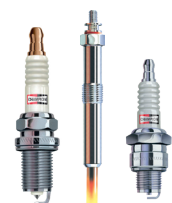




Dedicated to service. Driven by quality.



IGNITION | FILTERS | BRAKES | LIGHTING



TURN IT ON

CHAMPION SPARK PLUGS

PART III - TECHNOLOGIES



Champion® is a registered trademark of Tenneco Inc. or one or more of its subsidiaries in one or more countries. - PRMCM2116-EN

TO GUARANTEE OPTIMUM PERFORMANCE AND DURABILITY, CHAMPION RELIES ON PROVEN TECHNOLOGIES



IF IT HAS AN ENGINE, WE HAVE A PLUG FOR IT

We permanently want to serve you better and support your business. How? By offering you first-class products and a complete range in combination with **all the information you need**. That's why we created **3 brochures** for you:

Part 1. How does a spark plug work?

In the first brochure, we **guide you through the components** that are used in Champion spark plugs and determine the performance and durability of the spark plug. But did you know that the most essential information is already at your fingertips? As you will read in our second brochure.

Part 2. Our part number structure explained

Every Champion spark plug product number holds detailed specifications about its different components (e.g. resistor, shell, seat), the used technology (e.g. Copper) and its features (e.g. Ribbed Core Nose). An overview of all possible combinations is available in our paper and online catalogue. We'll give you a more detailed explanation.

Part 3. The technologies inside Champion spark plugs

Finally, in our last brochure, we **guide you through the technologies** that are used in Champion spark plugs.



Original OE-quality

When you are the world's number one spark plug provider, customers turn to you with all kinds of questions. OEMs push us to come up with new technologies and solutions that fit the needs of their latest ignition developments. As these spark plug technologies innovations are quick to be released into the aftermarket, we ensure and inform distributors and installers at the same speed.

Let's get started: just turn the page to learn more about Champion spark plugs!

CHAMPION TECHNOLOGY INSIDE



IRIDIUM

To guarantee optimum performance and durability, Champion relies on proven technologies. The range consists of different **Copper, Platinum** and **Iridium** based technologies that are adapted to a wide variety of engine specific demands.

**THAT'S HOW CHAMPION
LEADS THE INDUSTRY.**



PLATINUM

COPPER

Champion spark plugs are developed **in close cooperation with OE manufacturers**. This means they have to follow all new evolutions in the industry.

To meet all these demands, Champion engineers come up with new technologies and keep improving the traditional technologies. In this way, Champion supports innovation and helps to **improve engine performance and plug lifetime** while **lowering CO₂ emissions**.

**THAT'S HOW CHAMPION
DRIVES THINGS FORWARD.**

INNOVATIONS FOR
A LONG AND PERFORMANT LIFE



12,000 miles
20,000 km

25,000 miles
40,000 km

38,000 miles
60,000 km

38,000 miles
60,000 km

60,000 miles
100,000 km

75,000 miles
120,000 km

EVOLUTION OF SERVICE LIFE & ENGINE TECHNOLOGY

75,000 MILES / 120,000 KM

SPARK PLUG TECHNOLOGY

COPPER

Copper core
centre electrode



COPPER PLUS

DOUBLE
COPPER

Copper core
centre & ground
electrodes



COPPER PLUS

PREMIUM
DOUBLE
COPPER /
NI125

Latest alloys
combined with
double copper
technology



COPPER PLUS

PLATINUM

Platinum centre
electrode with
copper core
ground electrode



PLATINUM

DOUBLE
PLATINUM

Platinum centre &
ground electrodes



PLATINUM

IRIDIUM

Iridium centre with
Platinum ground
electrode



IRIDIUM

FEATURES

MULTI
GROUND
ELECTRODE

Copper core centre
electrode with 2-4
ground electrodes



RIBBED CORE
NOSE

Premium
technology with
anti-fouling Ribbed
Ceramic



CHAMPION
INNOVATION



Your Champion benefit: spark plugs for a new engine generation

With Champion, you are sure you get spark plugs that are **especially designed to meet the needs of modern engines**. For instance, the current trend of downsizing engines and increasing the power output per cubic inch makes a **higher compression** necessary. This affects the lifetime of the plug and calls for technologies that help to extend the service life.

