

Racing/High Performance Spark Plug: Heat Range Facts

Typically, engines which are stock or are only slightly modified, can use the original equipment (OE) recommended spark plug.

Racing Modified Engines – Generally, any engine modification that alters the overall compression ratio of the engine will involve spark plug selection issues. One thing to consider is heat range.

The heat range of the spark plug determines how much heat the spark plug is capable of removing from the combustion chamber. The heat range of the spark plug does not increase or decrease horsepower. It changes the temperature of the tip of the spark plug. If the heat range is too cold, the deposits will not burn off the tip and the spark plug will foul. If the spark plug heat range is too hot, pre-ignition can occur.

A switch in heat range of the spark plug will change the temperature of the spark plug tip by 70-120 degrees.

If you are unsure of the correct heat range to use, always start with a colder spark plug. If the plug is too cold, the plug will eventually foul and a misfire will occur. This will not hurt the engine. Unfortunately, though, if a spark plug that is too hot is inadvertently chosen, pre-ignition and detonation can severely damage your engine. Don't go to a hotter heat range unless you've consulted your engine experts.

As there are many different ways to modify your engine for racing applications, we can't tell you here which specific spark plug to use. If you have made modifications to your engine, you should refer to your component manufacturer's specifications and/or contact the experts at Fram Group at www.autolite.com.

FRAM Group IP LLC is not responsible for engine damage resulting from improper spark plug selection due to engine modifications or racing.

Bougies compétition / à Haut rendement : Faits sur la gamme de conductibilité thermique

Habituellement, les moteurs de série ou légèrement modifiés seulement peuvent utiliser les bougies d'équipement d'origine recommandées.

Moteurs de compétition modifiés — En général, toute modification qui change le taux de compression total du moteur entraîne des problèmes de sélection des bougies. L'un des éléments à considérer est la gamme de conductibilité thermique.

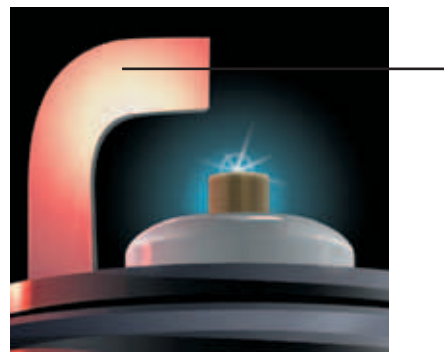
La gamme de conductibilité thermique des bougies détermine la quantité de chaleur que la bougie peut éliminer de la chambre de combustion. La gamme de conductibilité thermique de la bougie n'accroît ni ne réduit la puissance. Elle change la température de l'extrémité de la bougie. Si la gamme de conductibilité thermique est trop basse, les dépôts ne brûleront pas à l'extrémité, et la bougie s'encrassera. Si la gamme de conductibilité thermique est trop élevée, un allumage prématuré peut se produire.

La modification de la gamme de conductibilité thermique de la bougie changera la température de l'extrémité de la bougie d'environ 70 à 120 degrés.

Si vous n'êtes pas certain de la bonne gamme de conductibilité thermique à utiliser, commencez toujours par une bougie à gamme faible. Si la bougie est trop froide, elle finira par s'encrasser et il y aura un raté d'allumage. Cela n'endommagera pas le moteur. Par contre, si une bougie à gamme trop élevée est choisie par inadvertance, un allumage prématuré et une détonation peuvent grandement endommager le moteur. N'utilisez pas une bougie à gamme de conductibilité thermique supérieure à moins d'avoir consulté un expert motoriste.

Comme il existe de nombreuses façons de modifier un moteur aux fins de compétitions, nous ne sommes pas en mesure de vous indiquer la bougie exacte à utiliser. Si vous avez modifié votre moteur, vous devriez consulter les spécifications du fabricant des composants utilisés et/ou communiquer avec les spécialistes de Fram Group à www.autolite.com.

FRAM Group IP LLC n'est pas responsable des dommages causés au moteur par une mauvaise sélection de bougies à la suite de modifications au moteur ou de compétitions.



- **Cut Back Ground Electrode**
- **Anti-Corrosive Nickel Plating**
- **Large Yttrium Enhanced Nickel Alloy Ground Electrode *for better heat transfer***
- **Électrode de masse raccourcie**
- **Nickelage anticorrosif**
- **Grosse électrode amélioré à l'yttrium nickelé de masse *pour un meilleur transfert thermique***
- **Electrodo de masa corto**
- **Niquelado anticorrosivo**
- **Electrodo mejorado conitrio de niquel de masa grande *para mejor transferencia del calor***

Bujía de competición/alto rendimiento: Grado térmico

Generalmente, los motores corrientes o que han sido ligeramente modificados, pueden utilizar la bujía de equipo original (OE) recomendada.

Motores modificados para competición - En general, cualquier modificación que altere la relación de compresión total del motor tendrá que ver con la selección de la bujía. Un cosa que deberá tomarse en cuenta es el grado térmico.

El grado térmico de la bujía determina cuanto calor es capaz la bujía de extraer de la cámara de combustión. El grado térmico de la bujía no aumenta ni disminuye la potencia del motor, solamente cambia la temperatura de la punta de la bujía. Si el grado es demasiado frío, los depósitos en la punta no se quemarán y la bujía se ensuciará. Si el grado térmico es demasiado caliente, puede ocurrir encendido prematuro.

Un cambio en el grado térmico de la bujía cambiará la temperatura de la punta de la misma entre 70 y 120 grados.

En caso de tener dudas respecto al grado térmico correcta a utilizar, comenzar siempre con una bujía más fría. Si es demasiado fría, la bujía finalmente se ensuciará y ocurrirá falla del encendido. Esto no daña el motor. Desafortunadamente, si por accidente se elige una bujía demasiado caliente, el encendido prematuro y la detonación pueden dañar críticamente el motor. No pasar a un grado térmico más caliente sin antes consultar a un experto en motores.

Como existen muchas maneras distintas de modificar el motor para aplicaciones de carrera, aquí podemos indicar qué bujía específica utilizar. Si se le han hecho modificaciones al motor, referirse a las especificaciones del fabricante del componente y/o ponerse en contacto con los expertos de Fram Group en www.autolite.com.

FRAM Group IP LLC no se hace responsable de los daños causados al motor como resultado de la selección de bujías incorrectas debido a modificaciones hechas al motor o para competición.

