



DENSO Iridium Saver Spark Plugs



MOTORTECH®



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The DDI's Key to Long Plug Life

DENSO's latest generation of hardwearing spark plugs – the DENSO DOUBLE IRIDIUM (DDI) spark plugs.

DDI spark plug technology improves and extends the spark plug's lifespan and requires significantly less maintenance than competitor spark plugs. DDI spark plugs are particularly effective when used in biogas engines.

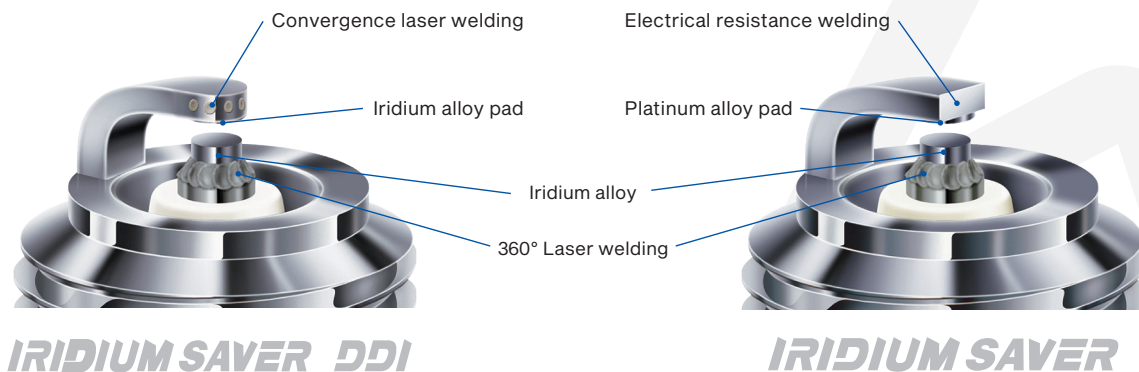
Unique "Iridium Alloy"

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 minimise 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.

Proving Longer Life

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

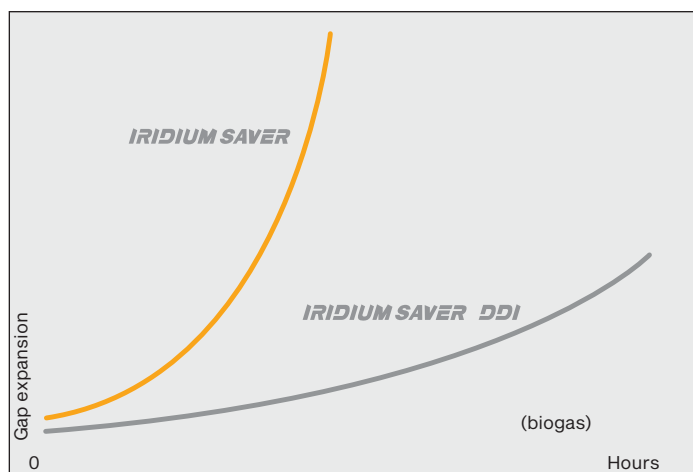
This suppression of gap expansion results in a longer life than Iridium Saver.

360° Laser Welding

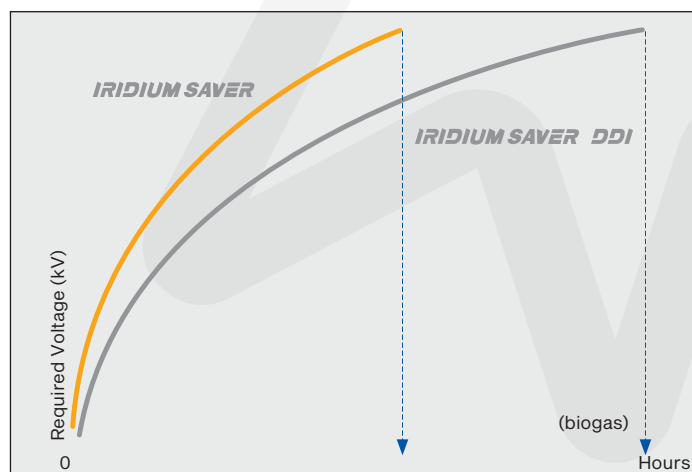
Secure welding of the Iridium tip by “360° laser welding” can withstand all extreme engine conditions.

