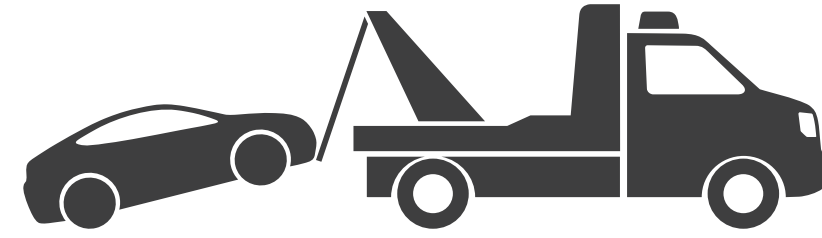


THE OE'S ARE FAR FROM PERFECT

Many original OE designs can have unforeseen weak points that lead to product failure. These OE flaws don't surface until vehicles are on the road.



THE BWD® ADVANTAGE

We have several years to evaluate the original part, identify the OE issues and correct those problems.



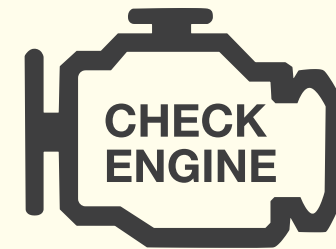
HIGH OE FAILURE RATES MAKE IGNITION COILS A KEY AFTERMARKET CATEGORY



Today's advanced systems can push an ignition coil to the brink of destruction.

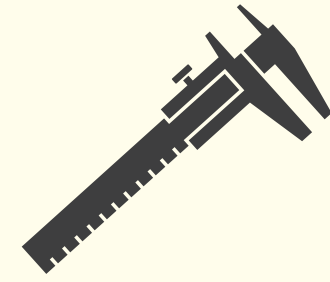
- High resistance overworks a coil
- Coils now operate in a harsher environment
- Ignition coils are mandatory replacement parts