Autolite® Racing Spark Plug Popularity Listings

Listes des bougies de compétition Autolite® les plus populaires

Listas de las bujías de competición Autolite® más populares

Racing and High Performance Plugs* Bougies de compétition et à haut rendement* Bujías de competición y de alto rendimiento*

Plug Number	Popularity Percent	Cumulative Percent
AR3932	17.41%	17.41%
AR3933	14.89%	32.30%
AR133	8.98%	41.28%
AR134	6.42%	47.71%
AR3910	6.11%	53.81%
AR3934	5.72%	59.53%
AR135	4.48%	64.01%
AR5383	3.44%	67.46%
AR13	3.28%	70.74%
AR3924	2.76%	73.50%
AR132	2.48%	75.98%
AR73	2.48%	78.46%
AR51	2.39%	80.85%
AR3911	1.97%	82.83%
AR473	1.74%	84.57%
AR12	1.70%	86.26%
AR103	1.37%	87.63%
AR3935	1.35%	88.98%
AR3923	1.19%	90.17%
AR94	1.02%	91.19%
AR93	0.97%	92.16%
AR474	0.86%	93.03%





Plug Number	Popularity Percent	Cumulative Percent
AR25	0.80%	93.83%
AR3931	0.74%	94.57%
AR52	0.62%	95.20%
AR33	0.59%	95.79%
AR472	0.57%	96.35%
AR2592	0.51%	96.86%
AR72	0.38%	97.24%
AR24	0.37%	97.61%
AR4152	0.34%	97.94%
AR92	0.28%	98.23%
AR2593	0.27%	98.50%
AR32	0.23%	98.73%
AR764	0.23%	98.96%
AR50	0.21%	99.18%
AR2594	0.19%	99.37%
AR53	0.18%	99.55%
AR4132	0.17%	99.72%
AR23	0.13%	99.84%
AR472	0.08%	99.92%
AR4133	0.07%	99.99%
AR4153	0.004%	100.00%
AR3912	0.002%	100.00%

* The proper gap for Autolite® Racing Plugs is set during the manufacturing process. Do not gap before installing.

* L'écartement correct des bougies Autolite® Racing est obtenu durant la fabrication. Aucun ajustement n'est nécessaire avant l'installation.

* El entrehierro correcto para las Bujías Autolite® para Automóviles de Carrera se establece durante el proceso de fabricación. No modifique el entrehierro antes de la instalación.

High Performance Racing Applications

	PLUG 	GAP ÉNCARTEMENT ESPACIO		PLUG 	GAP ÉNCARTEMENT ESPACIO
ACURA			BMW (Cont'd/Suite/Continúa)		
<i>Integra</i>			<i>318iS</i>		
2001-00 4-1.8L F/inj. DOHC V-Tec	AR3923	.044	1994 4-1.8L F/inj.	AR3923	.030
<i>NSX</i>			1991 4-1.8L F/inj. (16V)	AR3923	.032
2006-00 V6-3.0L F/inj.	AR3923	.044	<i>318ti</i>		
1999 V6-3.0L F/inj. DOHC	AR3923	.044	1995 4-1.8L F/inj.	AR3923	.032
1995-94 V6-3.0L F/inj.	AR3924	.044	<i>323i, 323Ci</i>		
<i>RL</i>			2000 6-2.5L F/inj.	AR3924	.040
2004-00 V6-3.5L F/inj. SOHC	AR3924	.044	<i>325i</i>		
<i>RSX</i>			1995-91 6-2.5L F/inj. (24V)	AR3923	.032
2004-02 4-2.0L F/inj. (16V) DOHC K20A3 V-Tec	AR3923	.044	<i>325i, 325iC</i>		
ALFA ROMEO			1994 6-2.5L F/inj.	AR3923	.032
<i>164</i>			<i>325iC</i>		
1995-94 V6-3.0L F/inj.	AR3923	.025	1993-92 6-2.5L F/inj. (12V)	AR3923	.032
ASTON MARTIN			<i>325iC, 325iS</i>		
<i>DB-7</i>			1995 6-2.5L F/inj. (24V)	AR3923	.032
2004-02 V12-6.0L F/inj. DOHC	AR3924	.052	<i>325iS</i>		
2001-00 V12-5.9L F/inj. DOHC	AR3924	.050	1994-93 6-2.5L F/inj.	AR3923	.035
2001-00 6-3.2L F/inj. DOHC SC	AR3924	.030	<i>325iS, 325iX, 525i</i>		
1998-97 6-3.2L F/inj. DOHC SC	AR3924	.030	1991 6-2.5L F/inj.	AR3923	.032
1999 6-3.2L F/inj. DOHC	AR3924	.030	<i>328i, 328Ci, 528i</i>		
1997-96 6-3.2L F/inj. DOHC	AR3924	.030	2000 6-2.8L F/inj.	AR3924	.040
<i>DB-9</i>			<i>328i, 328iC, 328iS</i>		
2011-05 V12-6.0L F/inj. (48V) QOHC	AR3924	.052	1996 6-2.8L F/inj.	AR3923	.032
<i>DBS</i>			<i>525i</i>		
2011-08 V12-6.0L F/inj. (48V) QOHC	AR3924	.052	1993-92 6-2.5L F/inj.	AR3923	.032
<i>Rapide</i>			<i>525i, 525i Touring</i>		
2011-10 V12-6.0L F/inj. (48V) QOHC	AR3924	.052	1994 6-2.5L F/inj.	AR3923	.030
<i>Vanquish</i>			<i>530i</i>		
2006-02 V12-6.0L F/inj. (48V) QOHC	AR3924	.052	1996-94 V8-3.0L F/inj.	AR3924	.032
2001 V12-5.9L F/inj. DOHC	AR3924	.050	<i>540i</i>		
<i>Vantage</i>			1996 V8-4.0L F/inj.	AR3924	.032
2011-10 V12-6.0L F/inj. (48V) QOHC	AR3924	.052	<i>540i, 540iA</i>		
<i>Virage</i>			2004-00 V8-4.4L F/inj.	AR3924	.040
1995-90 V8-5.3L F/inj.	AR3923	.030	<i>540i, 740iL</i>		
<i>Volante</i>			1997 V8-4.4L F/inj.	AR3923	.032
1995-90 V8-5.3L F/inj.	AR3923	.030	<i>545i, 645Ci, 745i</i>		
AUDI			2005-03 V8-4.4L F/inj.	AR3924	.040
<i>R8</i>			<i>850Ci</i>		
2011-10 V10-5.2L F/inj. DOHC	AR3923	.032	1997 V12-5.4L F/inj.	AR3923	.032
2011-08 V8-4.2L F/inj. DOHC	AR3923	.032	<i>M3</i>		
<i>TT Coupe</i>			1995 6-3.0L F/inj. (24V)	AR3924	.035
2011-08 4-2.0L F/inj. Turbo	AR3923	.032	<i>M5</i>		
2006-00 4-1.8L F/inj. Turbo	AR3923	.032	2003-00 V8-5.0L F/inj.	AR3924	.040
BMW			<i>Z3</i>		
<i>318i, 318iC, 318iS</i>			2002-00 6-2.5L F/inj.	AR3924	.040
1995 4-1.8L F/inj. (16V)	AR3923	.032	<i>Z4</i>		
1993 4-1.8L F/inj.	AR3923	.032	2006-03 6-2.5L F/inj. (24V) DOHC M54	AR3924	.040
<i>318i, 318iC, 318iS, 318ti</i>			2005-03 6-3.0L F/inj. (24V) DOHC M54	AR3924	.040
1996 4-1.9L F/inj.	AR3923	.032	<i>Z8</i>		
			2003-01 V8-5.0L F/inj. (32V) DOHC	AR3924	.040