Patent: Japan (2921524), USA (6078129)

Gap Expansion



Ignition Voltage Limit



The above is analysed by DENSO

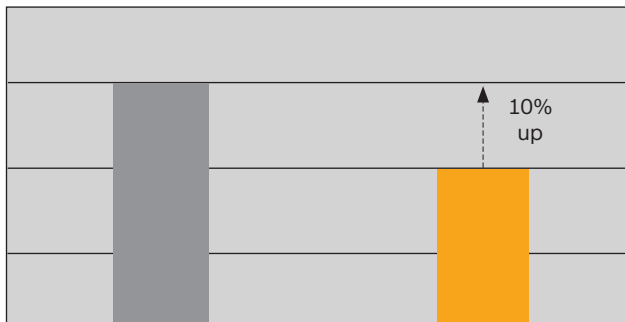
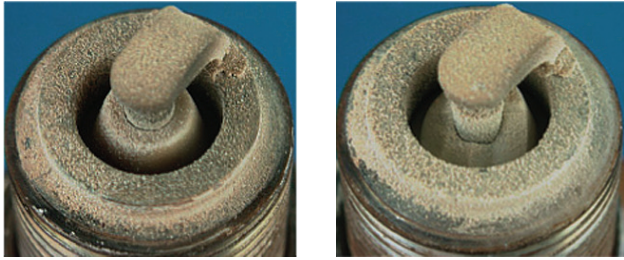


Key to High Reliability

High Dielectric Ceramics

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

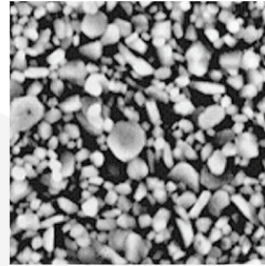
Transverse Rupture Strength



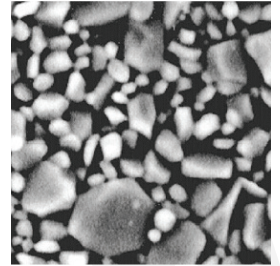
IRIDIUM SAVER DDI

Conventional Plug

Electrical Breakdown Voltage (kV)



Newly Developed Ceramics



Conventional Ceramics



IRIDIUM SAVER DDI

Conventional Plug

Highly Reliable Monolithic Resistor

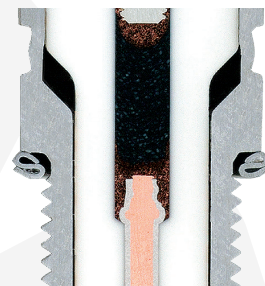
The Iridium Saver Plug guarantees high reliability for withstanding high combustion pressures by incorporating a stress resistant monolithic resistor that adheres to the resistor glass in the high temperature furnace. In addition, this eliminates interference to electronic equipment from high energy coil noise.

Special Nickel Plating With Better Corrosive Resistance

Better corrosive resistance for condensed acid water.

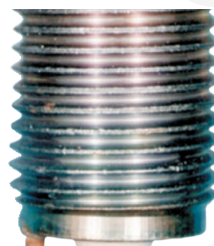
Exposure test by acid steam atmosphere.

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



IRIDIUM SAVER

NORMAL PLUG





The SAVER's Key to Long Plug Life

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"

