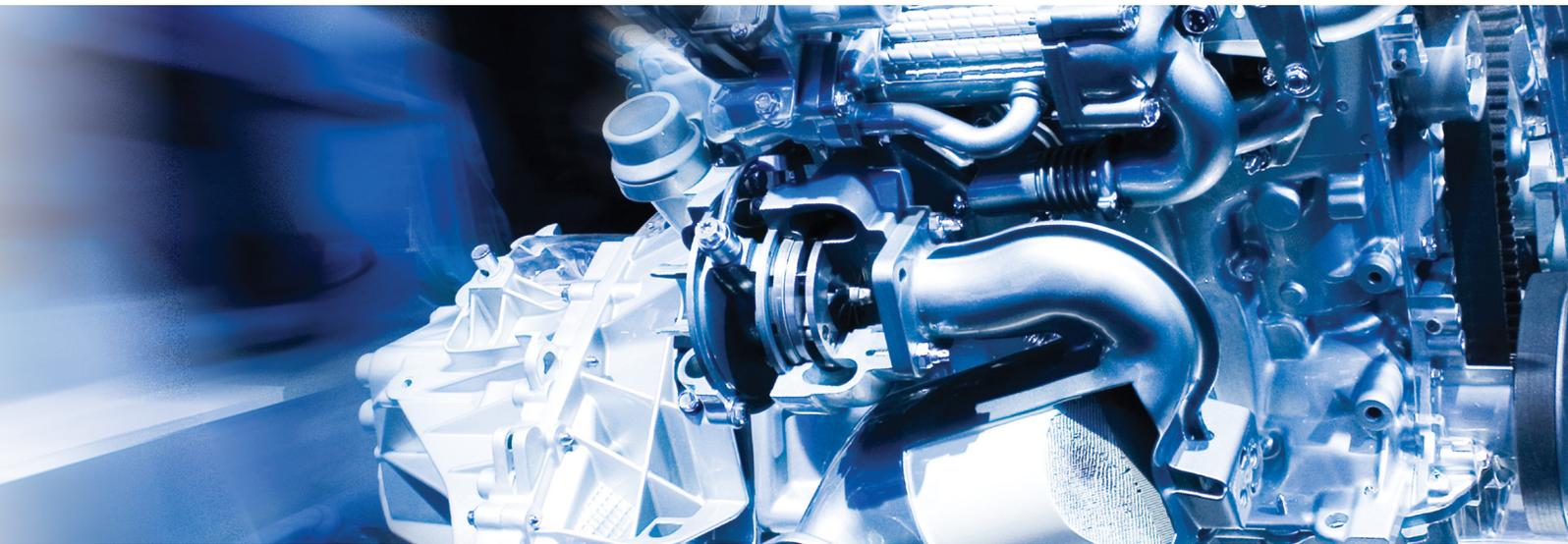




**ECHLIN®**

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# THE POWER OF CHOICE



**WITH MORE THAN 40,000 PRODUCTS, NAPA® ECHLIN® IS THE PREMIER PROFESSIONAL ENGINE MANAGEMENT BRAND IN THE AUTOMOTIVE AFTERMARKET TODAY.**

[NAPAECHLIN.COM](http://NAPAECHLIN.COM)



**ECHLIN**®

## RELAYS



- Premium-quality composite housings protect against harsh temperatures and severe under-hood conditions
- Brass or copper contacts, wherever specified, extend service life
- Premium epoxy keeps relay intact to protect against dust, heat, and moisture
- Undergoes extensive testing to ensure proper fit, form, and function
- Manufactured to strict quality standards at our TS16949- and ISO9001-certified facility



- Durable materials withstand wear and tear to extend service life
- Engineered using quality components to ensure proper operation