High Performance Racing Applications

	PLUG 	GAP ÉNCARTEMENT ESPACIO		PLUG 	GAP ÉNCARTEMENT ESPACIO
BMW (Cont'd/Suite/Continúa)			CHEVROLET (Cont'd/Suite/Continúa)		
<i>Alpina Roadster</i>			<i>Monte Carlo</i>		
2004-03 V8-4.8L F/inj. (32V) DOHC	AR3924	.040	1971 V8-350CID 4 bbl.	AR25	.035
BUICK			1974-70 V8-400CID 2 & 4 bbl.	AR135	.035
<i>Regal, Grd Natl, GNX</i>			1974-72 V8-454CID 4 bbl.	AR135	.035
1987-84 V6-3.8L F/inj. Turbo (7)	AR25	.035	1971 V8-454CID 4 bbl.	AR24	.035
1974-73 V8-455CID 2 bbl.	AR25	.040	1971 V8-454CID 4 bbl. High Perf	AR25	.035
<i>Skylark, Special, Sportwagon (RWD)</i>			1986 V8-5.0L 4 bbl. (G)	AR24	.035
1967 V8-400CID 4 bbl.	AR25	.035	<i>Nova, Chevy II</i>		
CHEVROLET			1974-72 V8-350CID 2 & 4 bbl.	AR135	.035
<i>Beretta, GT, GTZ, Z26</i>			1971 V8-350CID 4 bbl.	AR25	.035
1992-90 4-2.3L F/inj. (A)	AR3924	.035	1970 V8-396CID 4 bbl.	AR24	.035
<i>Camaro, Iroc Z, RS, Z28</i>			CHEVROLET/GMC TRUCK		
1983 V6-2.8L 2 bbl. HO (L)	AR23	.045	<i>El Camino/Caballero/Sprint</i>		
1995-94 V6-3.4L F/inj. (S)	AR25	.045	1970 V8-396CID 4 bbl.	AR25	.035
1973-69 V8-307CID 2 bbl.	AR135	.035	1970 V8-396CID 4 bbl. High Perf	AR24	.035
1974 V8-350CID 2 & 4 bbl.	AR135	.035	1970 V8-454CID 4 bbl.	AR24	.035
1970 V8-350CID 2 & 4 bbl.	AR135	.035	CHRYSLER		
1972 V8-350CID 4 bbl.	AR135	.035	<i>Cirrus</i>		
1971 V8-350CID 4 bbl.	AR25	.035	1995 V6-2.5L F/inj. (H)	AR3923	.044
1972 V8-400CID 4 bbl.	AR135	.035	<i>Crossfire</i>		
1985 V8-5.0L 4 bbl. (G)	AR25	.045	2008-04 V6-3.2L F/inj. (18V) SOHC (L)	AR3924	.040
1986 V8-5.0L 4 bbl. (H)	AR24	.045	2006-05 V6-3.2L F/inj. (18V) SOHC (N) SC	AR3924	.040
1986-85 V8-5.0L F/inj. (F)	AR24	.035	<i>Sebring (FJ-Body), Sebring Convertible</i>		
1987 V8-5.7L F/inj. (8)	AR24	.035	1998-96 4-2.0L F/inj. (16V) DOHC (Y)	AR3923	.050
<i>Chevelle, Malibu</i>			1998-97 4-2.4L F/inj. (16V) (X)	AR3924	.050
1974-72 V8-350CID 4 bbl.	AR135	.035	2000-96 V6-2.5L F/inj. (H)	AR3923	.044
1974 V8-400CID 2 & 4 bbl.	AR135	.035	1997-95 V6-2.5L F/inj. (N)	AR3923	.044
1972 V8-400CID 4 bbl.	AR135	.035	2000 V6-2.5L F/inj. (24V) DOHC (N)	AR3924	.044
1970 V8-400CID 4 bbl.	AR25	.035	DODGE		
1974-72 V8-454CID 4 bbl.	AR135	.035	<i>Charger, Coronet, Super Bee</i>		
1971-70 V8-454CID 4 bbl.	AR24	.035	1974 V8-440CID 4 bbl.	AR23	.035
1971 V8-454CID 4 bbl. High Perf	AR25	.035	<i>Neon</i>		
<i>Cobalt</i>			2006-97 4-2.0L F/inj. SOHC (C)	AR3923	.035
2007-05 4-2.0L (16V) DOHC SC (P)	AR3923	.040	2006-03 4-2.0L F/inj. HO (F)	AR3923	.035
<i>Corvette</i>			1999-96 4-2.0L F/inj. DOHC (Y)	AR3923	.035
1974-72 V8-350CID 4 bbl.	AR135	.035	1998 4-1.8L F/inj.	AR3923	.035
1971 V8-350CID 4 bbl.	AR25	.035	<i>Stealth</i>		
1973-72 V8-350CID 4 bbl. High Perf	AR135	.035	1991-92 V6-3.0L F/inj. DOHC Twin-Turbo (C)	AR3924	.044
1974-72 V8-454CID 4 bbl.	AR135	.035	1993-91 V6-3.0L F/inj. DOHC (B)	AR3924	.044
1971-70 V8-454CID 4 bbl.	AR24	.035	1993 V6-3.0L F/inj. Turbo (C) (Cdn)	AR3924	.044
1992-90 V8-5.7L F/inj. (J)	AR3924	.035	1997-93 V6-3.0L F/inj. DOHC (J)	AR3924	.044
1992-91 V8-5.7L F/inj. (8)	AR3924	.035	1997-93 V6-3.0L F/inj. Turbo (K)	AR3924	.044
1998-97 V8-5.7L F/inj. (32V) (G)	AR103	.050	EAGLE		
<i>Impala</i>			<i>Talon</i>		
1973-72 V8-350CID 2 & 4 bbl.	AR135	.035	1998-95 4-2.0L F/inj. (Y)	AR3923	.050
1973-72 V8-400CID 2 bbl.	AR135	.035	FORD		
1973-72 V8-454CID 4 bbl.	AR135	.035	<i>Contour, Contour SVT</i>		
<i>Monte Carlo</i>			2000-98 V6-2.5L F/inj. (24V) DOHC HO (G)	AR764	.054
1974-72 V8-350CID 2 & 4 bbl.	AR135	.035			