THE WEAK POINTS IN MANY OE COIL DESIGNS LEAD TO PRODUCT FAILURE



OE FLAWS

Our engineers identify the OE flaws



BWD® IMPROVEMENTS

We design the BWD® coil to overcome these flaws

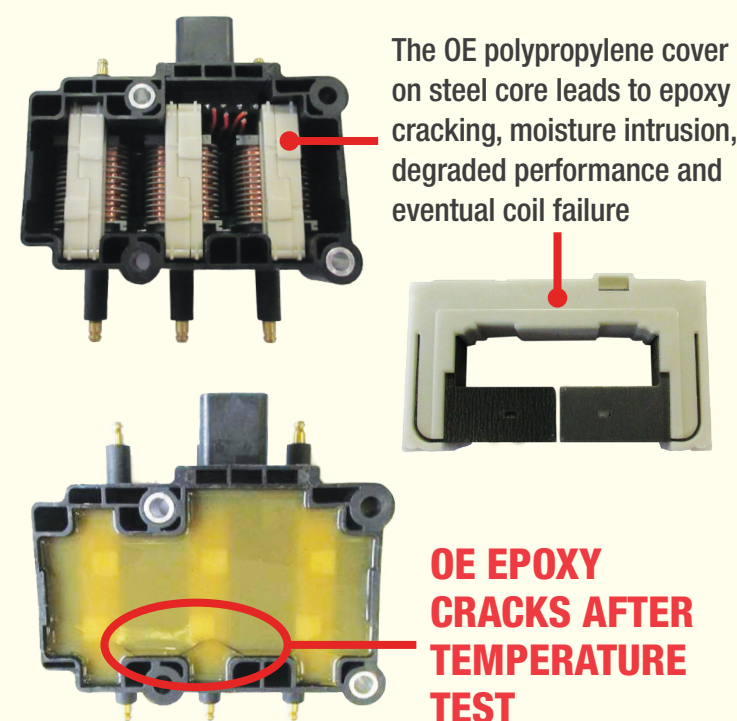


BWD® RELIABILITY

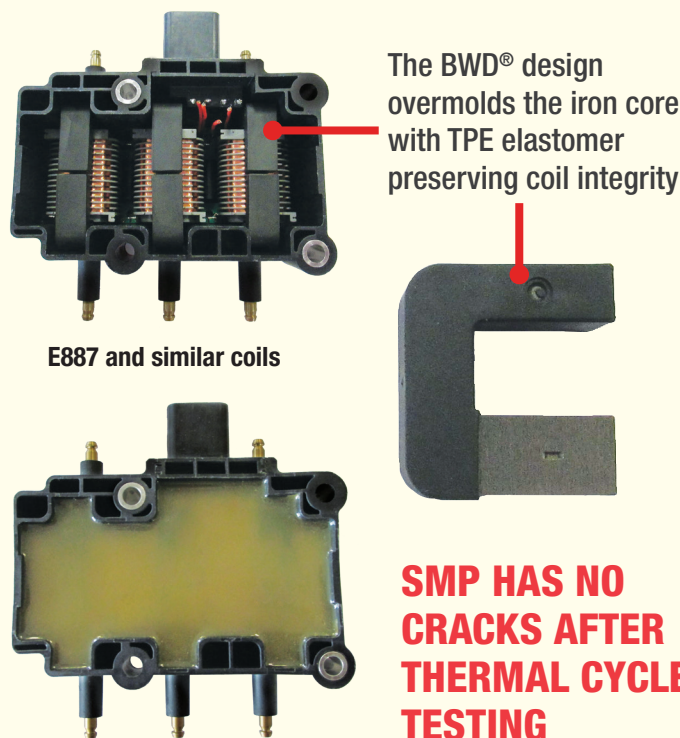
We manufacture a more reliable, better performing ignition coil

OE WEAK POINT: EPOXY CRACKING

OE Design Flaw: Polypropylene Cover



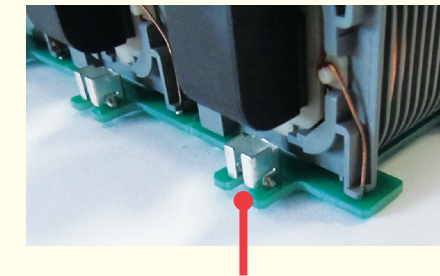
SMP Solution: Elastomer Overmold



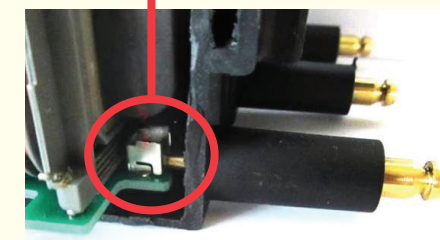
Source: SMP Poland Testing Lab, 2018

OE WEAK POINT: NO HIGH VOLTAGE CONNECTION

OE Design Flaw: Terminal Deforms

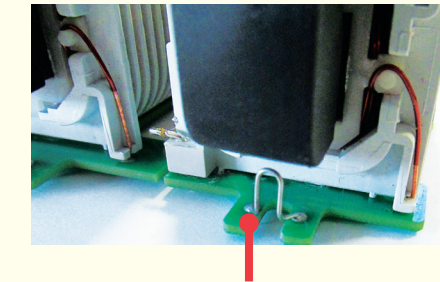


The OE metal terminal deforms while the epoxy cures causing the high voltage connection to fail



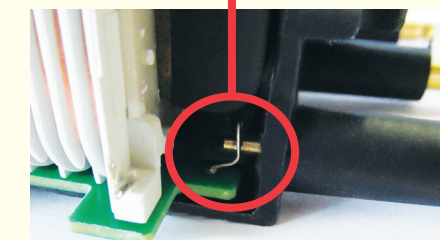
OE TERMINAL DESIGN BREAKS THE HIGH VOLTAGE CONNECTION

SMP Solution: Spring Terminal Design



E887 and similar coils

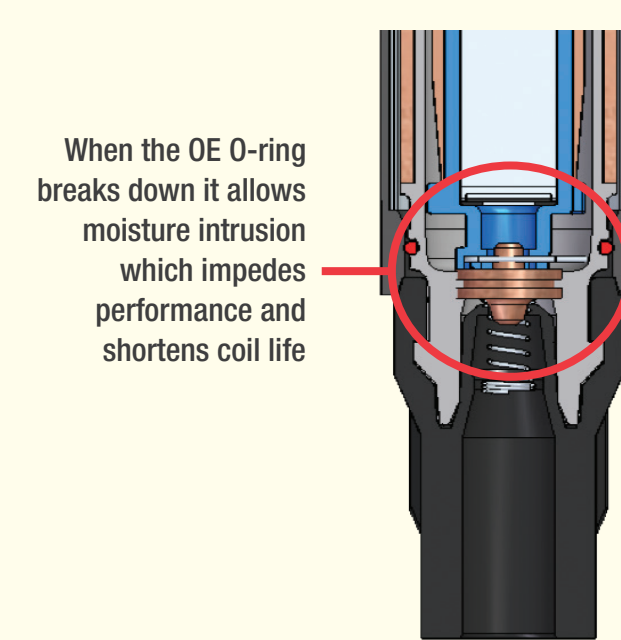
BWD® engineering features a spring terminal design to maintain a solid high voltage connection for top performance and long service life