## COOLANT TEMP SENSORS



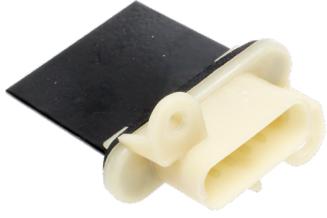
- Glass fiber-reinforced plastic polymer connector ensures excellent dimensional stability and proper mating connector fit across temperature extremes
- Precision-machined brass housing maximizes thermal conductivity between sensor body and coolant
- Tapered pipe threads with pre-applied sealant ensure tight, leak-free fit
- Designed to specify tight tolerance thermistor response values, which ensures accurate temperature measurement and proper part operation



- Designed to match the proper fit, form, and function of the original
- Manufactured to meet necessary specifications



## BLOWER MOTOR RESISTORS



- Glass fiber-reinforced plastic polymer connector ensures proper dimensional stability and fit, even under extreme temperatures
- Aluminum circuit board resists vibration and shock for increased durability
- Platinum silver conductor ink ensures superior electrical performance
- Epoxy powder coating protects circuit from environmental conditions
- Includes pre-installed seal for ease of installation
- Undergoes 100% factory testing for proper resistance value at each terminal set



- High-quality materials withstand harsh conditions
- Undergoes testing to ensure performance
- Includes seal to prevent leaks

## CRANKSHAFT SENSORS



- High-strength neodymium magnets ensure proper signal voltage to the ECM
- Matching connectors and tin-plated brass terminals ensure accurate, watertight connection to harness
- Protective sleeve prevents wires from chafing and creating short circuits
- Factory-installed grommets and wire clips ensure proper mounting during installation
- Integrated A/D converter and digital signal processing with dynamically adaptive switch point improves accuracy and operation



- OE-style connectors ensure proper performance
- Designed using quality components, which results in precise performance

## CAMSHAFT SENSORS



- Integrated A/D converter and digital signal processing with dynamically adaptive switch point improves accuracy and operation
- Advanced circuitry protects system from stray electromagnetic fields and power spikes
- Custom magnetic circuit programming calibrates sensor during performance testing for improved timing accuracy between target wheel and sensor output
- Undergoes 100% environmental, endurance, and end-of-line testing for timing, pulse width, and signal amplitude to ensure consistent product reliability



- High-impact housing and ferrite magnets optimize performance
- Quality components ensure reliability out of the box

## IGNITION COILS



- Primary (25 gauge) and Secondary (43 gauge) copper wire ensure peak performance while reinforced bobbins prevent voltage flashover for extended service life
- Advanced thermoplastic coil connector ensures proper connection and resists fractures caused by heat and thermal cycling
- High-temp boot prevents high-voltage leaks, while stainless steel spring with internal ferrite noise suppressor prevents radio frequency interference (RFI)
- Internal, neodymium permanent magnet core surrounded by magnetic-laminated steel maximizes high-voltage output at all speeds



- Direct-fit OE replacement for ease of installation and dependable performance
- Copper windings create strong magnetic field for consistent performance

## HEI COILS



- Pure copper windings in both bobbins improve durability and provide higher resistance to internal shorts and dielectric breakdown
- Full E-Lam core of silicon steel ensure maximum output voltage
- Solid brass high voltage terminals for better connections and greater corrosion resistance



- Steel or aluminum coil terminals, as indicated by OE
- High efficiency laminations to optimize magnetic field build-up and produce high spark energy

## FUEL INJECTORS



- OE-match design ensures proper fuel metering for superior performance and fuel flow
- Valve seats machined to a one-micron finish for leak-proof seal
- Precision wound and trimmed solenoid coil windings allow application-specific resistance values
- Tin-plated brass terminals increase corrosion resistance



- Disc-shape technology ensures precise fuel metering
- Contaminant-resistant design prevents clogging for longer life

## FUEL PRESSURE REGULATORS



- Precision-engineered pressure regulators lead to superior fuel delivery and engine performance
- Steel housing withstands harsh conditions for enhanced durability and longevity
- Application-specific to ensure the proper fit and form for a trouble-free installation
- Product of robust engineering design process, which results in greater resistance to leakage



- High-quality materials ensure durability
- Includes mounting bracket for ease of installation

