

WE UPGRADE GAS ENGINES



IRIDIUM SAVER



Distribution partner for DENSO spark plugs



DENSO has launched the latest generation of hardwearing spark plugs – the DENSO DOUBLE IRIDIUM (DDI) spark plug. DDI spark plug technology improves and extends the spark plug's lifespan and requires significantly less maintenance than competitor spark plugs. The DDI spark plug is particularly effective when used in biogas engines. Try DENSO DDI spark plugs today.

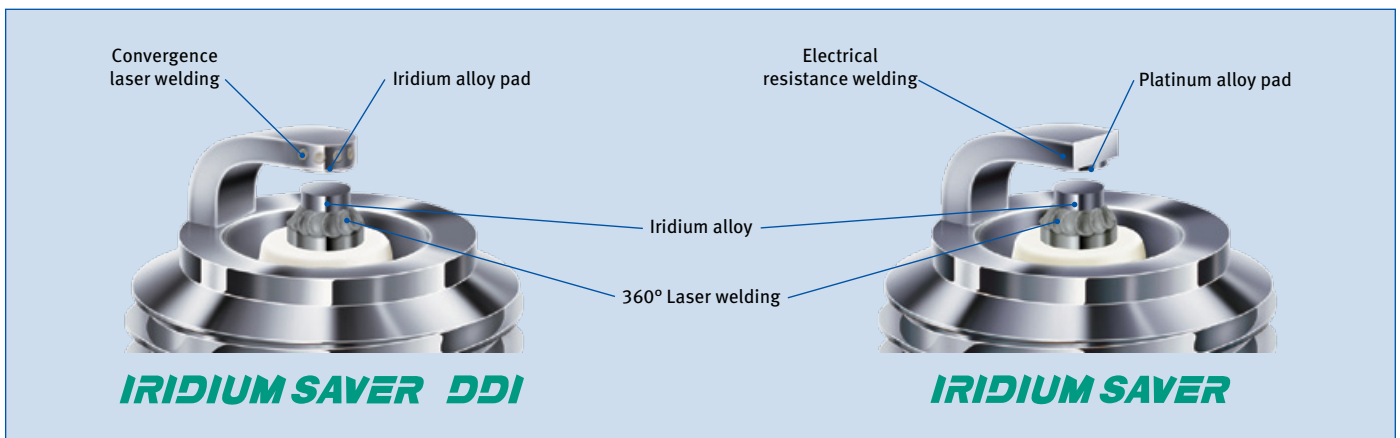
Unique "Iridium alloy"

A unique, high welding point "Iridium alloy" developed and patented by DENSO, dramatically improves wear resistance compared to other Iridium plug.

Patent: Japan (2877035), UK (2302367), USA (6094000)

Iridium Design

Iridium pads both on center electrode and on ground electrode, to minimize spark gap expansion.



Convergence laser welding

Wedge by laser welding fixes Iridium alloy pad on ground electrode securely, which realizes high reliability in high temperature combustion engine.

360° laser welding

Secure welding of the Iridium tip by "360° laser welding" can withstand all extreme engine conditions.

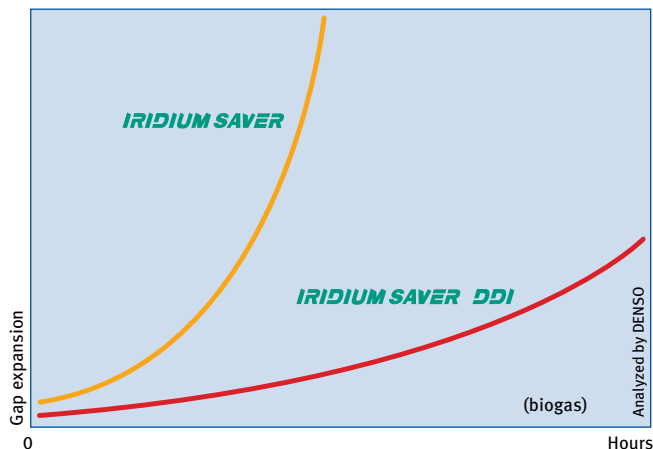
Patent: Japan (2921524), USA (6078129)

Proving longer life

Gap expansion is suppressed by Double Iridium Pads on both sides.

