP-X (4 TEC)	2008⇨	✓	✓	✓	ADC300 + ADC404	B
RXT (4 TEC)	2005⇨	✓	✓	✓	ADC300 + ADC404	B
RXT-X (4 TEC)	2008⇨	✓	✓	✓	ADC300 + ADC404	B
GTI (4 TEC)	2007⇨	✓	✓	✓	ADC300 + ADC404	B
GTI RENTAL (4 TEC)	2007⇨	✓	✓	✓	ADC300 + ADC404	B
GTI SE (4 TEC)	2007⇨	✓	✓	✓	ADC300 + ADC404	B
WAKE 155	2008⇨	✓	✓	✓	ADC300 + ADC404	B
WAKE 215	2008	✓	✓	✓	ADC300 + ADC404	B
WAKE PRO 215	2009	✓	✓	✓	ADC300 + ADC404	B

5 BRP/SEADOO-A APPLICATIONS

BRP Johnson Evinrude Diagnostics

		DTC 12,14				
(E– Tech) COMMERCIAL 65 – 90 HP	2000⇨	✓	✓	✓	ADC300 + ADC423	A
(E– Tech) INLINE 25 – 90 HP	2000⇨	✓	✓	✓	ADC300 + ADC423	A
(E– Tech) 60 DEGREE V4 115, 115 HO, 130HP	2000⇨	✓	✓	✓	ADC300 + ADC423	A
(E-Tech) 60 DEGREE V6 150, 150 HO, 175, 200HP	2000⇨	✓	✓	✓	ADC300 + ADC423	A
E– Tech) 90 DEGREE 200 HO, 225, 225 HO, 250, 250 HO, 300	2000 ⇨	✓	✓	✓	ADC300 + ADC423	A
BRP EVINRUDE FITCH (ALL MODELS)	⇨2000	✓	✓	✓	ADC300 + ADC423	A

5 BRP/SEADOO-A APPLICATIONS

Seadoo Key Programming

				
GTX DI (947 DI)	2000⇨2003	✓	ADC300 + ADC404 + ADC450	C
RX DI (947 DI)	2000⇨2003	✓	ADC300 + ADC404 + ADC450	C
LRV DI (947 DI)	2003	✓	ADC300 + ADC404 + ADC450	C
XP DI (947 DI)	2003⇨2004	✓	ADC300 + ADC404 + ADC450	C

				
GTX 4TEC (4 TEC)	2003⇨2006	✓	ADC300 + ADC404	B
GTX WAKE (4 TEC)	2003⇨	✓	ADC300 + ADC404	B
GTX LTD SUPERCHARGED (4 TEC)	2003⇨2007	✓	ADC300 + ADC404	B
GTX 155 (4 TEC)	2007⇨	✓	ADC300 + ADC404	B
RXP (4 TEC)	2004⇨	✓	ADC300 + ADC404	B
RXP-X (4 TEC)	2008⇨	✓	ADC300 + ADC404	B
RXT (4 TEC)	2005⇨	✓	ADC300 + ADC404	B
RXT-X (4 TEC)	2008⇨	✓	ADC300 + ADC404	B
GTI (4 TEC)	2007⇨	✓	ADC300 + ADC404	B
GTI RENTAL (4 TEC)	2007⇨	✓	ADC300 + ADC404	B
GTI SE (4 TEC)	2007⇨	✓	ADC300 + ADC404	B
WAKE 155	2008⇨	✓	ADC300 + ADC404	B
WAKE 215	2008	✓	ADC300 + ADC404	B
WAKE PRO 215	2009	✓	ADC300 + ADC404	B

5 BRP/SEADOO-B

DIAGNOSTIC SOCKET LOCATIONS

Seadoo

SEADOO RX JET SKI

SEADOO JET BOAT

Evinrude

EVINRUDE E-TEC ENGINE

Connector usually found on Starboard side of engine in retaining cap attached to flywheel cover.

5 BRP/SEADOO-C GENERAL OPERATION

Seadoo

READ FAULT CODES
Displays the list of diagnostic trouble codes that are currently on the engine.
Each fault needs to be investigated and fixed.

CLEAR FAULT CODES
This function resets any fault codes in the ECU memory, once they have been fixed. If the problem has not been fixed, then the fault code will reappear.

LIVE DATA
This function displays a list of LIVE DATA values from the engine ECU. This data list is what is available from the engine ECU, and each value will change as the engine components are operated. Please refer to vehicle manufacturers data for correct values and correct operating limits.

ACTUATORS
These tests are useful for finding our specific problems with the engine. The tests include :
BUZZER
FUEL PUMP
BLOW BY VALVE
BILGE PUMP
CLOSE THROTTLE
CPI VALVE
ENGINE OFF

SERVICE DATA
This function displays the service data of the craft, with hours run and the last service date.

RESET SERVICE
This function resets the last service data, and allows the user to put in the new service date.