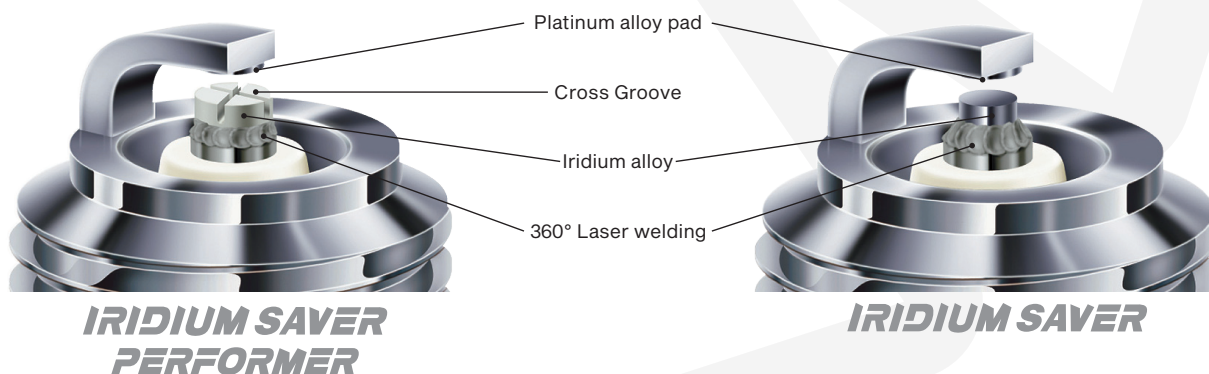
A unique, high welding point Iridium Alloy developed and patented by DENSO, dramatically improves wear resistance compared to other Iridium plug.

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)

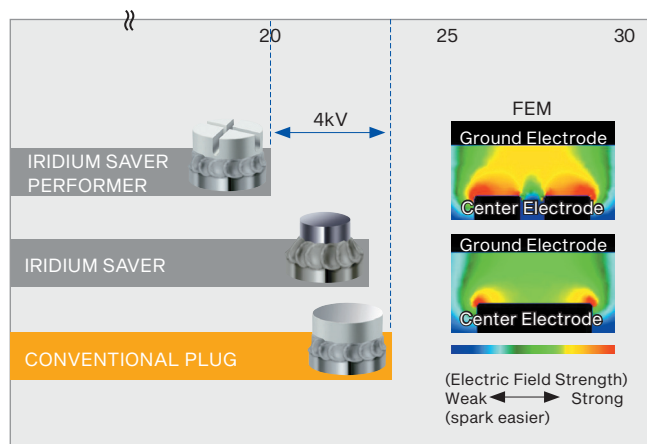


Cross Groove Design (M18 Spark Plug)

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

Patent: USA(6215234)

Cross Groove Design



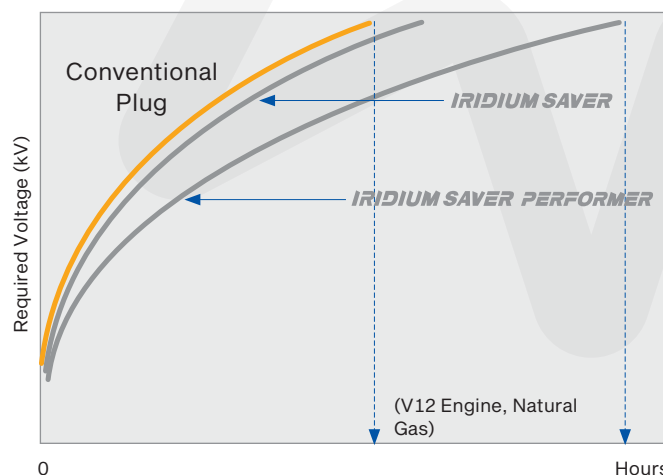
The above is analysed by DENSO

Proving Longer Life

Required voltage is suppressed by

- 1) Unique Iridium Alloy
- 2) Cross Groove electrode, resulting in a longer life than conventional plug.

Ignition Voltage Limit





Specifications and Cross References

For Gas Engines

G

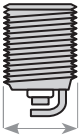

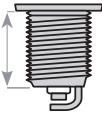
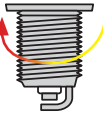
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(A)

Installation Dimension and Tightening Torque					
No	Thread	Hex Size	Reach	Torque	
					
E	M14x1.25	20.8 mm	19 mm	with lubricant	20 Nm, 15 lb-ft
N			12.7 mm		
K		16 mm	19 mm	without lubricant	30 Nm, 22 lb-ft
L	M18x1.5	20.8 mm	20.6 mm	with lubricant	30 Nm, 22 lb-ft
I		22.2 mm			
T			13.8 mm	without lubricant	45 Nm, 33 lb-ft

Initial Gap	
No	Nominal Value
3	0.3 mm
4	0.4 mm
5	0.5 mm

Terminal Design		
	No	SPEC.
	none	solid
	A	with nut

Electrode Design	
<ol style="list-style-type: none"> 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. 	
<ol style="list-style-type: none"> 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 References