High Performance Racing Applications

	PLUG 	GAP ÉCARTEMENT ESPACIO		PLUG 	GAP ÉCARTEMENT ESPACIO
FORD (Cont'd/Suite/Continúa)			FORD (Cont'd/Suite/Continúa)		
<i>Contour, Contour SVT</i>			<i>MUSTANG</i>		
2000-98 V6-2.5L F/inj. (24V) DOHC (L)	AR764	.054	1970-69 V8-351CID 2 & 4 bbl. W	AR33	.035
<i>Falcon</i>			1969-67 V8-390CID 4 bbl.	AR33	.035
1964-63 V8-260CID	AR33	.035	1968 V8-427CID 4 bbl.	AR33	.035
1968-63 V8-289CID 2 & 4 bbl.	AR33	.035	1970-68 V8-428CID 4 bbl.	AR33	.035
1970-68 V8-302CID 2 bbl.	AR33	.035	1971-70 V8-429CID 4 bbl. C	AR24	.035
1963 V8-352CID 2 bbl.	AR33	.035	1971-69 V8-429CID 4 bbl.	AR33	.035
<i>Galaxie</i>			<i>Taurus</i>		
1971-61 V8-390CID 2 & 4 bbl.	AR33	.035	1995-90 V6-3.0L F/inj. SHO (Y)	AR3924	.044
1961 V8-390CID 3-2bbl	AR33	.035	1999-96 V8-3.4L F/inj. SHO (N)	AR764	.044
1964-61 V8-390CID 4 bbl. High Perf	AR33	.035	<i>Thunderbird</i>		
1963-62 V8-406CID 3-2bbl	AR33	.035	1986-83 4-2.3L F/inj. Turbo (W)	AR764	.034
1963-62 V8-406CID 4 bbl.	AR33	.035	1980 V8-255CID 2 bbl.	AR25	.050
1967-63 V8-427CID 2-4bbl	AR33	.035	1964 V8-289CID 2 & 4 bbl.	AR33	.035
1968-63 V8-427CID 4 bbl.	AR33	.035	1962-58 V8-352CID 4 bbl.	AR33	.035
1965 V8-427CID High Perf	AR33	.035	1963 V8-390CID 3-2bbl	AR33	.035
1968-67 V8-428CID 4 bbl.	AR33	.035	1968-61 V8-390CID 4 bbl.	AR33	.035
1969-66 V8-428CID 4 bbl. High Perf	AR33	.035	1996-95 V8-4.6L F/inj. SOHC (W)	AR764	.054
1972-69 V8-429CID 2 & 4 bbl.	AR33	.035	1972 V8-400CID 2 bbl. W	AR33	.035
1971 V8-429CID 4 bbl. Police	AR33	.035	1972 V8-400CID 2 bbl. C	AR25	.035
<i>GT</i>			1967-66 V8-428CID 4 bbl.	AR33	.035
2008-05 V8-5.4L F/inj. (32V) DOHC SC (S)	AR103	.044	1972-68 V8-429CID 2 & 4 bbl.	AR33	.035
<i>Mustang</i>			1973 V8-429CID 4 bbl. C	AR25	.035
1992 4-2.3L F/inj. (M)	AR764	.044	1971-70 V8-429CID 4 bbl. C	AR24	.035
1986-84 4-2.3L F/inj. Turbo (W)	AR764	.034	1960-59 V8-430CID 4 bbl.	AR33	.035
1999 V6-3.8L F/inj. (4)	AR764	.054	1992 V8-5.0L F/inj. HO (T)	AR25	.054
2004-03 V8-4.6L F/inj. (32V) Mach 1 (R)	AR103	.054	<i>Torino</i>		
2004-03 V8-4.6L F/inj. (32V) DOHC SC (Y)	AR103	.054	1968-63 V8-289CID 2 & 4 bbl. High Perf.	AR33	.035
2004-03 V8-4.6L F/inj. (32V) (V)	AR103	.054	1974-69 V8-302CID	AR33	.035
2004 V8-4.6L F/inj. (16V) (X)	AR103	.054	1970 V8-302CID 2 bbl. C	AR24	.035
2003-96 V8-4.6L F/inj. (16V) (X)	AR764	.054	1974-70 V8-351CID 2 & 4 bbl. C	AR25	.035
2002-96 V8-4.6L F/inj. (32V) (V)	AR764	.054	1974-69 V8-351CID 2 & 4 bbl. W	AR33	.035
2002-01 V8-4.6L F/inj. (16V) (W)	AR764	.054	1969-66 V8-390CID 2 & 4 bbl.	AR33	.035
1995-94 V8-5.0L F/inj. (T)	AR25	.054	1961 V8-390CID 2 & 4 bbl.	AR33	.035
1995-93 V8-5.0L F/inj. (D)	AR764	.054	1961 V8-390CID 3-2bbl	AR33	.035
1993-88 V8-5.0L F/inj. HO (E)	AR25	.054	1961 V8-390CID 4 bbl. High Perf	AR33	.035
1985-82 V8-5.0L 2 & 4 bbl. HO	AR25	.044	1972 V8-400CID 2 bbl. C	AR25	.035
2011 V8-5.4L F/inj. (H)	AR103	.044	1972 V8-400CID 2 bbl.	AR33	.035
2011-07 V8-5.4L F/inj. SC (S)	AR103	.044	1967 V8-427CID 2-4bbl	AR33	.035
1980-79 4-140CID 2 bbl. Turbo	AR764	.034	1967 V8-427CID 4 bbl.	AR33	.035
1980 V8-255CID 2 bbl.	AR25	.050	1969-68 V8-428CID 4 bbl.	AR33	.035
1964 V8-260CID	AR33	.035	1972-70 V8-429CID 4 bbl.	AR33	.035
1968-66 V8-289CID 2 & 4 bbl.	AR33	.035	1971-70 V8-429CID 4 bbl. C	AR24	.035
1968-64 V8-289CID 4 bbl. High Perf	AR33	.035	1974 V8-460CID 4 bbl. Police	AR25	.035
1975 V8-302CID 2 bbl.	AR25	.044	HONDA		
1973-68 V8-302CID 2 & 4 bbl.	AR33	.035	<i>Del Sol</i>		
1971-70 V8-302CID 2 & 4 bbl.	AR24	.035	1997-94 4-1.6L F/inj. DOHC V-Tec	AR3923	.052
1973-70 V8-351CID 2 & 4 bbl. C	AR25	.035			
1971 V8-351CID 4 bbl. C	AR24	.035			