5 BRP/SEADOO-D FAULT CODES

BRP/Johnson/Evinrude

1	CYLINDER 1	EXCESSIVE KNOCK
2	CYLINDER 2	EXCESSIVE KNOCK
3	CYLINDER 3	EXCESSIVE KNOCK
4	CYLINDER 4	EXCESSIVE KNOCK
5	CYLINDER 5	EXCESSIVE KNOCK
6	CYLINDER 6	EXCESSIVE KNOCK
7	KNOCK SENSOR DETECTED	PORT
8	KNOCK SENSOR DETECTED	STBD
9	NOT DEFINED	
10	NOT DEFINED	
11	THROTTLE POSITION SENSOR	OUT OF IDLE RANGE
12	THROTTLE POSITION SENSOR	FAULT DETECTED
13	THROTTLE POSITION SENSOR	BELOW EXPECTED RANGE
14	THROTTLE POSITION SENSOR	ABOVE EXPECTED RANGE
15	ROM CHEKC SUM ERROR	
16	CRANKSHAFT POSTION SENSOR INTERMITTENT LOSS OF SYNC	
17	SYSTEM VOLTAGE 55V	BELOW EXPECTED RANGE
18	SYSTEM VOLTAGE 55V	ABOVE EXPECTED RANGE
19	ATTEMPT TO START IN GEAR FIRST	
20	NOT DEFINED	
21	AUTO WINTERIZATION ACTIVATED	
22	OVERHEAT SWITCH	CLOSED
23	EMM TEMPERATURE SENSOR	CIRCUIT MALFUNCTION
24	EMM TEMPERATURE	BELOW EXPECTED RANGE
25	EMM TEMPERATURE	ABOVE EXPECTED RANGE
26	BATTERY VOLATGE 12V	BELOW EXPECTED RANGE EXCESSIVE BATTERY LOAD
27	BATTERY VOLATGE 12V	ABOVE EXPECTED RANGE
28	START ASSIST	CIRCUIT MALFUNCTION
29	ENGINE SHUTDOWN DUE TO EMM ABOVE MAX TEMP	
30	NOT DEFINED	
31	ENGINE SHUTDOWN DUE TO ENGINE ABOVE MAX TEMP	
32	OIL PRESSURE SWITCH NOT SEITCHING BETWEEN OIL PULSES	
33	EXCESSIVE NO OIL FAULTS	
34	OIL SOLENOID FUEL INJECTOR	OPEN CIRCUIT
35	NO OIL PRESSURE	
36	CYCLINDER OILER SOLENOID NOT CONNECTED	
37	WATER IN FUEL DETECTED	
38	OIL PRESSURE PULSES IN DISTRIBUTION MANIFOLD	NOT DETECTED
39	OIL SYSTEM PRIME	FAILURE
40	ENGINE TEMP	ABOVE EXPECTED RANGE LOW SPEED PORT OR SINGLE
41	ENGINE TEMPERATURE SENSOR	FAULT DETECTED PORT OR SINGLE

5 BRP/SEADOO-D FAULT CODES

BRP/Johnson/Evinrude

42	ENGINE TEMPERATURE SENSOR	BELOW EXPECTED RANGE PORT OR SINGLE
43	ENGINE TEMPERATURE SENSOR	ABOVE EXPECTED RANGE PORT OR SINGLE
44	ATMOSPHERE PRESSURE SENSOR	CIRCUIT MALFUNCTION
45	ATMOSPHERE PRESSURE SENSOR	BELOW EXPECTED RANGE
46	ATMOSPHERE PRESSURE SENSOR	ABOVE EXPECTED RANGE
47	AIR TEMP SENSOR	FAULT DETECTED
48	AIR TEMP	BELOW EXPECTED RANGE
49	AIR TEMP	ABOVE EXPECTED
50	NOT DEFINED	
51	CYLINDER 1 FUEL INJECTOR	OPEN CIRCUIT
52	CYLINDER 2 FUEL INJECTOR	OPEN CIRCUIT
53	CYLINDER 3 FUEL INJECTOR	OPEN CIRCUIT
54	CYLINDER 4 FUEL INJECTOR	OPEN CIRCUIT
55	CYLINDER 5 FUEL INJECTOR	OPEN CIRCUIT
56	CYLINDER 6 FUEL INJECTOR	OPEN CIRCUIT
57	HIGH SPEED LOW THOTTLE	NON TRANSIENT CONDITION DETECTED
58	ENGINE FAILED TO ATTAIN PROPER OPERTAING TEMP	PORT OR SINGLE
59	ENGINE FAILED TO ATTAIN PROPER OPERTAING TEMP	STBD
60	NOT DEFINED	
61	CYLINDER 1 FUEL INJECTOR	SHORT CIRCUIT
62	CYLINDER 2 FUEL INJECTOR	SHORT CIRCUIT
63	CYLINDER 3 FUEL INJECTOR	SHORT CIRCUIT
64	CYLINDER 4 FUEL INJECTOR	SHORT CIRCUIT
65	CYLINDER 5 FUEL INJECTOR	SHORT CIRCUIT
66	CYLINDER 6 FUEL INJECTOR	SHORT CIRCUIT
67	ENGINE TEMP SENSOR	FAULT DETECTED STBD
68	ENGINE TEMP	BELOW EXPECTED RANGE STBD
69	ENGINE TEMP	ABOVE EXPECTED RANGE STBD
70	ENGINE TEMP	ABOVE EXPECTED RANGE LOW SPEED STARBOARD
71	OIL PRESSURE CIRCUIT	FAULT DETECTED
72	OIL PRESSURE	BELOW EXPECTED RANGE
73	OIL PRESSURE	ABOVE EXPECTED RANGE
74	WATER PRESSURE CIRCUIT	FAULT DETECTED
75	WATER PRESSURE	BELOW EXPECTED RANGE
76	WATER PRESSURE	ABOVE EXPECTED RANGE
77	START ASSIST CIRCUIT	OVERCURRENT FAULT
78	ANALOG V SUPPLY	OVERLOAD DETECTED
79	STARTER SOLENOID CIRCUIT	OPEN CIRCUIT
80	NOT DEFINED	
81	CYCLINDER 1 IGNITION PRIMARY	OPEN CIRCUIT

5 BRP/SEADOO-D

FAULT CODES

BRP/Johnson/Evinrude

82	CYCLINDER 2 IGNITION PRIMARY	OPEN CIRCUIT
83	CYCLINDER 3 IGNITION PRIMARY	OPEN CIRCUIT
84	CYCLINDER 4 IGNITION PRIMARY	OPEN CIRCUIT
85	CYCLINDER 5 IGNITION PRIMARY	OPEN CIRCUIT
86	CYCLINDER 6 IGNITION PRIMARY	OPEN CIRCUIT
87	EXHAUST PRESSURE CIRCUIT	FAULT DETECTED
88	EXHAUST PRESSURE	BELOW EXPECTED RANGE
89	EXHAUST PRESSURE	ABOVE EXPECTED RANGE
90	WATER FUEL INJECTOR	SHORT CIRCUIT
91	FUEL PUMP	OPEN CIRCUIT
92	EXHAUST VALVE SOLENOID	OPEN CIRCUIT
93	WATER INJECTION SOLENOID	OPEN CIRCUIT
94	EXCESS FUEL PUMP CURRENT	DETECTED
95	NOT DEFINED	
96	NOT DEFINED	
97	INTERMITTANT SWITCHED B	DETECTED
98	AIR GALVE	OPEN CIRCUIT
99	AIR GALVE	SHORT CIRCUIT
100	NOT DEFINED	
101	CYCLINDER 1 IGNITION COIL	SHORT CIRCUIT
102	CYCLINDER 2 IGNITION COIL	SHORT CIRCUIT
103	CYCLINDER 3 IGNITION COIL	SHORT CIRCUIT
104	CYCLINDER 4 IGNITION COIL	SHORT CIRCUIT
105	CYCLINDER 5 IGNITION COIL	SHORT CIRCUIT
106	CYCLINDER 6 IGNITION COIL	SHORT CIRCUIT
107	ICON CONTROL HEAD	LOST COMMUNICATION
108	ICON SYSTEM FAIL SAFE MODE	
109	ICON CONTROL HEAD	HARDWARE FAILURE
110	ICON TRIM SWITCH MODULE	COMM FAULT
111	ICON ESM	COMM FAULT
112	NOT DEFINED	
113	NOT DEFINED	
114	EXHAUST TEMPERATURE SENSOR	CIRCUIT MALFUNCTION
115	EXHAUST TEMPERATURE SENSOR	BELOW EXPECTED RANGE
116	EXHAUST TEMPERATURE SENSOR	ABOVE EXPECTED RANGE
117	CRITICIAL LOW OIL	DETECTED
118	NOT DEFINED	
119	NOT DEFINED	
120	OIL LEVEL SENSOR	OPEN CIRCUIT
121	EMM MAJOR OVERHEAT	
122	ENGINE MAJOR OVERHEAT	
123	RESERVED	
124	RESERVED	
125	RESERVED	