On the other hand, **lower compressed** engines that are often found in budget cars, need a technology that will guarantee a long service life at a fair price.

COPPER

The copper technology provides excellent lifetime and engine performance at a reasonable price. It is commonly used in basic engines that are found in popular models and budget cars.

How Champion improved performance and service life

The **copper cored nickel centre electrode** drops the running temperature of the firing pin and gives up to 12,000 miles / 20,000 km service life.



Champion Copper: your benefits

- Service life of up to 12.000 / 20,000 km



DOUBLE COPPER



Champion Copper Plus spark plug technology began as an automotive OE plug. Today it is widely used in a variety of power equipment applications.

How we improved performance and service life

The **inclusion of copper in the nickel ground electrode** lowers the temperature by up to 100° C. This, coupled with the **copper cored nickel centre electrode** allows the service life to be raised.



Champion Double Copper: your benefits

- Provides dependable performance and durability
- Copper core center electrode allows accurate control of heat range, optimizing plug performance and longevity
- Service life raised to up to 25,000 miles / 40,000 Km



PREMIUM DOUBLE
COPPER / NI125

Champion Premium Double Copper / NI125 plugs utilise the latest Suppression, Ceramic & Metal Alloy technology. With Fired In Suppressor Seal (FISS) the plug can be used as a sensor coupled to modern O.B.D. (On Board Diagnostic) systems.

How Champion improved performance and service life

Champion Premium Double Copper spark plugs combine the **latest alloys** with **double copper**. They use the latest **Suppression, Ceramic & Metal Alloy** technology. **Nickel 125 alloy** replaces the copper core ground electrode in the latest plugs.



Champion Copper/Ni125: your benefits

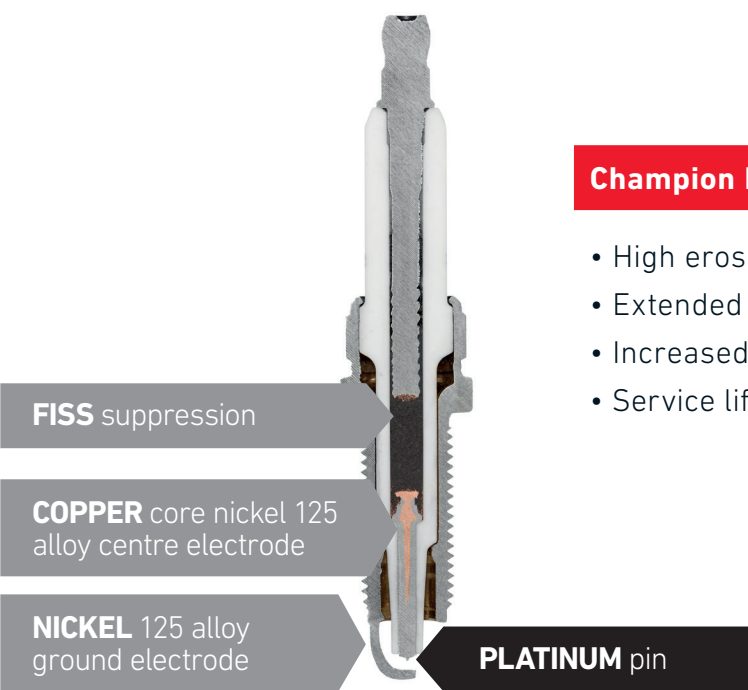
- Fired construction
- Stronger insulator
- Increases heat dissipation
- Service life of at least 38,000 miles / 60,000 km

PLATINUM

Champion Platinum spark plugs have a platinum centre electrode and a copper core nickel or nickel 125 ground electrode.

How we improved performance and service life

A **platinum pad or pin** welded to the Copper core centre electrode gives high erosion resistance, extends plug life & increases engine output.