SMP MAINTAINS A SOLID HIGH VOLTAGE CONNECTION

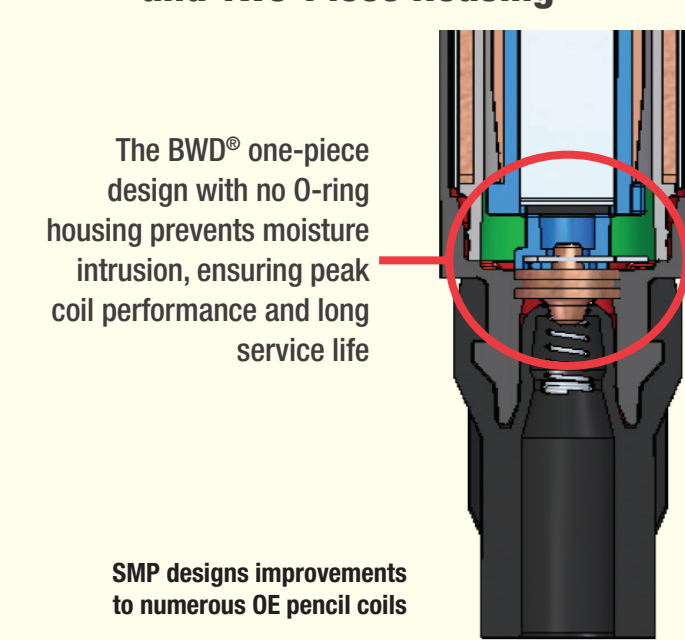
OE WEAK POINT: MOISTURE INTRUSION

OE Design Flaw: O-ring Design



OE COIL HAS MOISTURE INTRUSION

SMP Solution: Eliminate O-ring and Two-Piece Housing

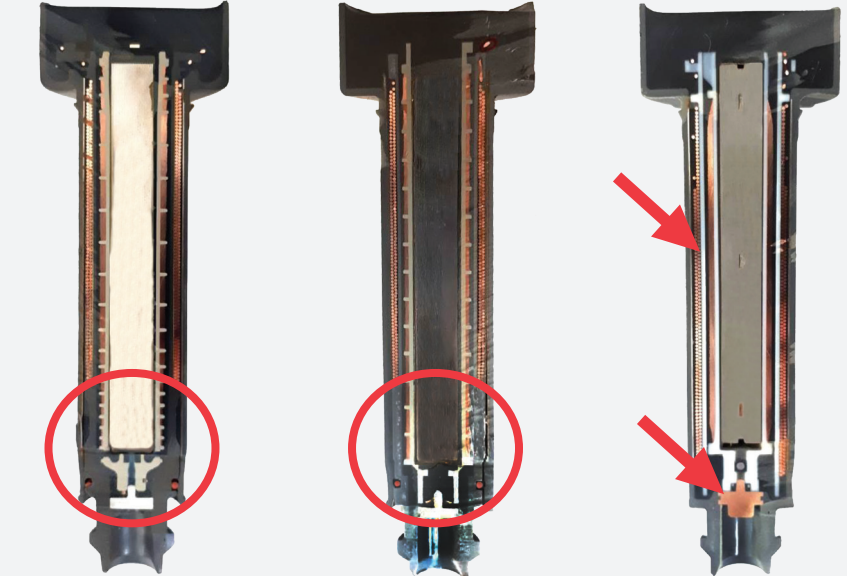


SMP designs improvements to numerous OE pencil coils

SMP DESIGN HAS NO MOISTURE INTRUSION

WHEN OE'S GO OFF-PLATFORM AND SOURCE, THEIR OE AFTERMARKET PARTS LOOK AND PERFORM DIFFERENTLY

OE/DEALER **OE AFTERMARKET** **SMP E1002**



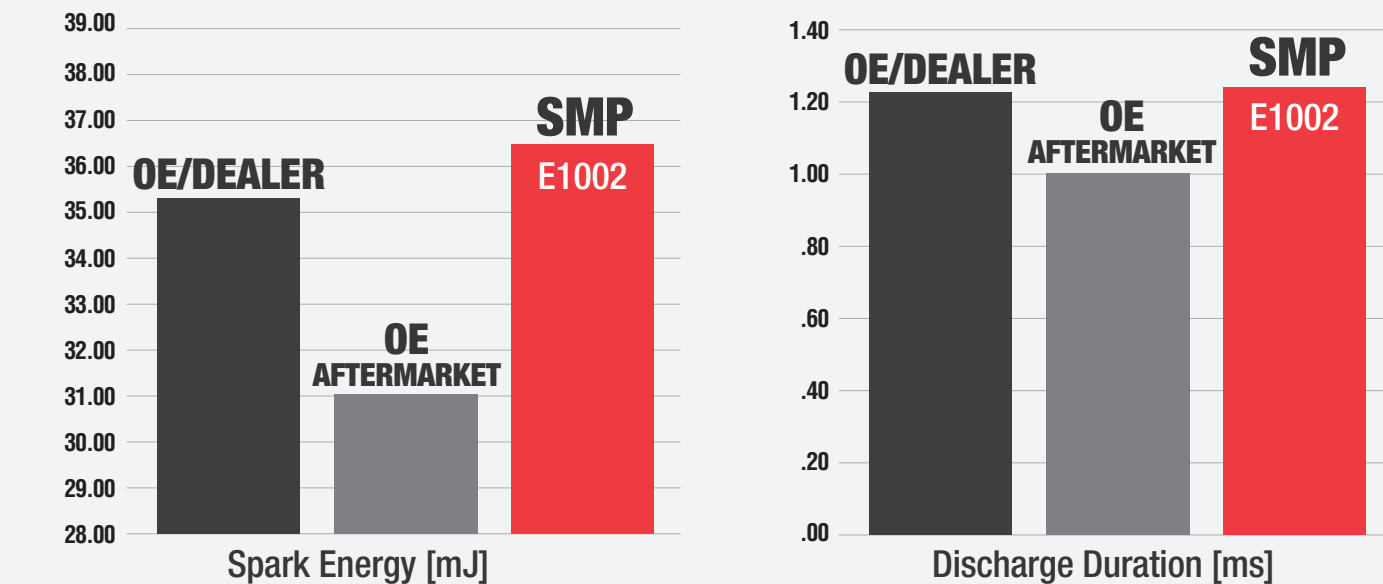
Source: SMP Poland Testing Lab, 2018

Here the OE and OE aftermarket coils don't match – their bobbin segmentation is different.