5 BRP/SEADOO-D FAULT CODES

BRP/Johnson/Evinrude

126	RESERVED	
127	RESERVED	
128	RESERVED	
129	RESERVED	
130	NOT DEFINED	
131	RESERVED	
132	RESERVED	
133	RESERVED	
134	RESERVED	
135	RESERVED	
136	RESERVED	
137	RESERVED	
138	RESERVED	
139	RESERVED	
140	NOT DEFINED	
141	RESERVED	
142	RESERVED	
143	RESERVED	
144	LIMP HOME ACTIVATED	EXCESSIVE KNOCK ON MAG 1
145	RESERVED	
146	RESERVED	
147	RESERVED	
148	LIMP HOME ACTIVATED	EXCESSIVE KNOCK ON PTO 2
149	ICON THROTTLE ACTUATOR SENSOR	FAULT
150	ICON THROTTLE ACTUATOR MOTION	FAULT
151	ICON SHIFT ACTUATOR SENSOR	FAULT
152	ICON SHIFT ACTUATOR MOTION	FAULT
153	RESERVED	
154	RESERVED	
155	RESERVED	
156	RESERVED	
157	RESERVED	
158	RESERVED	
159	RESERVED	
160	NOT DEFINED	
161	RESERVED	
162	RESERVED	
163	RESERVED	
164	RESERVED	
165	RESERVED	
166	RESERVED	
167	RESERVED	
168	RESERVED	
169	RESERVED	

5 BRP/SEADOO-D FAULT CODES

BRP/Johnson/Evinrude

170	NOT DEFINED
171	RESERVED
172	RESERVED
173	RESERVED
174	RESERVED
175	RESERVED
176	RESERVED
177	RESERVED
178	RESERVED
179	RESERVED
180	NOT DEFINED
181	RESERVED
182	RESERVED
183	RESERVED
184	RESERVED
185	RESERVED
186	RESERVED
187	RESERVED
188	RESERVED
189	RESERVED
190	NOT DEFINED
191	RESERVED
192	RESERVED
193	RESERVED
194	RESERVED
195	RESERVED
196	RESERVED
197	RESERVED
198	RESERVED
199	RESERVED
200	NOT DEFINED
201	NOT DEFINED
202	NOT DEFINED
203	NOT DEFINED
204	NOT DEFINED
205	NOT DEFINED
206	NOT DEFINED
207	NOT DEFINED
208	NOT DEFINED
209	NOT DEFINED
210	NOT DEFINED
211	RESERVED
212	RESERVED
213	RESERVED

5 BRP/SEADOO-D FAULT CODES

BRP/Johnson/Evinrude

214	RESERVED
215	RESERVED
216	RESERVED
217	RESERVED
218	RESERVED
219	RESERVED
220	NOT DEFINED
221	RESERVED
222	RESERVED
223	RESERVED
224	RESERVED
225	RESERVED
226	RESERVED
227	RESERVED
228	RESERVED
229	RESERVED
230	NOT DEFINED
231	RESERVED
232	RESERVED
233	RESERVED
234	RESERVED
235	RESERVED
236	RESERVED
237	RESERVED
238	RESERVED
239	RESERVED
240	NOT DEFINED
241	RESERVED
242	RESERVED
243	RESERVED
244	RESERVED
245	RESERVED
246	RESERVED
247	RESERVED
248	RESERVED
249	RESERVED
250	NOT DEFINED
251	RESERVED
252	RESERVED
253	RESERVED
254	RESERVED
255	RESERVED
256	RESERVED

5 BRP/SEADOO-D FAULT CODES

Seadoo 4 TEC

P0106	Manifold atmospheric pressure sensor out of range
P0107	Manifold atmospheric pressure sensor or Manifold barometric pressure sensor shorted to ground
P0108	Manifold atmospheric pressure sensor or Manifold barometric pressure sensor shorted to 12V or open cct
P0111	Intake manifold temp sensor faulty
P0112	Intake manifold shorted to ground
P0113	Intake manifold shorted to 12V or open circuit
P0116	Engine temp sensor faulty
P0117	Engine temp sensor shorted to ground
P0118	Engine temp sensor shorted to 12V or open circuit
P0122	TPS out of range - short to ground
P0123	TPS out of range - short to 12V or open circuit
P0231	Fuel pump shorted to ground or open circuit
P0232	Fuel pump shorted to 12V
P0261	#1 injector short to ground or open circuit
P0262	#1 injector shorted to 12V
P0264	#2 injector short to ground or open circuit
P0265	#2 injector shorted to 12V
P0267	#3 injector short to ground or open circuit
P0268	#3 injector shorted to 12V
P0236	Knock sensor out of range
P0336	Crank position sensor - wrong RPM detected
P0337	No CPS signal but CAPS signal detected
P0339	Crank signal fault not plausible with cam signal
P0344	Cam phase sensor signal missing
P0351	Ignition coil #1 open circuit or shorted to ground or to 12V
P0352	Ignition coil #2 open circuit or shorted to ground or to 12V
P0353	Ignition coil #3 open circuit or shorted to ground or to 12V
P0461	Fuel level sensor circuit out of range
P0462	Fuel level sensor shorted to ground
P0463	Fuel level sensor circuit shorted to 12V or open circuit
P0505	DLA output stage cut off memory circuit or output stage fault or open circuit or short to 12V
P0513	Incorrect DESS key
P0520	Oil pressure switch faulty
P0544	Exhaust gas temperature sensor faulty
P0545	Exhaust gas temperature switch shorted to ground
P0546	Exhaust gas temperature switch shorted to 12V or open circuit
P0562	Battery voltage too low
P0536	Battery voltage too high
P0600	CAN communication problem detected by EMS or MPEM
P0601	TPS learns unlikely or checksum fault
P0602	ECU not coded
P0604	RAM faulty
P0605	EEPROM faulty
P0605	Checksum fault EEPROM
P0608	Sensor 5V power supply short to ground
P0608	Sensor 5V power supply short to 12V
P0616	Starter relay short to ground or open circuit
P0617	Starter relay short to 12V