Champion Platinum: your benefits

- High erosion resistance
- Extended plug life
- Increased engine output
- Service life of upto 38,000 miles / 60,000 km

DOUBLE PLATINUM

Champion Double Platinum Power spark plugs feature platinum on both the center and ground electrodes. Using platinum on both the center and ground electrodes provides longer life and exceptional durability.

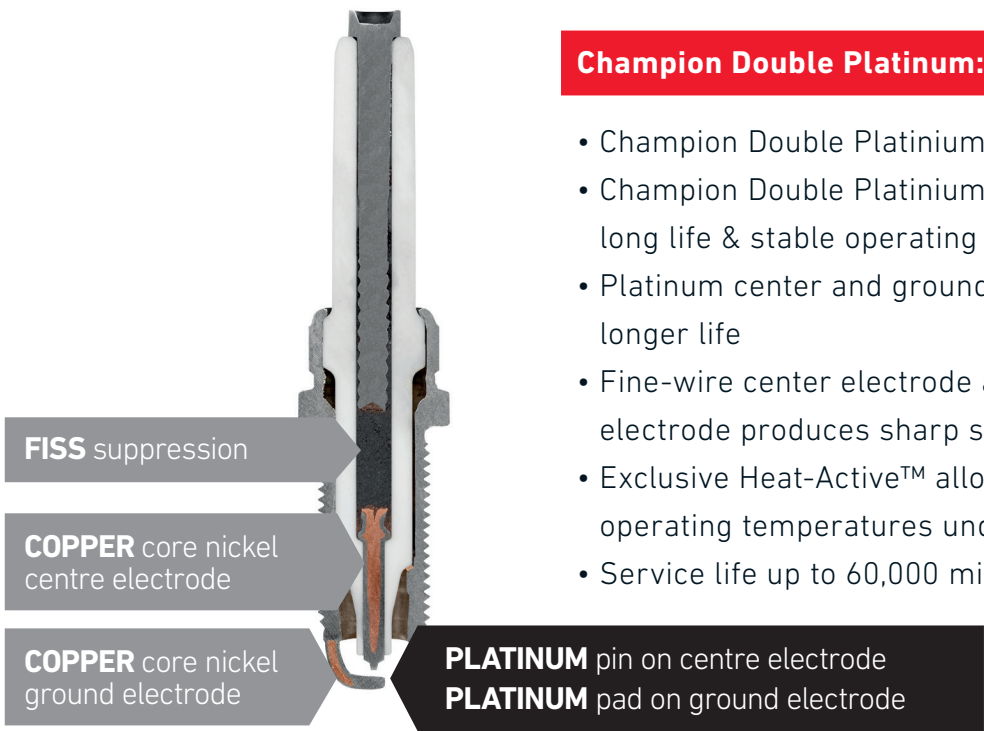
How Champion improved performance and service life

- A **platinum pad or pin** welded to the copper core centre electrode
- A **platinum pad** is welded to the copper core ground electrode



Champion Double Platinum: your benefits

- Champion Double Platinum reduces erosion
- Champion Double Platinum maintains the gap for long life & stable operating temperatures
- Platinum center and ground electrodes ensure longer life
- Fine-wire center electrode and V-trimmed ground electrode produces sharp spark focus
- Exclusive Heat-Active™ alloy maintains stable operating temperatures under varying engine loads
- Service life up to 60,000 miles / 100,000 km



IRIDIUM

Champion pioneered the use of iridium in aviation and industrial applications nearly 30 years ago. Now iridium, which has a stabilizing effect on ignition voltage and excellent wear characteristics, is quickly becoming the technology of choice for engine manufacturers worldwide.