High Performance Racing Applications

	PLUG 	GAP ÉNCARTEMENT ESPACIO		PLUG 	GAP ÉNCARTEMENT ESPACIO
HYUNDAI			LOTUS (Cont'd/Suite/Continúa)		
<i>Tiburon</i>			<i>Elise</i>		
2008-07 V6-2.7L F/inj. (24V) DOHC	AR3924	.044	2011-09 4-1.8L F/inj. (16V) DOHC 2ZZ-GE	AR3923	.044
2006-04 V6-2.7L F/inj. (24V) DOHC	AR3923	.044	2011-08 4-1.8L F/inj. (16V) DOHC 2ZZ-GE SC	AR3923	.044
2003 V6-2.7L F/inj. (24V) DOHC	AR3924	.044	2007-04 4-1.8L F/inj. (16V) DOHC 2ZZ-GE	AR3923	.044
INFINITI			<i>Esprit</i>		
<i>G20</i>			2005-97 V8-3.5L F/inj. Turbo		
2002-91 4-2.0L F/inj. (16V) DOHC SR20DE	AR3924	.044	<i>Exige</i>		
JAGUAR			2011-09 4-1.8L F/inj. (16V) DOHC 2ZZ-GE		
<i>S Type</i>			2011-08 4-1.8L F/inj. (16V) DOHC 2ZZ-GE SC		
2008-03 V6-3.0L F/inj. (24V) DOHC	AR103	.050	2007-06 4-1.8L (16V) DOHC 2ZZ-GE		
2008-01 V8-4.2L F/inj. (32V) DOHC	AR3924	.040	MAZDA		
2008-03 V8-4.2L F/inj. (32V) DOHC SC	AR3924	.040	6		
<i>SUPER V8</i>			2005-03 4-2.3L F/inj. (16V) DOHC		
2008-06 V8-4.2L F/inj. (32V) DOHC SC	AR3924	.040	2008-03 V6-3.0L F/inj. (24V) DOHC		
<i>X TYPE</i>			<i>Miata</i>		
2005-03 V6-2.5L F/inj. DOHC (D)	AR103	.050	2005-97 4-1.8L F/inj. DOHC		
2008-05 V6-3.0L F/inj. (24V) DOHC (C)	AR103	.050	2005-04 4-1.8L F/inj. DOHC Turbo		
2004-03 V6-3.0L F/inj. (24V) DOHC (F)	AR103	.050	<i>MX-6</i>		
<i>XJ-6</i>			1997-94 4-2.0L F/inj. (C)		
1997-89 6-4.0L F/inj.	AR3924	.035	MERCEDES		
1997-96 6-4.0L F/inj. SC	AR3923	.035	<i>SLK230 - Roadster</i>		
<i>XJ8</i>			2004-98 4-2.3L F/inj. (16V) DOHC 111983 SC		
2008-04 V8-4.2L D.I. (32V) DOHC	AR3924	.050	2010-06 V8-5.5L F/inj. (24V) SOHC		
2003-01 V8-4.0L F/inj. (32V) DOHC	AR3924	.050	2005 V8-5.5L F/inj. (24V) SOHC		
2002-00 V8-4.0L F/inj. (32V) DOHC SC	AR3923	.050	MERCURY		
<i>XJ-12</i>			<i>Capri RWD</i>		
1997-94 V12-6.0L F/inj.	AR103	.035	1986-83 4-2.3L F/inj. Turbo (W)		
<i>XJR, XJR-S</i>			1979 4-140CID 2 bbl. Turbo (W)		
2008-04 V8-4.2L F/inj. (32V) DOHC SC	AR3923	.050	1985-84 V8-5.0L F/inj. HO (M)		
2003-98 V8-4.0L F/inj. (32V) DOHC SC	AR3923	.050	1983 V8-5.0L 4 bbl. HO (F)		
1999-98 V8-4.0L F/inj.	AR3924	.050	1982 V8-5.0L VV (F)		
1997-95 6-4.0L F/inj. SC	AR3923	.035	<i>Comet</i>		
<i>XJ-S</i>			1963 V8-260CID		
1996-91 6-4.0L F/inj.	AR3924	.035	1967-65 V8-289CID 2 & 4 bbl.		
1996-93 V12-6.0L F/inj.	AR103	.035	1974-68 V8-302CID 2 & 4 bbl.		
1992-82 V12-5.3L F/inj.	AR103	.025	1973-69 V8-351CID 2 & 4 bbl.		
<i>XK-8</i>			1970-66 V8-390CID 2 & 4 bbl.		
2008-03 V8-4.2L F/inj. (32V) DOHC	AR3924	.040	1967 V8-427CID 2-4bbl		
2002-97 V8-4.0L F/inj.	AR3924	.050	1969-68 V8-427CID 4 bbl.		
<i>XKR</i>			1969 V8-428CID 4 bbl.		
2008-03 V8-4.2L F/inj. (32V) DOHC SC (B)	AR3924	.040	1970 V8-429CID 4 bbl.		
2002-00 V8-4.0L F/inj. (32V) DOHC SC	AR3923	.050	<i>Cougar</i>		
LEXUS			2002-99 V6-2.5L F/inj. (24V) DOHC (L)		
<i>SC430</i>			2010-01 V8-4.3L F/inj. (32V) QOHC 3UZFE		
2010-01 V8-4.3L F/inj. (32V) QOHC 3UZFE	AR3923	.044	<i>Cougar, XR-7</i>		
LOTUS			1986 4-2.3L F/inj. Turbo (W)		
<i>Elan</i>			1967 V8-289CID 2 & 4 bbl.		
1992-90 4-1.6L F/inj.	AR3923	.044	1969-68 V8-302CID 2 & 4 bbl.		
			1970 V8-302CID 2 bbl. C		
			1974-69 V8-351CID 2 & 4 bbl.		