SMP's design is superior to the OE aftermarket part and we've designed a coil that overcomes the OE flaws. Our non-segmented bobbin eliminates epoxy air pockets while our one-piece overmolded terminal design prevents moisture intrusion for a long lasting, high-performing coil.

THE TEST RESULTS ARE IN

BWD® coils outperform the OE and OE aftermarket coils with more spark energy and longer lasting discharge to deliver improved performance and fuel economy.



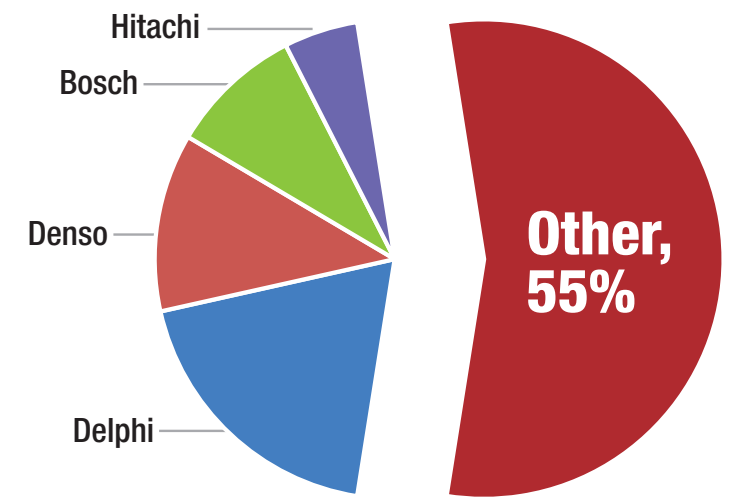
Source: SMP Poland Testing Lab, 2018

WHO'S THE ORIGINAL MANUFACTURER?

We examine every OE platform manufacturer in our categories

More than half of our coil sales are for vehicles produced by OE's that do not offer an aftermarket program including our top 5 selling coils (25% of our coil sales).

