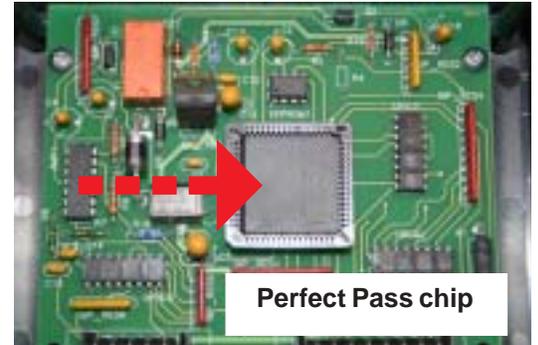


MASTERCRAFT TECHNICAL TECHNIQUES

Project:	Throttle-by-wire installation
Model Year(s):	2005
Model(s):	All models, including 190 and 197 Tournament Teams
Tools Needed:	Electrical pliers, heater or blow dryer, small Phillips screwdriver, computer chip removal tool; IC extraction tool (available at Radio Shack, part #276-2101)
Parts Needed:	Shift position wire, jumper harness, MasterCraft DBW engine harness; MasterCraft DBW display harness



DETERMINATION: THROTTLE OVERRIDE TEST PROCEDURE

Step 1: Power up the Perfect system while pressing and holding the MENU and the DOWN key on the Perfect Pass gauge. The engine does not need to be started. The screen will show [**SERVO TEST^=Yes**]. Release the MENU and DOWN keys.

Step 2: Press the UP key. The screen will show [**Throttle 160**]. (The displayed value may not be exactly 160, but it should be somewhere between 120 and 250.)

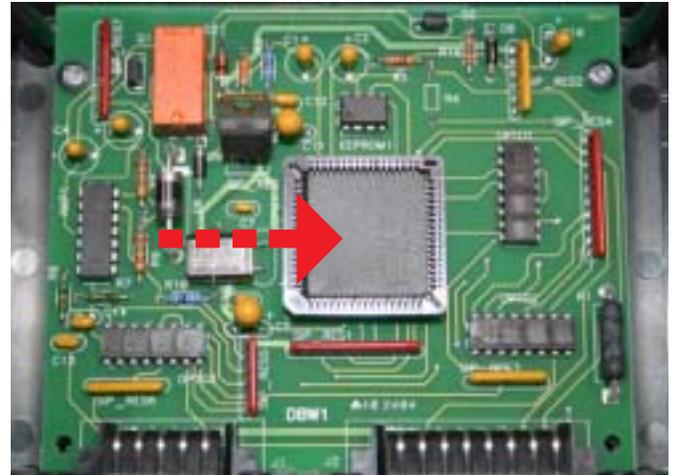
If the installation was complete and correct, the reading will be between 120 and 250 when the system is in neutral; 850 to 950 when the shift lever is moved to the wide-open-throttle. No adjustment is needed within these ranges. The remainder of this Technique should be ignored under these circumstances.

If the installation has featured an incorrect version of the software, the throttle screen above will not appear following the above key sequence. The software must be updated before any further tests are conducted. See Step 3.

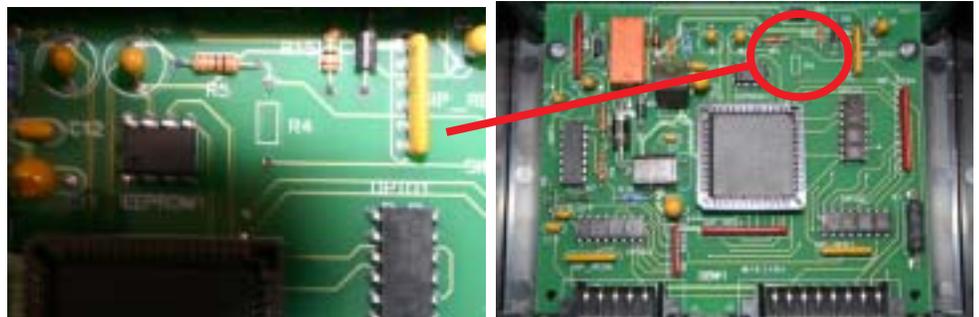
Step 3: Begin by opening the Perfect Pass DBW module.



Step 4: Using the IC extraction tool, CAREFULLY eject the computer chip and replace with the supplied replacement chip.



Step 5: While the module is open, using a very small wire cutter, cut the R4 resistor free of the circuit board. (The resistor is located beside the CPU and EEPROM chips and is clearly marked with R4 to the right.)