	CHAMPION®	STITT®	ALTRONIC®	FEDERAL MOGUL®	IRIDIUM SAVER	IRIDIUM SAVER DDI	IRIDIUM SAVER PERFORMER
M14x1.25	RN79G (0.015)	407XL, R407XL	J1463DP	14R-3CPU, 14-3CPU, 14R-5DPU, 14R-4CDP	GE3-1	GE3-5	
				14R-4CIU (Z187), 14R-4CIU2 (Z215), 14R-4DIU2 (Z258), 14R-4DIU3, 14GZ-LL		GE3-5	
	RN79G (0.020)			14R-4CIU (Z205)	GE5-1		
	RC78PYP, RC78PYP15			14FR-4DPUO	GK3-1	GK3-5	
	RC78WYP15			14FR-4DIU, 14GZ-LL-FR			
M18x1.5	RL85G, RL15B	407L, R407L	J1443DP	14R-5BPU, 14R-4ADP, 14R-5BIU	GN3-1		
	FB77WPCC, 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				

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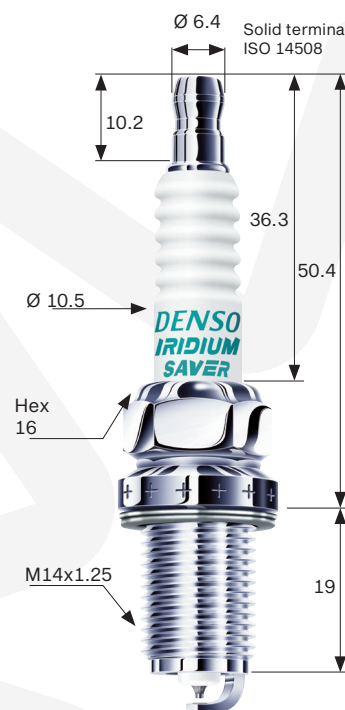
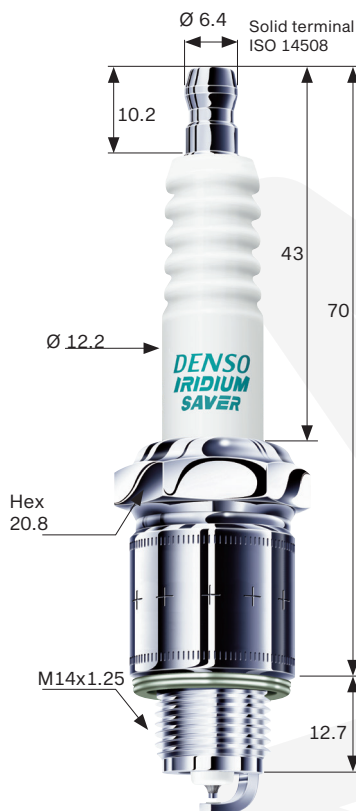
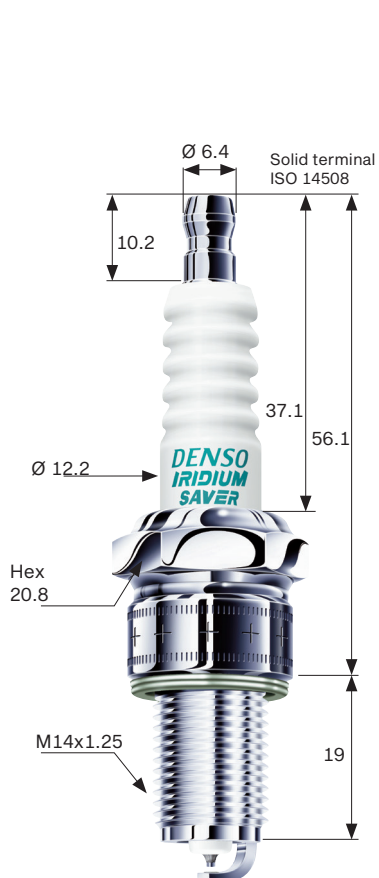