## MAP SENSORS



- Advanced thermoplastic housing provides greater resistance to cracks and leaks, resulting in superior durability and longevity
- State-of-the-art transducer technology optimizes accuracy of pressure sensing
- Premium resistors (with voltage resistance of up to 5 volts) ensure superior performance and peak engine operation
- OE-quality connector and terminals ensure exact-fit connection, which restores peak conductivity to the engine wiring harness for precise engine performance
- High-quality Viton® rubber seal prevents contamination



- Thermoplastic polyester housings to protect delicate internal electronic circuits, for lasting reliability
- High tech printed circuitry for OE-like performance



We're in business to serve our customers, but customers are not all the same. Some want only the best product, while others always want a lower price. NAPA® Echlin® supplies both with the NAPA® Echlin® and NAPA® Proformer lines of engine management parts. The end result is that NAPA® Echlin® provides the best “value” for each level. This guide will help you understand the differences between these two lines.

#### The NAPA® Echlin® Product Line

- Top-of-the-line quality and performance
- Complete coverage
- State-of-the-art designs that meet or exceed OE specifications
- All products are 100% tested and inspected in an ISO 9001-certified facility



#### The NAPA® Proformer Product Line

- Value priced, competitive with retail auto parts chains
- The most popular SKUs
- Match OE quality and performance

## EGR VALVES



- Injection-molded, high-temperature polymer prevents temperature-related failures
- Palladium/gold/platinum alloy wiper contact with Teflon-based lubricant ensures very low contact resistance
- Stainless steel internal components and fully encapsulated copper windings and connections ensure precision operation and greater protection
- Improved anti-rust coating on machine casting for additional protection against rust for maximum life
- Includes mounting gasket for complete installation



- Quality materials withstand extreme conditions
- Durable internal components for longevity and proper operation

## OIL PRESSURE SWITCHES & SENDERS



- Thick, film-printed circuits calibrated using laser etching system, which ensures highly accurate reading of actual oil pressure in vehicle's engine
- High-temperature, polyimide film diaphragms provide exceptional cycle durability and resist rupture and oil leakage
- Designed to withstand rapid pressure pulsations without component damage
- Undergoes 100% testing to validate performance, check for leaks, and stress the part to ensure compliance



- Designed to meet the stringent demands of today's service professionals
- Matches OE fit, form, and function to optimize performance

## DIS MODULES



- Premium metallic-finish cover plate protects module from harsh operating conditions
- Copper slug heat sinks provide better heat dissipation to prevent heat from damaging the module
- Double-wire bonds ensure superior connection, even when subjected to intense vibration and extreme operating conditions
- Undergoes extensive durability testing for 500 thermal cycles ranging from -40C to +125C



- High-quality back plate provides heat dissipation
- Single-wire bonds secure electrical connections

## THROTTLE POSITION SENSORS



- Sliding contact technology with multiple precious metal contacts riding on polymer thick-film resistors leads to superior durability and extended longevity
- Integral rotor bearings and return springs allow for easier installation than springless designs
- Designed to maintain specific installed outputs to match the OE rather than using adjustable, consolidated designs
- Undergoes rigorous end-of-line testing to validate output voltages and meet linearity specifications

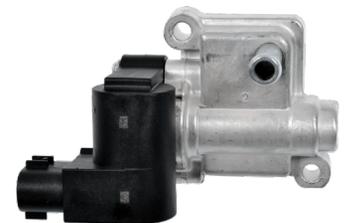


- Direct-fit part ensures of installation
- High-quality materials and components ensure durability

## IDLE AIR CONTROL (IAC) VALVES



- Polymer-blended, isotropic neodymium/iron/boron magnet properly controls the pintle and airflow to ensure accurate operation
- High-quality epichlorohydrin material withstands extreme operating temperatures to ensure long service life
- Premium Viton® rubber seal provides close-fit, air-tight seal to prevent contamination
- OE-quality connector and terminals ensure exact-fit connection, which resumes peak conductivity to the engine wiring harness and results in precise engine performance



- Designed to meet OE performance
- Manufactured with quality components to prolong service life