High Performance Racing Applications

	PLUG 	GAP ÉNCARTEMENT ESPACIO		PLUG 	GAP ÉNCARTEMENT ESPACIO
MERCURY (Cont'd/Suite/Continúa)			MITSUBISHI (Cont'd/Suite/Continúa)		
<i>COUGAR, XR-7</i>			<i>Eclipse</i>		
1974-70 V8-351CID 2 & 4 bbl. C	AR25	.035	1995 4-2.0L F/inj. DOHC	AR3924	.044
1975 V8-351CID 2 bbl. M	AR25	.044	2007-05 4-2.4L F/inj. SOHC	AR3923	.044
1969-67 V8-390CID 2 & 4 bbl.	AR33	.035	2004-96 4-2.4L F/inj. SOHC	AR3924	.044
1997-94 V8-4.6L F/inj. SOHC (W)	AR764	.054	2005 V6-3.0L F/inj. (24V) SOHC (H)	AR3924	.044
1968 V8-427CID 4 bbl.	AR33	.035	2004 V6-3.0L F/inj. (24V) SOHC (H)	AR3923	.044
1970-69 V8-428CID 4 bbl.	AR33	.035	2003-00 V6-3.0L F/inj. (24V) DOHC 6G72	AR3923	.044
1969 V8-428CID 4 bbl. Police	AR33	.035	2011-07 V6-3.8L F/inj. (24V) SOHC	AR3923	.044
1969 V8-429CID 2 & 4 bbl.	AR33	.035	<i>Lancer</i>		
1993-91 V8-5.0L F/inj. HO (T)	AR25	.054	2011-10 4-2.0L F/inj. DOHC	AR3924	.044
<i>Cyclone</i>			2009-08 4-2.0L F/inj. DOHC	AR3923	.044
1971-70 V8-351CID 2 & 4 bbl. C	AR25	.035	2008 4-2.0L F/inj. DOHC Turbo	AR3923	.044
1971-70 V8-429CID 4 bbl.	AR24	.035	2007-04 4-2.0L F/inj. DOHC	AR3924	.044
<i>Meteor</i>			2007-04 4-2.0L F/inj. (16V) SOHC Turbo	AR3924	.032
1970-68 V8-302CID 4 bbl.	AR33	.035	2002 4-2.0L F/inj. (16V) DOHC 4G64	AR3924	.044
1972-71 V8-351CID 2 & 4 bbl.	AR33	.035	2003 4-2.0L F/inj. (16V) DOHC 4G63 Turbo	AR3924	.044
1970-62 V8-390CID 2 & 4 bbl.	AR33	.035	2005-04 4-2.4L F/inj. (16V) SOHC	AR3924	.044
1965-62 V8-390CID Police	AR33	.035	MORGAN		
1963-62 V8-406CID 3-2bbl	AR33	.035	<i>Aero 8</i>		
1963-62 V8-406CID 4 bbl.	AR33	.035	2007 V8-4.4L F/inj. (32V) QOHC	AR3924	.032
1965-63 V8-427CID 2-4bbl	AR33	.035	NISSAN		
1965-63 V8-427CID 4 bbl.	AR33	.035	<i>200SX</i>		
1968-66 V8-428CID 4 bbl.	AR33	.035	1998-95 4-1.6L F/inj. DOHC GA16DE	AR3923	.044
1970-66 V8-428CID 4 bbl. Police	AR33	.035	1998-96 4-2.0L F/inj. DOHC SR20DE	AR3924	.044
1971-70 V8-429CID 2 & 4 bbl.	AR33	.035	<i>240SX</i>		
<i>Montego</i>			1998-91 4-2.4L F/inj. DOHC KA24DE	AR3924	.044
1971-70 V8-429CID 4 bbl. HO	AR24	.035	<i>300ZX</i>		
<i>Sable</i>			1996-94 V6-3.0L F/inj. VG30DE	AR3924	.044
2005 V6-3.0L F/inj. (S)	AR103	.054	1996-91 V6-3.0L F/inj. VG30DETT Turbo	AR3924	.044
2004-03 V6-3.0L F/inj. (S)	AR764	.054	<i>Altima</i>		
2001-02 V6-3.0L F/inj. (S)	AR764	.054	2001-93 4-2.4L F/inj. (B)	AR3924	.044
2000 V6-3.0L F/inj. (S)	AR103	.054	<i>Sentra</i>		
1999-96 V6-3.0L F/inj. (S)	AR764	.054	1998-94 4-1.6L F/inj. DOHC GA16DE	AR3924	.044
2005-01 V6-3.0L F/inj. (U)	AR103	.044	2001-98 4-2.0L F/inj. DOHC SR20DE	AR3924	.044
2000-86 V6-3.0L F/inj. (U)	AR764	.044	1997-94 4-2.0L F/inj. DOHC SR20DE	AR3924	.032
MERKUR			PANOZ		
<i>XR4Ti</i>			<i>Esperante</i>		
1989-88 4-2.3L F/inj. Turbo (T)	AR764	.034	2007-00 V8-4.6L F/inj. (32V) DOHC	AR103	.054
1987-85 4-2.3L F/inj. Turbo (W)	AR764	.034	<i>Roadster</i>		
MITSUBISHI			2001-99 V8-4.6L F/inj. (32V) DOHC	AR103	.054
<i>3000 SL, GT, VR-4</i>			PLYMOUTH		
1999-91 V6-3.0L F/inj. DOHC	AR3923	.044	<i>Neon</i>		
1999-91 V6-3.0L F/inj. DOHC Turbo	AR3923	.044	2001-94 4-2.0L F/inj. SOHC (C)	AR3923	.035
<i>Diamante</i>			1999-95 4-2.0L F/inj. DOHC (Y)	AR3923	.035
2004-97 V6-3.5L F/inj. (24V) SOHC 6G74 (P)	AR3924	.044	PONTIAC		
1996-92 V6-3.0L F/inj. DOHC	AR3923	.044	<i>Fiero</i>		
<i>Eclipse</i>			1988-85 V6-2.8L F/inj. HO (9)	AR23	.045
1999-97 4-2.0L F/inj. DOHC	AR3923	.044			
1996 4-2.0L F/inj. DOHC	AR3923	.032			