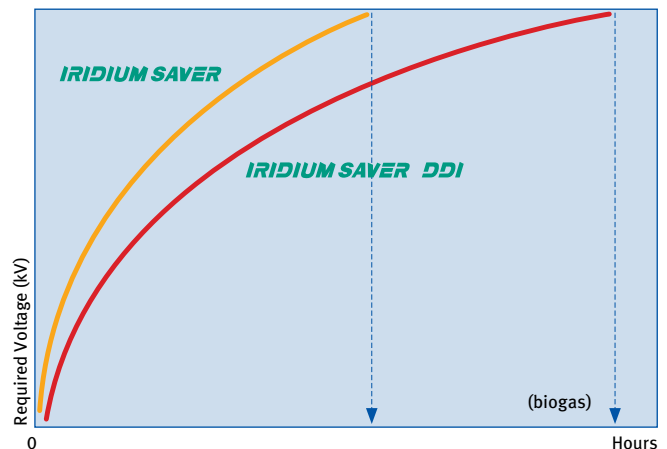
This suppression of gap expansion results in a longer life than Iridium Saver.

Gap expansion



The above is analysed by DENSO

Ignition Voltage limit

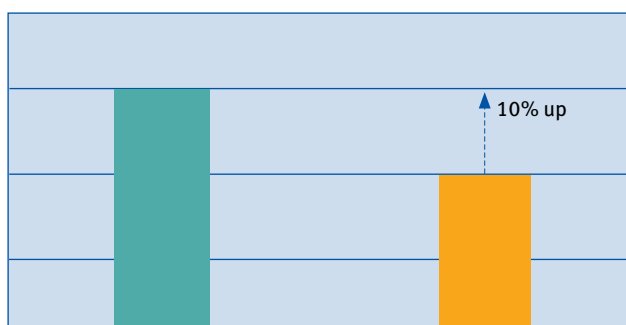


Key to high reliability

High Dielectric Ceramics

Newly developed ceramics with finer grain, molded-in higher pressure and higher density prevents electrical breakdown of insulator.

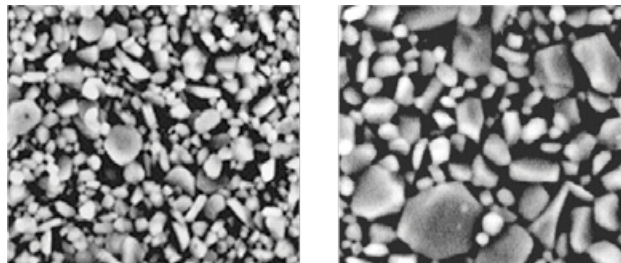
Transverse Rupture Strength



IRIDIUM SAVER DDI

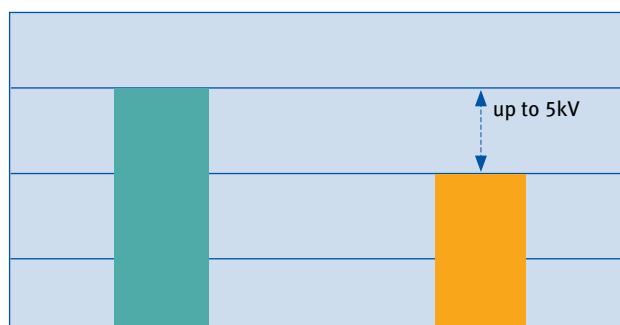
Conventional Plug

Electrical Breakdown Voltage (kV)



Newly Developed Ceramics

Conventional Ceramics



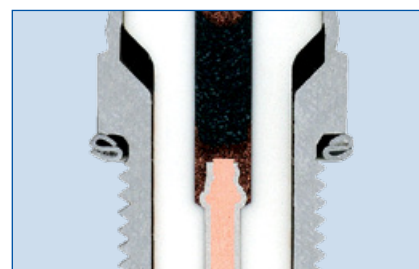
IRIDIUM SAVER DDI

Conventional Plug

Highly Reliable Monolithic Resistor

The Iridium Saver Plug guarantees high reliability for withstanding high combustion pressures by incorporating a stress resistant monolithic resistor that adheres to the resistor glass in the high temperature furnace.

In addition, this eliminates interference to electronic equipment from high energy coil noise.



Special Nickel Plating With Better Corrosive Resistance

Better corrosive resistance for condensed acid water. Exposure Test By Acid Steam Atmosphere.

Test length: 700 hours
 Temperature: 90°C
 Acid Water: pH=2

IRIDIUM SAVER



Analyzed by DENSO

NORMAL PLUG



Analyzed by DENSO

DENSO's OEM expertise and commitment to innovation enables them to remain at the forefront of cutting-edge gas engine spark plug development. The unique and specialist technology used in the Iridium Saver and Iridium Saver Performer spark plugs range extends their lifespan, making them ideal for high-compression lean-burn engines. Iridium Saver and Iridium Performer spark plugs also help to maximise engine performance and deliver extra durability. Because they require minimal maintenance compared to standard plugs, Iridium Saver and Iridium Saver Performer spark plugs increase service interval times. Try DENSO's Iridium Saver or Iridium Saver Performer spark plugs today.