5 BRP/SEADOO-D FAULT CODES

Seadoo 4 TEC

P1102	TPS adaption failure
P1104	TPS adaption cancelled
P1148	Fuel injector 1 2 or 3 - safety fuel cutoff disabled
P1200	Blow-by valve shorted to ground or open circuit
P1201	Blow-by valve shorted to 12V
P1202	Oil tank pressure switch implausible or blow-by valve still closed
P1502	TOPS functional problem
P1509	Lake temperature circuit out of range
P1510	Lake temperature circuit low voltage
P1511	Lake temperature circuit high voltage
P1513	Exterior temperature circuit low voltage
P1514	Exterior temperature circuit high voltage
P1517	Compass out of range
P1590	VTS position sensor out of range
P1591	VTS position sensor - low voltage
P1592	VTS position sensor - high voltage
P1593	VTS malfunction
P1607	MPEM fault
P1611	P+ Test of ISC output signal failed
P1655	DESS line shorted to 12v
P1656	DESS line shorted to ground
P1660	Bilge pump shorted to ground or open circuit
P1661	Bilge pump shorted to 12v
P1670	Buzzer – short to battery voltage
P1675	Spare output 1 shorted to ground or open circuit
P1676	Spare output 1 shorted to 12V
P1678	Spare output 2 shorted to ground or open circuit
P1679	Spare output 2 shorted to 12V
P1680	Communication problem detected by MPEM
P1681	Communication problem - instrument cluster message missing
P1682	Communication problem - EMS message missing
P1683	COM RAM fault
P1690	VTS control up circuit open circuit or shorted to ground
P1691	VTS control up circuit shorted to battery
P1692	VTS control down circuit open circuit or shorted to ground
P1693	VTS control down circuit shorted to battery
P0344	P1200 - Burnt TOPS 10A fuse
P1675	Burnt depth gauge or spare 2A fuse
P0353	P0267 - Burnt cylinder #3 ignition coil and injection 10A fuse
P0352	P0264 - Burnt cylinder #2 ignition coil and injection 10A fuse
P0351	P0261 - Burnt cylinder #1 ignition coil and injection 10A fuse
P1680	P1681 - Burnt information center 1A fuse
P0616	Burnt Bilge pump, beeper, diagnostic center 3A fuse
P1678	Burnt spare 5A fuse
P0231	Burnt starter, fuel pump 10A fuse
P0600	Burnt MPEM 2A fuse
P1690	P1692 - Burnt VTS 7.5A fuse

5 BRP/SEADOO-D

FAULT CODES

Seadoo DI

P1100	Direct injector MAG
P1101	Direct injector PTO
P0201	Fuel injector MAG
P0202	Fuel injector PTO
P0351	Ignition coil
P0352	Ignition coil
P0335	Encoder (CPS) Encoder Wrong pattern sensed
P0120	TPS
P0220	TPS
P1102	TPS
P1103	TPS
P0116	WTS
P0217	WTS
P0110	MATS
P0106	MAPS MAP Sensor out of range
P0105	MAPS
P1400	EGTS
P1401	EGTS
P0460	Fuel level sensor
P0230	Fuel pump
P0475	RAVE
P1300	Starting system
P0563	Battery voltage
P1500	Battery voltage
P0562	Battery voltage
P1501	Battery voltage
P0122	Sensor supply (TPS, MAG and MAPS)
P0222	Sensor supply (TPS, PTO)
P1600	ECU SETUP TDC and ECU not initialised
P0606	ECU
P0325	Knock sensor
P1601	Diagnostic cap