Step 6: Re-mount the Module cover.

NOTE: If these steps were necessary, it is likely that you will also need to perform the harness replacement, but before beginning those steps, check the MENU process once again. (Repeat Steps 1 & 2)

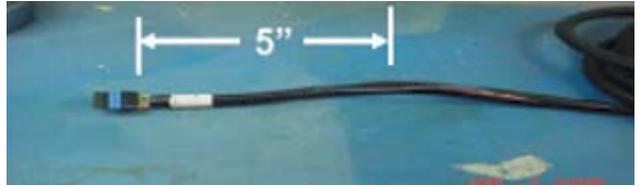
If the throttle wire is not present but the R-4 resistor is present, the displayed value will be between 1000 and 1023. This means the throttle potentiometer is not connected and resistor R-4 has not been removed. That is why you were instructed to remove the R-4 in Step 3. **If the R4 is still present in the DBW module**, the displayed value will be above 250 and does not change by more than 500 units when the shift lever is moved from idle to the wide-open-throttle position.

If the throttle wire is not present but the R-4 has been removed, the displayed value will be less than 100 and will not change when the shift lever is moved to 50 percent or more. The following steps will be necessary to correct this situation:

Step 7: Locate and disconnect the tach module harness from the throttle box.



Step 8: Access the black-with-white stripe wire in the harness. Splice the wire approximately five inches (5") from the rear of the plug connector.



Step 9: Connect the shift position wire to the spliced black-with-white stripe wire.



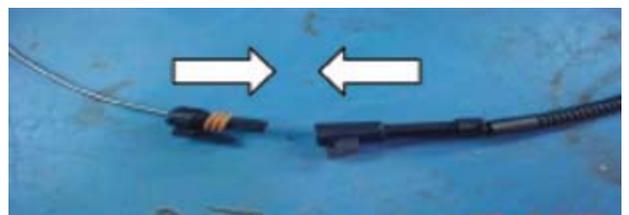
Step 10: Heat the shrinkable connectors to ensure a good seal between the connections.



Step 11: Plug the harness back into the throttle control.



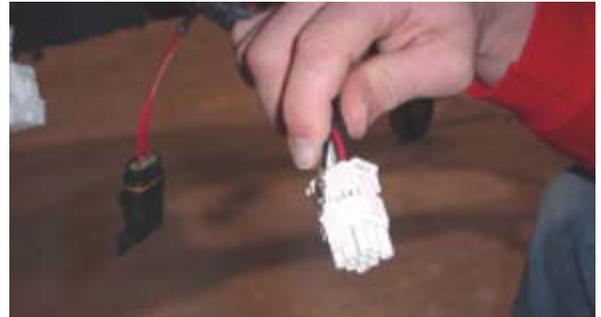
Step 12: Connect the jumper harness into the shift position wire harness.



Step 13: Route the jumper harness up the deck to beneath the dash. Locate the Perfect Pass 9-pin connector under the dash and unplug the connector.



Step 14: Unsnap the 9-pin connector.



Step 15: Note the plug matrix to the right. Connect the end of the jumper harness (black wire) into the number eight (*) position 9-pin connector.

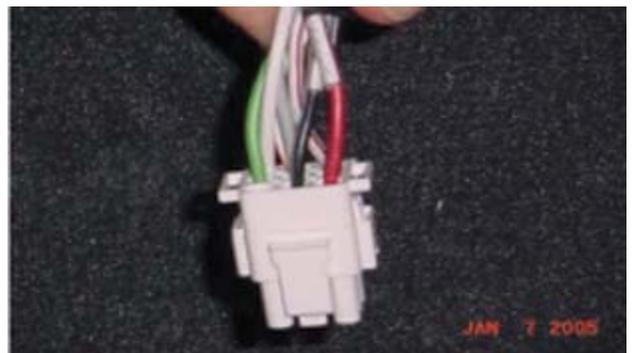


Step 16: Replace the engine-side 9-pin connector from the Perfect Pass master module with the provided engine connector harness.

Step 17: Snap the 9-pin connectors together.

Step 18: Replace the display side harness of the master module with the provided display side harness.

SPECIAL NOTE: Be sure to re-connect both Smart Timers switch wire and ten-pin display connection back in place.



Step 19: Connect the throttle wire from the engine connector to the display side connector.

Step 20: Plug the connector back to the Perfect Pass plug under the dash.

If any other situation arises, contact your MasterCraft technical representative for assistance in determining the issue and correct fix.