Unique "Iridium alloy"

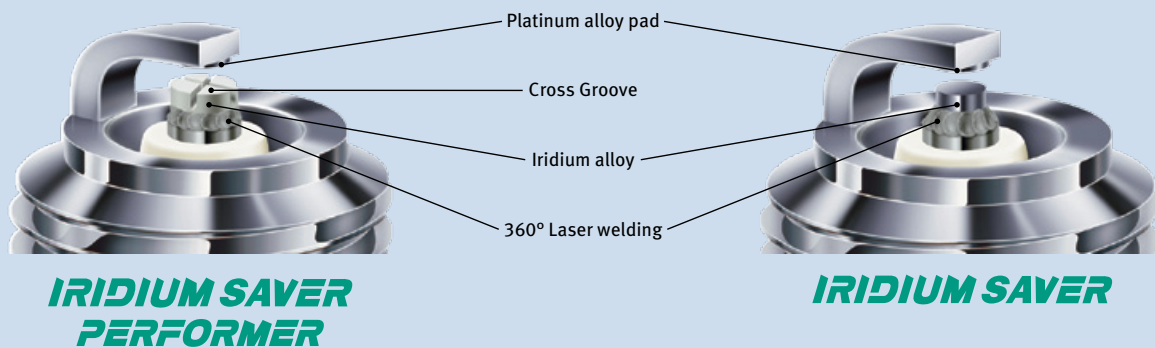
A unique, high welding point "Iridium alloy" developed and patented by DENSO, dramatically improves wear resistance compared to other Iridium plug.

Patent: Japan (2877035), UK (2302367), USA (6094000)

360° laser welding

Secure welding of the Iridium tip by "360° laser welding" can withstand all extreme engine conditions.

Patent: Japan (2921524), USA (6078129)



Cross Groove design (M18 Spark Plug)

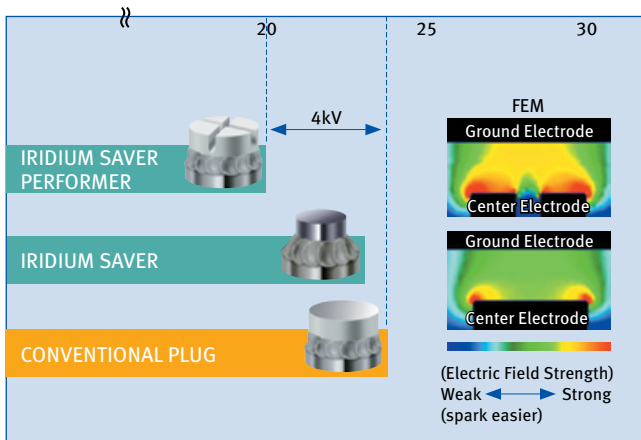
4 small electrodes created by Cross Groove improve sparking performance and suppress dispersion in voltage value, for an outstanding voltage decrease.

Patent: USA(6215234)

Proving longer life

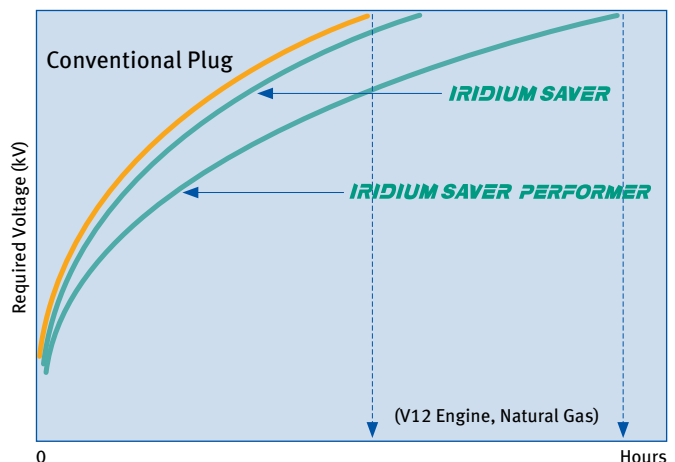
Required voltage is suppressed by 1) unique "Iridium alloy" 2) Cross Groove electrode, resulting in a longer life than conventional plug.