5 BRP/SEADOO-D FAULT CODES

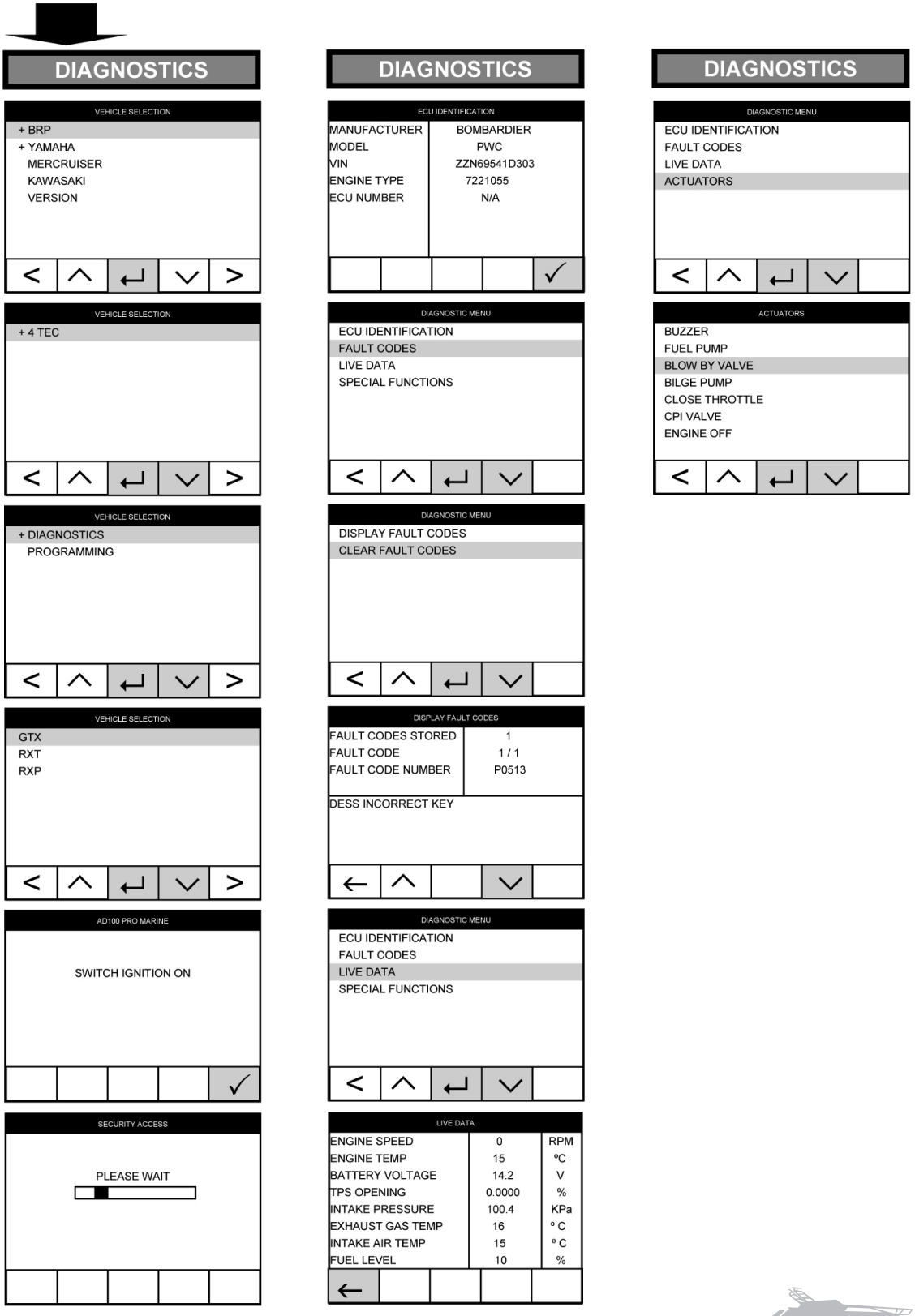
Seadoo RFI

P-0079	Rave valve solenoid signal too low
P-0080	Rave valve solenoid signal to high
P-0106	Manifold atmospheric pressure sensor out of range
P-0107	Manifold atmospheric pressure sensor shorted to ground
P-0108	Manifold atmospheric pressure sensor shorted to 12 V or open circuit
P-0111	Intake manifold temperature sensor functional problem
P-0112	Intake manifold temperature sensor shorted to ground
P-0113	Intake manifold temperature sensor shorted to 12 V or open circuit
P-0116	Engine temperature functional problem
P-0117	Engine temperature sensor short circuit to ground
P-0122	Throttle position sensor out of range
P-0122	Throttle position sensor short circuit to ground
P-0123	Throttle position sensor out of range - short-circuit to 12 V or open circuit
P-0231	Fuel pump shorted to ground or open circuit
P-0232	Fuel pump shorted to 12 V
P-0261	Inj #1 short-circuit to ground or open circuit
P-0262	Inj # 1 short-circuit to 12 V
P-0264	Inj #2 short-circuit to ground or open circuit
P-0265	Inj #2 short-circuit to 12 V
P-0336	Engine speed > [rpm] detected
P-0351	Ignition coil 1 open circuit or shorted to ground or to 12 V
P-0352	Ignition coil 2 open circuit or shorted to ground or to 12 V
P-0513	DESS incorrect key
P-0562	Battery voltage too low
P-0563	Battery voltage too high
P-0601	TPS learns unlikely or checksum fault
P-0601	Module call monitoring
P-0602	ECM not coded
P-0604	RAM faulty
P-0605	EPROM faulty
P-0605	Checksum fault EEPROM
P-0605	Coding ID checksum fault
P-0605	Coding checksum fault
P-0605	Programming checksum fault
P-0608	Sensor 5 V power supply short to gnd
P-0616	Starter relay open circuit
P-0617	Starter relay shorted to 12 V
P-0650	Check engine circuit open circuit or shorted to ground
P-1102	Throttle position sensor adaptation failure
P-1104	Throttle position sensor adaptation canceled
P-1148	Fuel injector 1 or 2 safety fuel cut off detected
P-1611	Engine speed > [rpm] detected
P-1655	DESS® line shorted to 12 V
P-1656	DESS® line shorted to ground
P-1670	Buzzer - Short to Battery Voltage
P-1671	Buzzer short-circuit to ground or open