High Performance Racing Applications

	PLUG 	GAP ÉNCARTEMENT ESPACIO		PLUG 	GAP ÉNCARTEMENT ESPACIO
PONTIAC (Cont'd/Suite/Continúa)			VOLKSWAGEN		
<i>Firebird</i>			<i>Beetle</i>		
1984-83 V6-2.8L 2 bbl. HO (L)	AR23	.045	2005-99 4-1.8L F/inj. (20V) DOHC Turbo	AR3923	.032
1986-85 V6-2.8L F/inj. HO (S)	AR23	.045	2005-2000 4-2.0L SOHC	AR3923	.043
1989 V6-3.8L F/inj. Turbo (7)	AR103	.035	2002 4-2.0L F/inj. Turbo	AR3923	.043
1985 V8-5.0L 4 bbl. (G)	AR25	.045	<i>EOS</i>		
1986 V8-5.0L 4 bbl. (H)	AR24	.045	2011-07 4-2.0L D.I. Turbo	AR3923	.032
1986-85 V8-5.0L F/inj. (F)	AR24	.035	2007 V6-3.2L D.I.	AR3923	.032
1987 V8-5.7L F/inj. (8)	AR24	.035	<i>GLI</i>		
<i>Grand Prix/FWD</i>			2008 2.0L D.I. Turbo	AR3923	.032
1990-89 V6-3.1L F/inj. Turbo (V)	AR103	.045	<i>Golf, GTI, Cabriolet</i>		
<i>Grand Prix/RWD</i>			2006-01 4-1.8L F/inj. (20V) DOHC Turbo	AR3923	.032
1986 V8-5.0L 4 bbl. (H)	AR24	.045	2000 4-1.8L F/inj. (20V) DOHC Turbo	AR3923	.040
PORSCHE			2009-06 2.0L D.I. (16V) DOHC Turbo	AR3923	.032
<i>911, 911 Carrera, 911 Carrera 2/4, 911 SC Coupe, 911 Turbo</i>			2005-02 4-2.0L F/inj. SOHC	AR3923	.043
2001-99 6-3.4L F/inj. DOHC	AR3923	.032	2001-00 4-2.0L F/inj. SOHC	AR3923	.040
2005-02 6-3.6L F/inj.	AR3923	.032	1999 4-2.0L F/inj. (16V)	AR3924	.040
2009-94 6-3.6L F/inj. Turbo	AR3923	.032	1998-90 4-2.0L F/inj. (16V)	AR3924	.028
1990 6-3.6L F/inj.	AR3924	.032	2006-02 V6-2.8L F/inj. DOHC	AR3924	.043
<i>968</i>			2001-00 V6-2.8L F/inj. DOHC	AR3924	.040
1994 4-3.0L F/inj.	AR3923	.032	1999-97 V6-2.8L F/inj.	AR3924	.028
<i>Boxster</i>			1996-95 V6-2.8L F/inj.	AR3923	.028
2000-98 6-2.5L F/inj. DOHC	AR3923	.032	1994 V6-2.8L F/inj.	AR3924	.028
2005-00 6-2.7L F/inj. DOHC	AR3923	.032	1993 V6-2.8L F/inj.	AR3923	.028
2005-00 6-3.2L F/inj. DOHC	AR3923	.032	<i>Passat, Passat Syncro</i>		
<i>Carrera GT</i>			2005-03 4-1.8L F/inj. DOHC Turbo	AR3923	.043
2006-04 V10-5.7L F/inj.	AR3923	.032	2002-98 4-1.8L F/inj. DOHC Turbo	AR3923	.032
TOYOTA			2008-06 4-2.0L D.I. (16V) DOHC Turbo	AR3923	.032
<i>Camry</i>			1997-94 4-2.0L F/inj.	AR3924	.028
2001-92 4-2.2L F/inj. DOHC 5S-FE	AR3923	.044	1993-92 4-2.0L F/inj.	AR3923	.028
2009-02 4-2.4L F/inj. (16V) DOHC 2AZ-FE	AR3923	.044	1991-90 4-2.0L F/inj.	AR3924	.028
2006-94 V6-3.0L F/inj. DOHC 1MZ-FE	AR3923	.044	2005-02 V6-2.8L F/inj.	AR3924	.043
2006-04 V6-3.3L F/inj. (24V) DOHC 3MZ-FE	AR3923	.044	2001 V6-2.8L F/inj.	AR3924	.040
<i>Celica-All Trac, ST, GT, GTS</i>			2000 V6-2.8L F/inj. SOHC Turbo	AR3924	.040
2005-00 4-1.8L F/inj. (16V) DOHC 1ZZ-FE	AR3924	.044	1999-97 V6-2.8L F/inj.	AR3924	.028
2005-00 4-1.8L F/inj. (16V) DOHC 2ZZ-GE	AR3923	.044	1996-92 V6-2.8L F/inj.	AR3923	.028
1998-94 4-1.8L F/inj. 7A-FE	AR3924	.032			
1993-90 4-2.0L F/inj. 3S-GTE Turbo	AR3923	.032			
1999-91 4-2.2L F/inj. 5S-FE	AR3923	.044			
1990 4-2.2L F/inj. 5S-FE	AR3924	.044			
<i>MR2, Spyder</i>					
2005-00 4-1.8L F/inj. (16V) DOHC 1ZZ-FE	AR3924	.044			
1995-91 4-2.0L F/inj. (16V) 3S-GTE Turbo	AR3923	.032			
1995-92 4-2.2L F/inj. (16V) 5S-FE	AR3923	.044			
1991 4-2.2L F/inj. (16V) 5S-FE	AR3924	.044			
<i>Paseo</i>					
1999-92 4-1.5L F/inj. 5E-FE	AR3924	.044			
<i>Supra, Celica Supra</i>					
1998-93 6-3.0L F/inj. 2JZ-GE	AR3924	.044			
1998-93 6-3.0L F/inj. 2JZ-GTE Turbo	AR3923	.044			

Racing/High Performance Spark Plug Principal Application Guide

Guide d'utilisation des principales bougies de compétition/Haut rendement

Guía de utilización principal de las bujías de competición/alto rendimiento

Racing Plug Number	Application Coverage
RACING PLUGS / BOUGIES DE COMPÉTITION / BUJIAS DE COMPETICION	
AR12	Chevrolet; Dodge; Plymouth (Racing); Flagship Marine
AR13	1985-82 Buick; 1988-79 Chevrolet; 1975-73 Dodge; 1986-82 Oldsmobile; 1975 Plymouth; 1988-81 Pontiac
AR32	Ford (Racing)
AR33	Ford (Racing); 1974-58 Ford; 1974-62 Mercury
AR50	Chrysler HEMI (Racing); Chevrolet Big Block (Racing); Ford HEMI (Racing)
AR51	Chrysler HEMI (Racing); Chevrolet Big Block (Racing); Ford HEMI (Racing)
AR52	Chrysler HEMI (Racing); Chevrolet Big Block (Racing); Ford HEMI (Racing)
AR53	Chrysler HEMI (Racing); Chevrolet Big Block (Racing); Ford HEMI (Racing)
AR72	Chevrolet (Racing); Chrysler Wedge V8 (Racing)
AR73	Chevrolet (Racing); Chrysler Wedge V8 (Racing)
AR92	Chevrolet (Racing); Ford (Racing). <i>Extended Tip Applications.</i>
AR93	Chevrolet (Racing); Ford (Racing). <i>Extended Tip Applications.</i>
AR94	Chevrolet (Racing); Ford (Racing). <i>Extended Tip Applications.</i>
AR132	Chevrolet; Ford Small Block (Racing)
AR133	Chevrolet; Ford Small Block (Racing)
AR134	Chevrolet; Ford Small Block (Racing)
AR135	Chevrolet; Ford Small Block (Racing); 1974-69 Chevrolet
AR472	Buick V6 Aluminum Heads (Racing); Chevrolet Big Block 17 Degree Heads (Racing); Ford Aftermarket Heads (Racing); Oldsmobile Competition Engine (Racing)
AR473	Buick V6 Aluminum Heads (Racing); Chevrolet Big Block 17 Degree Heads (Racing); Ford Aftermarket Heads (Racing); Oldsmobile Competition Engine (Racing)
AR474	Buick V6 Aluminum Heads (Racing); Chevrolet Big Block 17 Degree Heads (Racing); Ford Aftermarket Heads (Racing); Oldsmobile Competition Engine (Racing)
AR2592	Chevrolet Big Block (Racing); Chrysler HEMI (Racing)
AR2593	Chevrolet Big Block (Racing); Chrysler HEMI (Racing)
AR2594	Chevrolet Big Block (Racing); Chrysler HEMI (Racing)
AR3910	Chevrolet Big Block (Racing); Chrysler HEMI (Racing)
AR3911	Chevrolet Big Block (Racing); Chrysler HEMI (Racing)
AR3931	Chevrolet Big Block (Racing); Chrysler HEMI (Racing)
AR3932	Chevrolet Big Block (Racing); Chrysler HEMI (Racing)
AR3933	Chevrolet Big Block (Racing); Chrysler HEMI (Racing)
AR3934	Chevrolet Big Block (Racing); Chrysler HEMI (Racing)
AR3935	Chevrolet Big Block (Racing); Chrysler HEMI (Racing)
AR4132	Bimota, Buell, Ducati, Kawasaki (Racing)
AR4133	Bimota, Buell, Ducati, Kawasaki (Racing)
AR4152	Aprilia, Bimota, BMW, Buell, Cagiva, Ducati, Harley Davidson, Honda, Husaberg, Husqvarna, Kawasaki, KTM, Moto Guzzi, Suzuki, Triumph, Yamaha (Racing)
AR4153	American Dirt Bike, Aprilia, ATK, Bimota, BMW, Cagiva, Can-Am, Ducati, Gas Gas, Honda, Husqvarna, Kawasaki, KTM, S & S Motors, Suzuki, Triumph, Yamaha (Racing)
AR5624	Aprilia (Racing)
HIGH PERFORMANCE PLUGS / BOUGIES À HAUT RENDEMENT / BUJÍAS DE ALTO RENDIMIENTO	
AR23	1963 Chevrolet; 1974 Dodge; 1986-83 Pontiac
AR24	1987-85 Chevrolet; 1971-70 Chevrolet; 1970 Chevrolet/GMC Truck; 1971-70 Ford; 1970 Mercury; 1987-85 Pontiac
AR25	1987-84 Buick; 1974-73 Buick; 1995-94 Chevrolet; 1985 Chevrolet; 1971-70 Chevrolet; 1995-80 Ford; 1975-70 Ford; 1993-91 Mercury; 1975-70 Mercury; 1985 Pontiac
AR103	1997 Jaguar; 1990-89 Pontiac
AR764	2002-92 Ford; 1986-79 Ford; 2002-94 Mercury; 1987-86 Mercury; 1987 Merkur
AR3923	2002-99 Acura; 1995-94 Alfa Romeo; 1994-90 Aston Martin; 2002-00 Audi; 1997-91 BMW; 1998-95 Chrysler; 2002-96 Dodge; 1998-95 Eagle; 1997-96 Honda; 1999-91 Mitsubishi; 1997-95 Nissan; 1999-95 Plymouth; 1998-94 Porsche; 2002-95 Toyota; 2002-92 Volkswagen
AR3924	2002-00 Acura; 1995-94 Acura; 2001-00 Aston Martin; 2002-00 BMW; 1996-94 BMW; 1992-90 Chevrolet; 2000-97 Chrysler; 1996-91 Dodge; 1995-90 Ford; 1993 Jaguar; 2002-00 Mazda; 1999-95 Mitsubishi; 1998-90 Nissan; 1990 Porsche; 1998-86 Toyota; 1999-92 Volkswagen

