

## SEL<sup>1</sup>00.



**SEA-DOO CERTIFICATION** 

#### TRAINING

- 3 days training
  - 8 hours per day: 24 hours
- Max. 5 students
- Welcome: 30 min
- Wiring diagram presentation: 1h first day
- Factory visit: 1h second day
- What's new presentation: 1h third day (It can be skipped if running out of time)
- Stations total time 20:30

### **STATIONS**

- **2 RUNNING UNITS** 
  - Running 1503 (Wake) 4h
  - Running 903 (Spark) 4:30h
- **4 MECANICAL STATIONS** 
  - Static engines 3:30
  - Supercharger: 1:00h
  - Propulsion (GTI 2007) 1:30h
  - Parts (optional) 1:00h
- **3 ELECTRICAL STATIONS** 
  - Electrical Board: 2:30h
  - Sensors Board: 3:00h
  - Wiring diagram exercise: 0:30h
- PDI (Home work)



### **TOOLS Missing**

- Extra back probes: 4 sets
  - To modify the big ones.
- Fuses: 3 amps and 10 amps
- Jet pump pressure cap for plastic jet pump
- Dielectric grease x 2
- All the other tools are on the classroom boxes, tool trolley and the big ones are on the Sea-Doo pallet on the shelf.





**Presentation Title** Date: Month XX, 2014







- The unit is modified with a dry exhaust
- EGTS is inside the hull -Room temp reading on BUDS

**Presentation Title** Date: Month XX, 2014





- Oil pressure gauges already installedOil pressure sensor removed
  - -Fault code on BUDS
- -Same pressure on both gauges
  - 2005 and prior had different pressure



Presentation Title Date: Month XX, 2014





Internal radiator for coolingFan cooler activated by the fuel pump





-Switchable faults -Fuel gauge installed -Wiring diagram on the wall

-Charge battery every night -Charge Notebooks every night -MPI inside the Notebooks box



-LED is used for injector output test -It has a 500 ohm resistor inline to convert 12V to 2V

-The switch #8 has a resistor in parallel to create extra resistance on the CTS. No fault code but wrong reading on the monitoring page.



#### **STATION 7** Running 1503 Tools





### STATION 11 STATIC ENGINES

- Timing procedures on both engines
- I eak down test
  - 1503: Leaking to crankcase and to cooling system
  - 903: Leak on the exhaust and intake valves.
- Better to try another leak down kit. It seams to reduce the pressure too much.
- Broken bolt on the camshaft holders: 420440324
- Air supply will be installed on the corner for better access. (Johannes)
- The tool trolley is used only for this station + the special tools.







#### STATION 11 STATIC ENGINES **Tools**





### **STATION 17 PARTS INSPECTION**





### STATION 17 PARTS INSPECTION Tools





### **STATION 24 WIRING DIAGRAM EXERCISE**





#### **BOARDS**





#### **STATION 26 ELECTRICAL BOARD**





#### ELECTRICAL BOARD STATION 26

- It needs a battery
- The battery should be checked from time to time
  - It can affect some readings
- All fuses are 10 AMPS except the one for overload (3 AMPS)
- The test light should be the 12v only not the 6-24v used for other stations.
- Spare bulbs and switches on the classroom shelf.
- The bulbs are welded under the board. Sooner or later will need maintenance.
- Circuit breaker already installed on the fuse box.
- Ground failure and shortcuts are produced by switches 13 to 17 when switched to the right.
- Since the ground wires for shortcuts run under the board there is a small amperage reading with the inductive amp meter everywhere while chasing the shortcut but the difference is obvious.



#### **STATION 26 ELECTRICAL BOARD**











# STATION 26 ELECTRICAL BOARD Shortcuts:









#### STATION 26 ELECTRICAL BOARD





#### STATION 26 ELECTRICAL BOARD Tools





#### STATION 30 SENSORS BOARD





### STATION 30 SENSORS BOARD

- There is PWM to convert 12v to 5volts. It will be good to buy another one.
- It is adjusted by turning the knob slowly. The voltage should be measured between the 5V line and the ground line (right one)
- There is a magnet to activate DESS post without the key.
- OTAS: There is a 7300 ohms resistor between ECU and +12volts terminal
- TOPS : There is a 2200 ohms resistor between ECM and +5volts terminal
- The test light is shared with the station 26. Don't mix it with the 6 to 24 volts test lights.
- The diode on this station has no resistor. Don't mix with the others.
- The valve TOPS is only for understanding.
- Don't spin the flywheel too fast.
- Use dielectric grease to avoid damages on the wire seals when back-probing



### STATION 30 SENSORS BOARD PWM





#### STATION 30 **SENSORS BOARD**

Knock sensor mounted on a piece of metal. Hit the metal to create vibrations Don't hit the sensor nor the bolt.



#### Pressure sensors with hoses already fitted





#### STATION 30 SENSORS BOARD Tools





#### **STATION 29 SUPERCHARGER**





#### **SUPERCHARGER** STATION 29

- The station will be moved close to the hydraulic press (Johannes)
- He will install a vise on the bench close to the press.
- Needle bearings have to be recovered after the training
- The big torque wrench is shared with the Parts Station
- Follow the shop manual instructions and highlight the use of the heater gun.
- Instructions sheets on the kit doesn't mention that.



#### STATION 29 SUPERCHARGER Tools





#### **STATION 31 PROPULSION**





#### STATION 31 PROPULSION

- The engine is misaligned so the alignment shaft will touch the PTO adapter at +/-11:00
- The jet pump cap tool for the pressure test fits but it is only possible to install one bolt. This unit has a plastic pump and the tool is probably for the aluminum one.
- The shop manual only shows one part number for this tool. ????
- To tight he alignment plate to the hull you need some supplements since the threaded studs are quite long. I used 4 M12 nuts. Any other thing can be used (sockets, pipes)
- It is quite possible the c-clip falls under the engine during removal. That's why I added the magnet on the tool list.
- The two plastic boxes are used for the removed parts.
- I recommend to perform the jet pump pressure test with the jet pump still on the unit with the minimum parts removed since is something that rental operators can do preventively.
- After checking the anode continuity you can ask them to check the one on the GTX LTD iS ride plate. That one looks good but has no continuity.



#### STATION 31 PROPULSION Tools





#### STATION 31 PROPULSION Tools









#### STATION 40 **Running 903**



-Internal radiator for cooling -Fan cooler activated by the fuel pump - The charging amperage will be higher than the specifications on the shop manual due to the fan cooler amperage consumption.

- If the battery is low it will affect also the charging current reading.



#### STATION 40 Running 903

Dry exhaust:







#### STATION 40 **Running 903**

Switchable faults:

The switch #8 doesn't work. It doesn't stop the unit consistently. Task removed



-Wiring diagram on the wall -Charge battery every night -Charge Notebooks every night -MPI inside the Notebooks box



### STATION 40 Running 903 Tools





Ski-Doo<sup>°</sup> Lynx<sup>°</sup> Sea-Doo<sup>°</sup> Evinrude<sup>°</sup> Rotax<sup>°</sup>

Can-Am°



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