



6201 Industrial Way * Marine City, MI 48039 * Phone 810-765-5100 * Fax 810-765-1503

HOWELL ENGINE DEVELOPMENTS
SUPPLEMENTARY INSTALLATION AND PARTS LIST FOR
UNIVERSAL DESIGN HARNESS WITHOUT MAF SENSOR
OR STREET ROD DESIGN

The following list of components are typical of what is required to complete the installation of our TPI wiring harness using a TPI from model year 1985-1990 GM vehicles, operating with no MAF sensor:

ECM (Computer) PN 1227730, (Paper label on ECM).
Mem-Cal for 350 PN 16134306, (1990 Model year).
Mem-Cal for 305 PN 16145671, (1990 Model year).
Manifold Absolute Pressure (MAP) sensor, PN 16137039.
Fuel Pump relay, PN 14089936.
Oxygen Sensor, PN 8990741 or 25105901.
Knock (Detonation) sensor, PN 10456031.

(Mts in RH block drain or in block above oil filter pad.)

NOTE: New Part for 1990, not interchangeable.

NOTE: GM eliminated the cold start injector in 1989, so you may have a TPI with or without cold start injector. All 1990 Mem-cals include cold-start enrichment in their calibration, so there is nothing to connect to a cold-start injector.

Most or all of the above may have been salvaged from the vehicle your TPI is from. If not, they are standard Chevy parts, available from any GM dealer. We also stock ECM's, Mem-cals and used MAF sensors.

In addition to the above, the following parts are mounted on your TPI manifold. In case you need replacements, the part numbers are also listed:

MAP Sensor, 1990 engines may have PN 16137039 mounted to intake plenum.
Coolant Temp Sensor, PN 25036979 (lower front of manifold).
Cold Start thermo-time switch: Not used in 1990 electronic system.
Throttle Position Sensor, PN 17111606 (right end of throttle shaft).
Idle Air Control Motor, PN 17111288 (lower right of throttle body).
Manifold Air Temp Sensor, PN 25036979 (under side of plenum).
MAT sensor jumper, from sensor to harness, PN 12029463.
Distributor:

(coil in cap design) PN 10497134.

(remote coil design) PN 1103749, Coil PN 1985473,

Connector wire PN 12073286.



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Recommended fuses: Battery Power-20 Amp, Fuel Pump-15 Amp, Sw 12V-10Amp.

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