The Cross Groove Design



The above is analysed by DENSO

Ignition Voltage Limit



Specifications and cross reference

G **I** **3 - 1** **(A)**

for Gas Engines

Spark Plug Type and Installation Dimension

| No | Thread | Hex Size | Reach |
|----|-------------|----------|---------|
| E | M 14 x 1.25 | 20.8 mm | 19 mm |
| N | | | 12.7 mm |
| K | | 16 mm | 19 mm |
| L | M 18 x 1.5 | 20.8 mm | 20.6 mm |
| I | | 22.2 mm | 13.8 mm |
| T | | | |

Initial Gap

| No | Normal Value |
|----|--------------|
| 3 | 0.3 mm |
| 4 | 0.4 mm |
| 5 | 0.5 mm |

Terminal Design

| No | SPEC. |
|------|----------|
| none | solid |
| A | with nut |

Spark Plug Type and Installation Dimension

- IRIDIUM SAVER**
Iridium pad without cross groove on center electrode and Platinum pad on ground electrode.
- IRIDIUM SAVER**
For vehicle
- IRIDIUM SAVER DDI**
Iridium pad without cross groove on center electrode and Iridium pad on ground electrode.
- IRIDIUM SAVER PERFORMER**
Iridium pad with cross groove on center electrode and Platinum pad on ground electrode.
- IRIDIUM SAVER**
Iridium pad without cross groove on center electrode and Platinum pad on ground electrode.
- IRIDIUM SAVER DDI**
Iridium pad without cross groove on center electrode and Iridium pad on ground electrode.



Cross Reference

| | CHAMPION® | STITT® | ALTRONIC® | BERU® | IRIDIUM SAVER | IRIDIUM SAVER DDI | IRIDIUM SAVER PERFORMER |
|-----|--|-------------------------------|------------------|---|---------------|-------------------|-------------------------|
| M14 | RN79G (0.015) | 407XL / R407XL | J1463DP | 14R-3CPU / 14-3CPU / 14R-5DPU / 14R-4CDP | GE3-1 | GE3-5 | |
| | RN79G (0.020) | | | 14R-4CIU (Z187) / 14R-4CIU2 (Z215) / 14R-4DIU2 (Z258) / 14R-4DIU3 | | GE3-5 | |
| | RC78PYP / RC78PYP15 | | | 14R-4CIU (Z205) | GE5-1 | | |
| | RC78WYP15 | | | 14FR-4DPUO | GK3-1 | GK3-5 | |
| | | | | 14FR-4DIU | | | |
| | RL85G / RL15B | 407L / R407L | J1443DP | 14R-5BPU / 14R-4ADP / 14R-5BIU | GN3-1 | | |
| M18 | RB77WPCC / KB77WPCC / RB77CC / PB78WPC | | L1863IP | 18GZ4-77 / 18GZ6-77-2 | GI3-3 | GI3-5 | GI3-1 |
| | RB75N / RB75PP | R807LL | L1863B / L1863DP | 18GZ20 | GI3-3 | GI3-5 | GI3-1 |
| | RB75WPCC-1 | | | 18GZ5-77-2 | GL3-3 | GL3-5 | GL3-1 |
| | RB76N / RB76PP | R807LL | | 18GZ7 | GI3-3 | GI3-5 | GI3-1 |
| | RM77N | 807 / 827 / 847 / U827 / U847 | L1843B | 18GZ22 | | | GT3-1 |
| | RM77PP | | L1843IP | | | | |