Spark Plugs M14x1.25

GE3-1 GE5-1 GE3-5

GN3-1

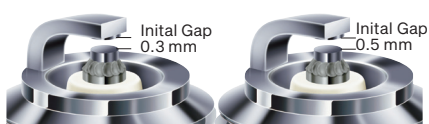
GK3-1 GK3-5



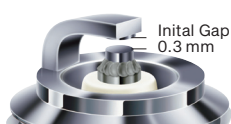
IRIDIUM SAVER

GE3-1

GE5-1



GN3-1



GK3-1



IRIDIUM SAVER
DDI

GE3-5



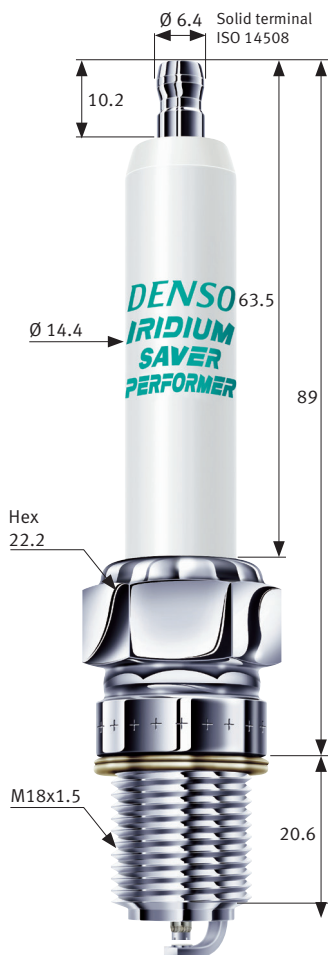
GK3-5



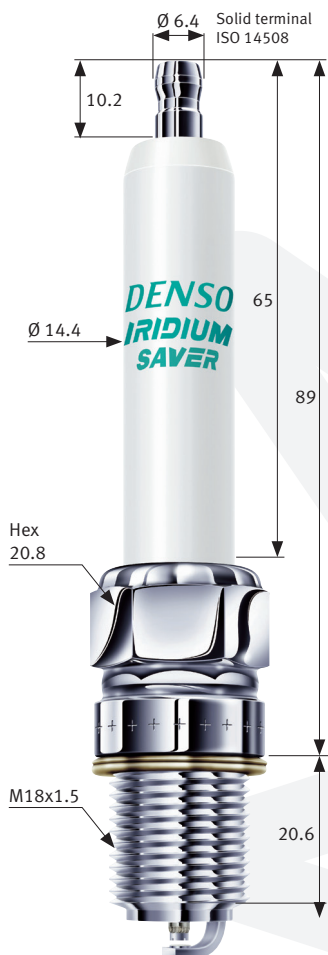


Spark Plugs M18x1.5

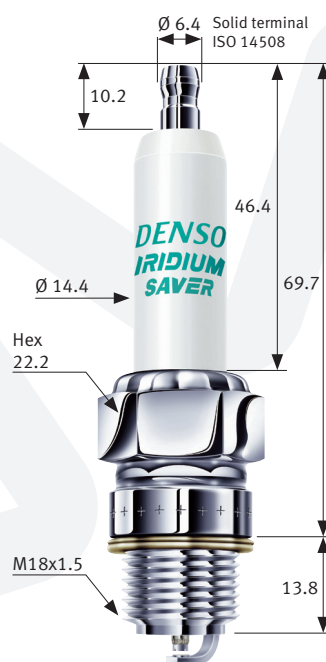
GI3-1 GI3-3 GI3-5



GL3-1 GL3-3 GL3-5



GT3-1



GI3-3



GL3-3



GI3-1



GL3-1



GT3-1



GI3-5



GL3-5





Service



Take advantage of MOTORTECH's many years of technical expertise in maintenance, repair and service. Our team participates in an ongoing training program and is familiar with the technical and maintenance procedures of all commonly used systems. Our technicians will perform know-how repairs using the latest test instruments and tools, either at your company site or at our own workshops, even on products that we did not produce.

Service Hotline: +49 5141 9399 222

Distributors Globally Networked!



As one of the long-term international leading developers and manufacturers of equipment, upgrade and spare parts for all stationary gas engines, it is particularly important for us to be well networked and positioned worldwide. Our distributors are regularly trained and are always up to date with our innovative solutions.

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