5 BRP/SEADOO-E

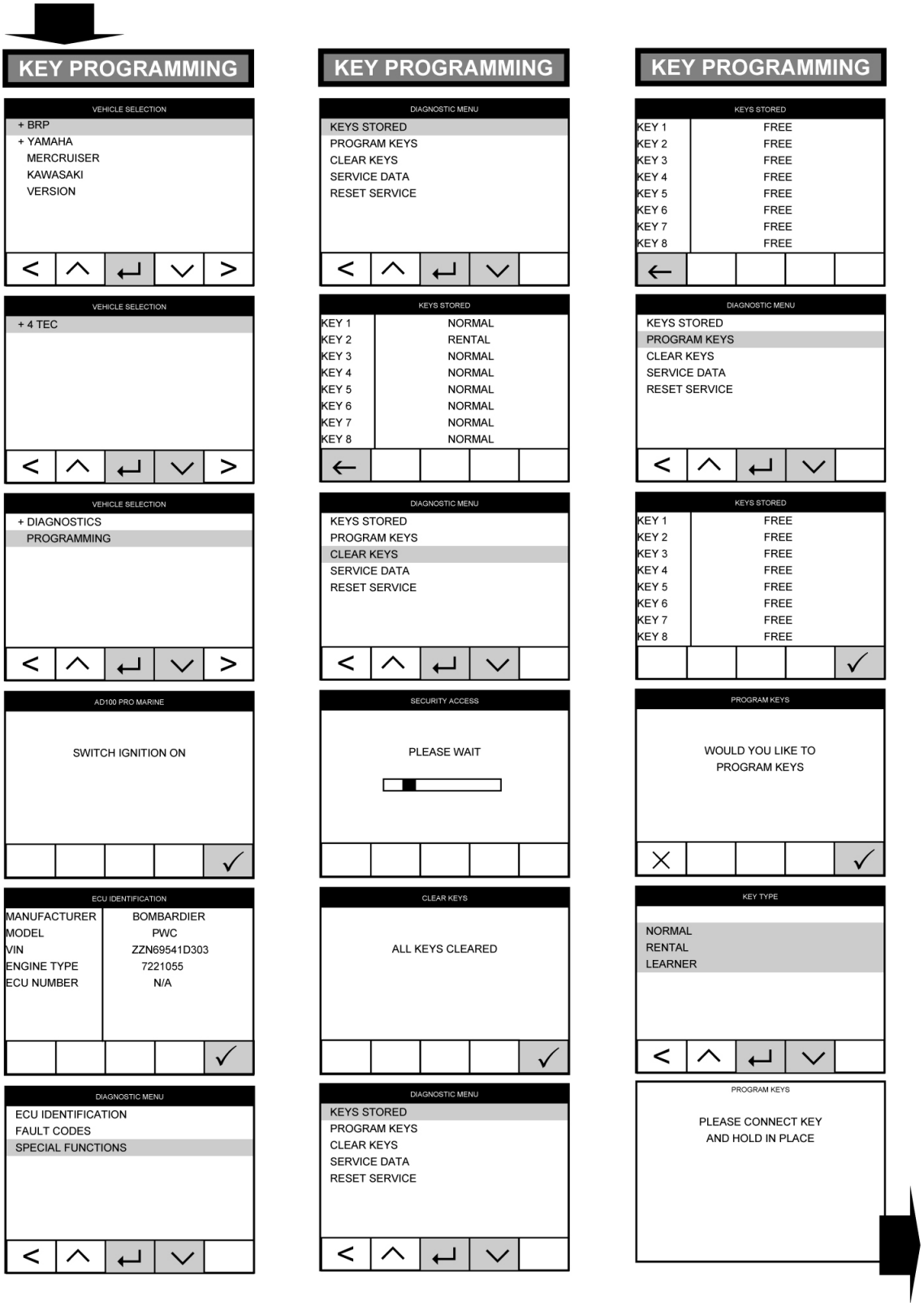
SPECIAL FUNCTIONS

Seadoo
Jet Ski (4 Tec)