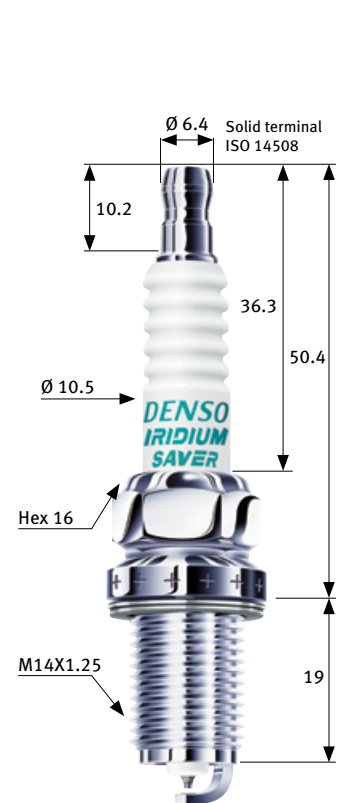
GE3-1 GE5-1 GE3-5



GN3-1

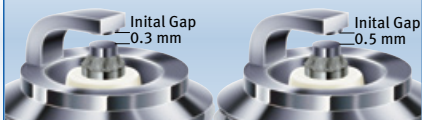


GK3-1 GK3-5



GE3-1

GE5-1



GN3-1



GK3-1



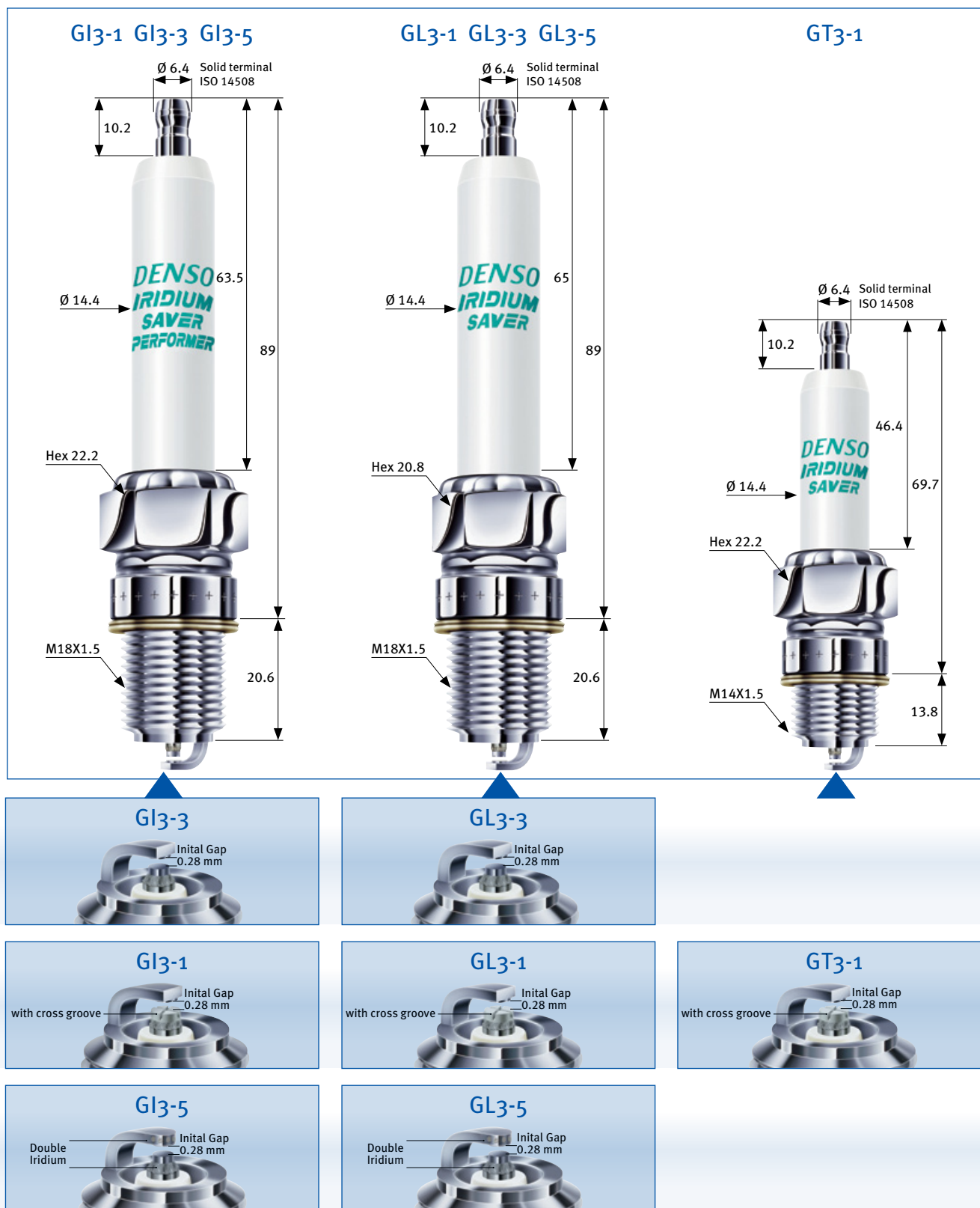
GE3-5



GK3-5



Spark Plugs M18



WE UPGRADE GAS ENGINES



When Things get hot our Service Team is at your Site quickly.



Regardless of which part of the globe we need to travel to.

We know that the stakes are high, and therefore we outperform the others. That is because we want everything to run smoothly at your site, everywhere and at any time.

This is entirely in keeping up with our motto:
Let us drop everything and work on your problem!



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