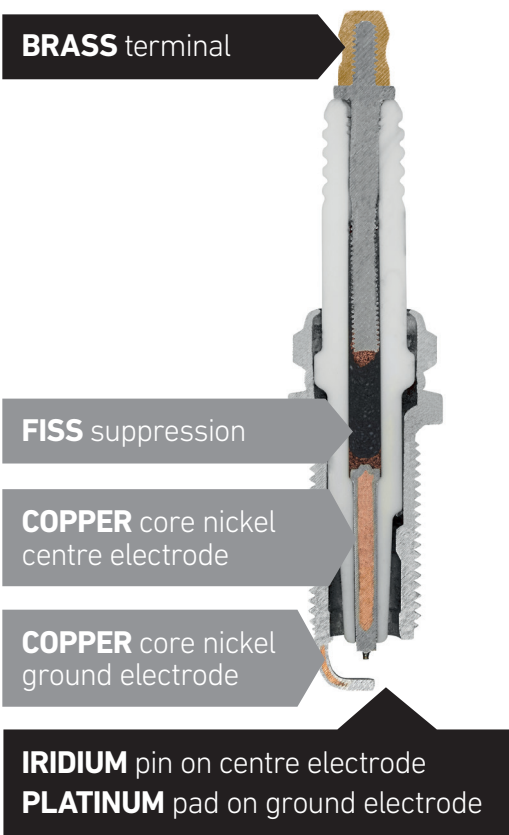
How we improved performance and service life

- **Iridium pin** welded to the copper core centre electrode
- **Platinum pad** welded to the copper core ground electrode



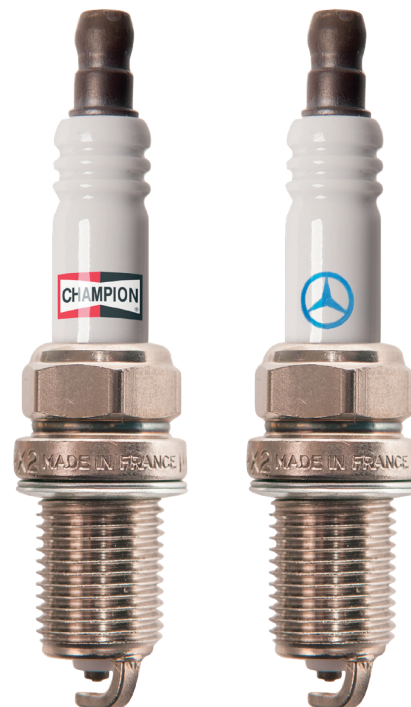
Champion Iridium: your benefits

- Champion Iridium spark plugs offer maximum performance regardless of engine or ignition type
- Champion Iridium center electrode and "laser-locked" platinum ground electrodes ensure maximum life
- Champion's fine-wire electrode and platinum v-trimmed ground electrode produce the sharpest spark focus
- Further reduces erosion maintaining the gap & increases life
- Exclusive Heat-Active™ alloy quickly reaches operating temperatures and maintains stable operating temperatures under varying engine loads
- Service life up to 75,000 miles / 120,000 km



SAME QUALITY, DIFFERENT PLUG

Champion plugs are developed **in close cooperation with the OE manufacturers**, in compliance with the most stringent requirements. In the **same OE facilities**, we also produce and optimize all our spark plugs for the aftermarket. So you can be sure that they will keep on **meeting or even exceeding the same standards**.



Champion plug

OEM plug

PROVEN TECHNOLOGY, PRODUCED IN WEST-EUROPE

- Improved **ignitability, performance and durability**
- Developed, tested and produced in our **global OE facilities**
- **European production** in our Chazelles-sur-Lyon (France) OE facility
- Meeting the **most stringent requirements** of OE manufacturers
- **Same quality standards** for OE manufacturers as for the aftermarket
- Including all **proven technologies** and industry-first **innovations**

Chazelles



LEADING VEHICLE PARC COVERAGE FOR SPARK PLUGS, AND INCREASING EVERY DAY



LEADING THE AFTERMARKET WITH OVER 95% COVERAGE FOR SPARK PLUGS

- For **automotive** and **non-automotive** applications
- OE plugs **directly available** for the aftermarket
- Including **technological innovations**
- Regular New Product Introductions **increasing the percentage of coverage continuously**