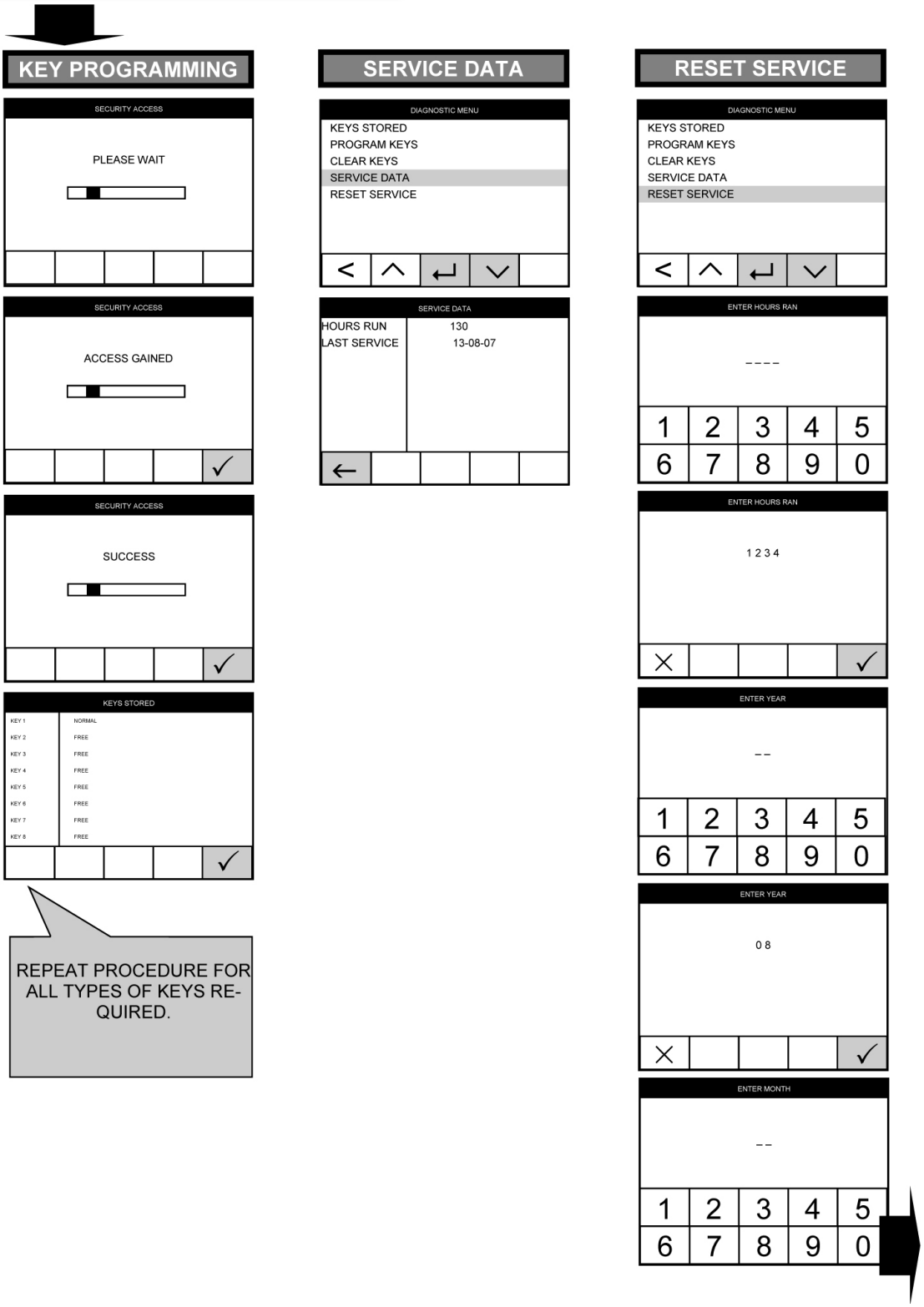
5 BRP/SEADOO-E SPECIAL FUNCTIONS

Seadoo Jet Ski (4 Tec) Key Prog



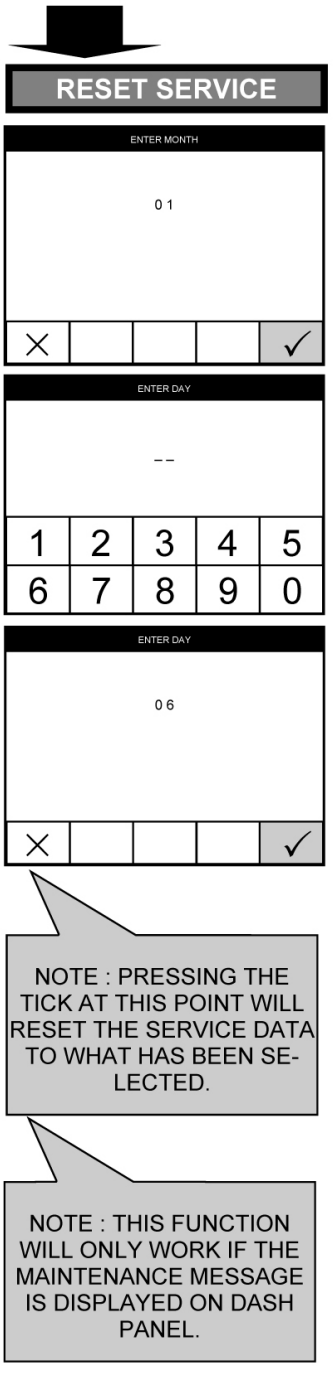
5 BRP/SEADOO-E SPECIAL FUNCTIONS

Seadoo
Jet Ski (4 Tec)



5 BRP/SEADOO-E SPECIAL FUNCTIONS

Seadoo Jet Ski (4 Tec)



5 BRP/SEADOO-F GLOSSARY

ADC	Analog to Digital Conversion
AC	Alternate Current
AP	Air Pressure Sensor
ATS	Air Temperature Sensor
B.U.D.S	Bombardier Utility and Diagnostic Software
CDI	Capacitor Discharge Ignition
CPS	Crankshaft Position Indicator
CSI	Cooling System Indicator
DC	Direct Current
DESS	Digital Electronic Security System
DI	Direct Injected
E.I.N	Engine Identification Number
ECM	Electronic Control Module
ECU	Electric Control Unit
EMS	Engine Management System
EPA	Environmental Protection Agency (USA)
HP	Horse Power
LED	Light Emitting Diode
MAG	Magneto
MPEM	Multi-Purpose Electronic Module
MPH	Mile Per Hour
MPI	Multi Protocol Interface
OPT	Optional
P/N	Part Number
PFD	Personal Flotation Device
PSI	Pounds Per Square Inch
PTO	Power Take Off
RAVE	Rotax Adjustable Variable Exhaust
RFI	Rotax Fuel Injection
RPM	Revolutions Per Minute
STD	Standard
TDC	Top Dead Centre
TPS	Throttle Position Sensor
VDC	Volts Direct Current
VCK	Vehicle Communication Kit
VTS	Variable Trim System
WTS	Water Temperature sensor

5 BRP/SEADOO-G

SEADOO TROUBLESHOOTING

CODED SIGNALS	POSSIBLE	CAUSE REMEDY
2 short beeps (while installing safety lanyard on post).	• Confirms safety lanyard signal operation.	Engine can be started.
1 long beep(while installing Safety lanyard on watercraft post.	• Bad DESS system connection.	Reinstall safety lanyard cap correctly over post.
	• Wrong safety lanyard.	Use a safety lanyard that has been programmed for the watercraft.
	• Defective safety lanyard.	Use another programmed safety lanyard.
	• Dried salt water in safety lanyard cap.	Clean safety lanyard cap to remove salt water.
	• Defective DESS post.	Refer to an authorized Seadoo dealer.
	• Improper operation of EMS ECU or defective wiring harness.	Refer to an authorized Seadoo dealer.
1 short beep followed by 1 long beep.	• EMS ECU has been inadvertently set to onboard diagnostic mode.	Remove and reinstall safety lanyard.
4 short beeps every 3 seconds interval for 4 hours.	• Safety lanyard has been left on its post without starting engine or after engine was stopped.	To prevent battery discharge, remove the safety lanyard from its post.
A 2 seconds beep every minute interval.	• High pressure in oil separator tank.	Refer to an authorized Seadoo dealer.
	• Low fuel level.	Refer to an authorized Seadoo dealer.
	• Fuel tank level sensor or circuit malfunction.	Refer to an authorized Seadoo dealer.

5 BRP/SEADOO-G

SEADOO TROUBLESHOOTING

CODED SIGNALS	POSSIBLE	CAUSE REMEDY
A 2 seconds beep every 15 minutes interval.	• Watercraft is upside down.	Turn watercraft upright. Refer to SPECIAL PROCEDURES.
	• Engine coolant temperature sensor or circuit malfunction.	Refer to an authorized Seadoo dealer.
	• Fuel level sensor or circuit malfunction.	Refer to an authorized Seadoo dealer.
	• Exhaust temperature sensor or circuit malfunction.	Refer to an authorized Seadoo dealer.
	• Engine oil pressure sensor or circuit malfunction.	Refer to an authorized Seadoo dealer.
	• Low pressure in oil separator tank (engine oil leak).	Refer to an authorized Seadoo dealer.
	• TOPS sensor or circuit malfunction.	Refer to an authorized Seadoo dealer.
	• TOPS valve solenoid or circuit malfunction.	Refer to an authorized Seadoo dealer.
	• EMS ECU failure.	Refer to an authorized Seadoo dealer.
	• Bilge pump circuit low or high voltage (if so equipped).	Refer to an authorized Seadoo dealer.
	• Starter solenoid circuit malfunction.	Refer to an authorized Seadoo dealer.
Continuously beeps.	• High engine temperature coolant.	See engine OVERHEATING
	• High exhaust temperature.	Refer to an authorized Seadoo dealer.