Original Vehicle Platforms (% SMP Coil Sales)



Top Selling Coils (25% of SMP Sales)

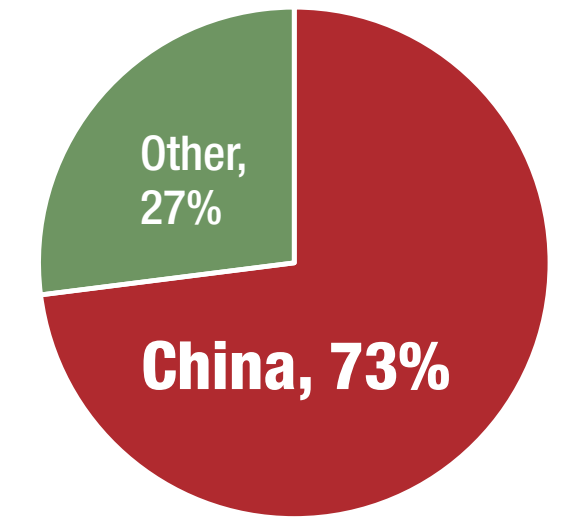
Rank	BWD® Part#	OE Platform Part in the Aftermarket
1	E262	Not Available
2	E508	Not Available
3	E232	Not Available
4	E1148	Not Available
5	E1075	Not Available

OE OFF-PLATFORM SOURCING

Many OE's use non-OE product in their aftermarket programs

Once a part comes off-platform, these OE's source, rather than manufacture – OE's aren't built for "short-run" requirements.

We estimate that one OE is sourcing approximately 73% of its aftermarket coils from China.



Country of Origin

WE BRING THE TOTAL COIL PACKAGE

800+ **99%** **90%**

The BWD® line offers more than 800 ignition coils

99% Aftermarket-Leading Coverage

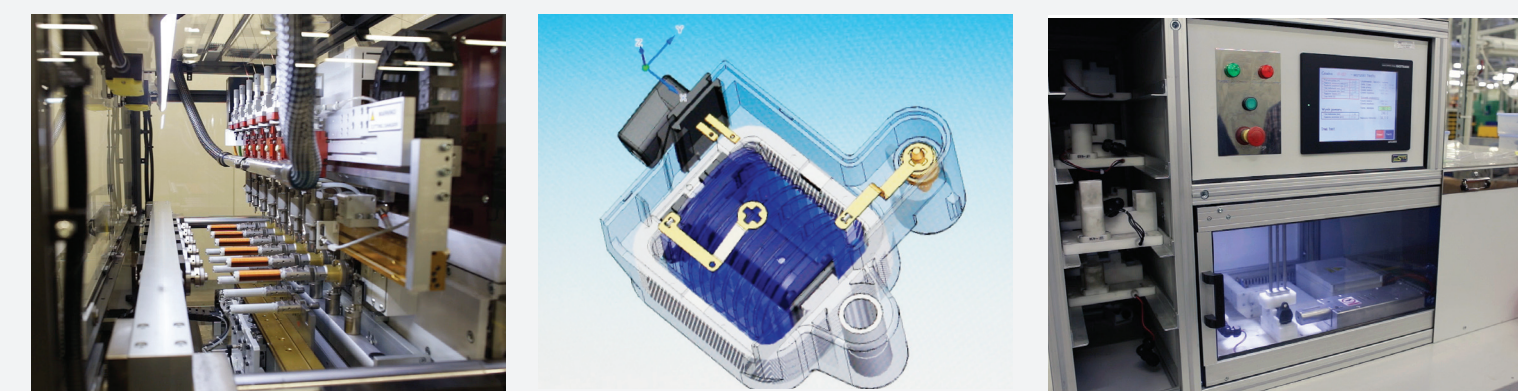
We manufacture 90% of what we sell

SMP POLAND

Our most advanced engineering, design and manufacturing facility

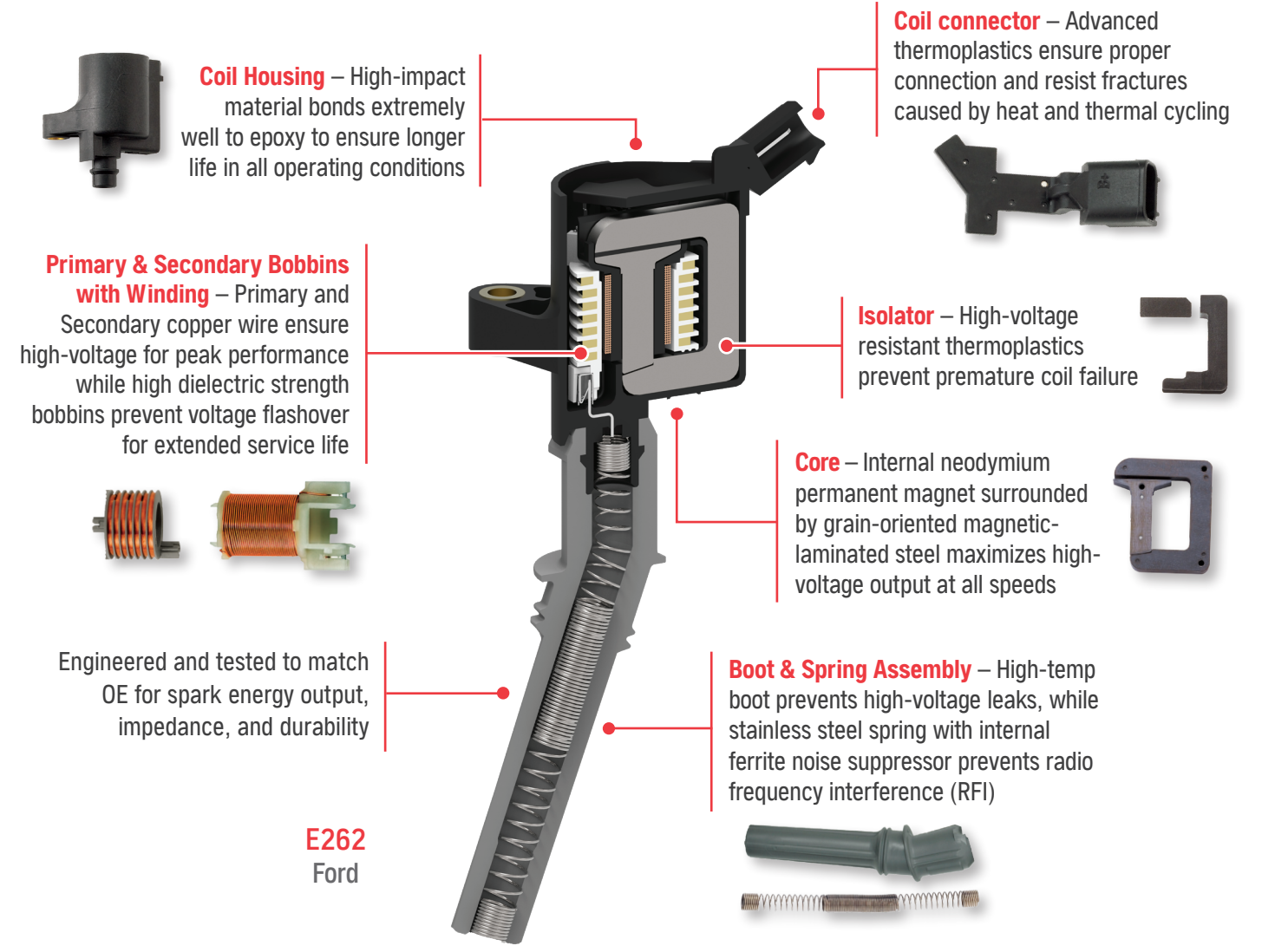
In 2006, SMP acquired an OE ignition coil company in Bialystok, Poland. This plant had been manufacturing coils for the OE since 1979.

- SMP Poland is now 108,000 sq. ft. and IATF 16949-certified
- We manufacture 6 million coils and 2 million sensors each year
- We introduce 110+ new products annually
- More than 750 employees including 60+ resident engineers
- Highest quality coils for optimal performance and maximum durability



WE PAY ATTENTION TO DETAILS

We pay careful attention to the components, engineering, & manufacturing details to consistently deliver a superior BWD® ignition coil. To ensure proper function, BWD® Coil-on-Plug Assemblies feature premium-quality components.



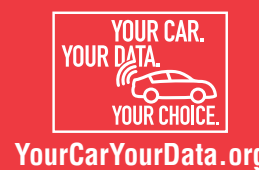
We've got them all and they're engineered to perform



BWD®

IGNITION COILS

For more than 100 years, when the OE failed, you trusted us to deliver a part that's equal to or better than the original



BW11411