6 SUZUKI

SUZUKI

Contents

6 SUZUKI-A APPLICATIONS

SUZUKI 4-STROKE

		DTC 12,14				
DF40, DF50	Note 1	✓	✓	✓	ADC300 + ADC420 or ADC421	A
DF60, DF70	Note 1	✓	✓	✓	ADC300 + ADC420 or ADC421	A
DF70A, 80A, 90A, 100	Note 1	✓	✓	✓	ADC300 + ADC420 or ADC421	A
DF90	Note 1	✓	✓	✓	ADC300 + ADC420 or ADC421	A
DF140	Note 1	✓	✓	✓	ADC300 + ADC420 or ADC421	A
DF150, DF175	Note 1	✓	✓	✓	ADC300 + ADC420 or ADC421	A
DF200, 225, 250	Note 1	✓	✓	✓	ADC300 + ADC420 or ADC421	A
DF300	Note 1	✓	✓	✓	ADC300 + ADC420 or ADC421	A

Note 1: All engines up to 2010. 40HP and above fitted with either a 4 pin or 8 pin diagnostic connector.

6 SUZUKI-B

FAULT CODES

Suzuki

EXHAUST MANIFOLD TEMP STBD
EXHAUST MANIFOLD TEMP PORT
INJECTOR
THROTTLE POSITION SENSOR
SHIFT SENSOR
CMP SENSOR VVT STBD
CMP SENSOR VVT PORT
VVT ADVANCED STBD
MANIFOLD PRESSURE 1
IDLE SPEED VALVE
ENGINE TEMPERATURE SENSOR
INTAKE AIR TEMP
CKP SENSOR
CMP SENSOR
INTAKE PRESSURE SENSOR
MANIFOLD PRESSURE 2
VVT ADVANCED PORT
NEUTRAL SWITCH
CHECK CODE WIRE
OCV VVT STBD
OCV VVT PORT
RECTIFIER REGULATOR

COMPLETE KITS	PART NO.
Mercury/Mercruiser®/MEFI®, BRP®, Yamaha®, Suzuki® Diagnostic System	18-SD102
Mercury/Mercruiser®/MEFI®, BRP®, Yamaha® Diagnostic System	18-SD103
Mercury/Mercruiser®/MEFI®, BRP®, Suzuki® Diagnostic System	18-SD104
Mercury/Mercruiser®/MEFI®, Yamaha® Diagnostic System	18-SD105
Mercury/Mercruiser®/MEFI® Diagnostic System	18-SD106
BRP® Diagnostic System	18-SD107
Yamaha® Diagnostic System	18-SD108
Suzuki® Diagnostic System	18-SD109
SeaDoo®/Yamaha®/Kawasaki® Diagnostic System	18-SD110
Mercury/Mercruiser®/MEFI®, BRP®, Yamaha®, Suzuki®, Yamaha® PWC, Kawasaki® PWC, SeaDoo®, Hydrospace®/Benelli®/Weber®, Volvo® D3 D4 D6, Yanmar® Diagnostic System Plus	18-SD202
SOFTWARE ADD ON KITS	
Mercury/Mercruiser®/MEFI® Engine Add On Software Kit	18-SD111
BRP® Engine Add On Software Kit	18-SD112
Yamaha® Outboard Engine Add On Software Kit	18-SD113
Suzuki® Engine Add On Software Kit	18-SD114
Yamaha® PWC Engine Add On Software Kit	18-SD115
Kawasaki® Engine Add On Software Kit	18-SD116
Sea Doo® Engine Add On Software Kit	18-SD117
Hydrospace®/Benelli®/Weber® Add On Software Kit	18-SD405
Volvo® D3 D4 D6 Add On Software Kit	18-SD406
Yanmar® Add On Software Kit	18-SD407
REPLACEMENT PRODUCTS	
CARRYING CASES	
STATS Carry Case	18-ADA501
STATS Tester Neoprene Case	18-ADA502
STATS Dongle Case	18-ADA503
STATS Yamaha® Neoprene Carry Case	18-ADA504
STATS Mercury/Mercruiser®/MEFI® Carry Case	18-ADA505
STATS BRP®/Seadoo® Neoprene Carry Case	18-ADA506
STATS Kawasaki® Neoprene Carry Case	18-ADA507
STATS Suzuki® Neoprene Carry Case	18-ADA508
DONGLES	
Dongle A Universal	18-ADC400
Dongle B Seadoo® 4 Tech Engines	18-ADC401
Dongle C Seadoo® DI Engines	18-ADC409
Dongle D BRP® DESS (2 Stroke)	18-ADC412
CABLES	
Power Cable (AC)	18-ADC152
Power Cable (12V)	18-ADC450
USB Cable	18-ADC153
Master Cable	18-ADC300
BRP® Safety Key Programming Cable	18-ADC402
Yamaha® Diagnostic Cable	18-ADC403
BRP® Diagnostics Cable	18-ADC404
Kawasaki® T-In Power Cable	18-ADC406
Mercury® Diagnostic Cable	18-ADC407
BRP® T-In Power Cable	18-ADC408
Mercury® Outboard Cable	18-ADC410
Kawasaki® Power Cable (4-Stroke)	18-ADC414
Kawasaki® Ficht DI Cable	18-ADC416
Yamaha® Remote Programming Cable	18-ADC418
Kawasaki® Key Programming Cable	18-ADC419
Suzuki® 4 Pin Diagnostic Cable	18-ADC420
Suzuki® 8 Pin Diagnostic Cable	18-ADC421
BRP® DESS Diagnostic Cable	18-ADC422
Johnson Evinrude® Diagnostic Cable	18-ADC423
Mercruiser®/MEFI® Diagnostic Cable	18-ADC424
CONSOLE	
STATS Tester (Console)	18-ADA500

The OnBoard Rewards Program is an internet based listing of dealers that install, stock and service SeaStar Solutions products. We want to recognize dealers for the work they do on behalf of our brand. Our goal is to make it fun, easy - and rewarding - for a dealer to build a good relationship with SeaStar Solutions and with our products.

Sign up today, go to: www.seastarsolutions.com

STATS Complete Kit

18-SD102 COMPLETE KIT INCLUDES:

- Hand Held STATS Console
- STATS Console Neoprene Case
- STATS Dongle Case
- Software for Mercury/Mercruiser®, Yamaha®, Suzuki®, BRP® and MEFI® 1,2,3,& 4
- Diagnostic Cables for Mercury/Mercruiser®, Yamaha®, Suzuki®, BRP® and MEFI® 1,2,3,& 4
- Power Supply Cable
- USB and Master Cable
- Dongle A (universal)
- Neoprene Branded Cables/Console Cases
- Branded STATS Carrying Case
- Printed Instruction Manual (also available electronically)

www.sierrastats.com

Sierra
Marine Engine and Drive Parts

Document: NA - STATS - 2013
Printed in the USA.