Important: Applications in this section are to be used as a guide only. For the most part, the application recommendations are based on original equipment specifications. Engine modifications and the type of service can cause wide variations in the actual heat ranges which are required.

Important : Ne considérer les applications figurant dans cette section qu'à titre indicatif. La plupart des recommandations sont fonction des spécifications de l'équipement d'origine. Les modifications apportées au moteur et le type d'utilisation des bougies peuvent influencer très sensiblement sur les plages thermiques requises.

Importante: Las aplicaciones que figuran en esta sección deberán utilizarse como guía solamente. En su mayoría, las recomendaciones se basan en especificaciones del equipo original. Las modificaciones hechas al motor y el tipo de servicio pueden afectar en gran medida los grados térmicos requeridos.

Racing Engine Heat Range Chart

Tableau des températures des bougies pour moteurs de course

Tabla de grado térmico para motores de carrera

THREAD SIZE & REACH	HEX	HEAT RANGE	STANDARD (NON-RESISTOR)	STANDARD (RESISTOR)	POWER TIP (NON-RESISTOR)	POWER TIP (RESISTOR)	SPECIALIZED ENGINES	
MOTORCYCLE								
10mm 3/4"	5/8"	HOT						
		COLD					AR5624 ^{2399, 9520}	
12mm 3/4"	5/8"	HOT					4164	
		COLD	AR4133		AR4153		4163	
			AR4132		AR4152		4132/4162	
TOP FUEL DRAGSTER & FUNNY CAR								
14mm 3/4"	13/16"	HOT		AR5384 ^{9521, 9522}				
		COLD				AR5383		
CHEVROLET – with Standard Reach; CHRYSLER – Wedge V8								
14mm 3/8"	13/16"	HOT		303		85		
				353		AR73		
		COLD				AR72		
				292				
CHEVROLET – Big Block; CHRYSLER – HEMI; PORSCHE AND MOST IMPORTS – Specialized Engines								
14mm 3/4"	5/8"	HOT				AR3924/3924		
				AR3935			AR3923/3923	
				AR3934		AR3911		
		COLD		AR3933		AR3910		
				AR3932				
				AR3931				
14mm 3/4"	13/16"	HOT		404				
						64		
					403	AR53	63	4055
		COLD			402	AR52	62	4054
				AR2594/2594		AR51		4063
				AR2593		AR50		4062
		AR2592				4051		
CHEVROLET – Big Block; OLDSMOBILE, FORD – Using Tapered Seat Plugs								
14mm (Tapered Seat) .708" Full Thread	5/8"	HOT				AR764 ⁸³⁰⁹ /764 ⁸³⁰⁹		
						AR103/103		
						AR94		
		COLD		AR474		AR93		
				AR473		AR92		
				AR472				
FORD, CHEVROLET – Small Block, Using Tapered Seat Plugs								
14mm (Tapered Seat) .460"	5/8"	HOT				AR25/25		
				144		AR24/24		
				AR135		AR13	AR23/23	
		COLD		AR134		AR12		
				AR133				
				AR132				
		AR131						
FORD – Large Block, 352, 390, 406, 427, 429 C.I.D. Engines – Using Tapered Seat Plugs								
18mm 1/2"	13/16"	HOT				45		
		COLD		124				
					AR33			
					AR32			
VOLKSWAGEN – Formula Vee and Others⁹⁵¹⁹								
14mm .472"	13/16"	HOT	414		275			
		COLD					4093	
			411				4092	

²³⁹⁹ Resistor ⁸³⁰⁹ Half Thread ⁹⁵¹⁹ .472" and 1/2" reach plugs should not be interchanged in racing engines
⁹⁵²⁰ Surface gap ⁹⁵²¹ Long pilot ⁹⁵²² .843" Thread reach

Racing Cross Reference Chart

Tableau comparatif des bougies de compétition

Tabla de interreferencia de bujías de competición

Racing Plug Number	Old Racing Plug Number	Champion	NGK
AR12	12	RV9YC	R5674-7
AR13	13	RV9YC	R5674-6
AR23	–	RV9YC	BPR6FS
AR24	–	RV12YC	BPR6FS
AR25	–	RV15YC4	UR4
AR32	32	RF9YC	AP8FS
AR33	33	RF9YC	AP7FS
AR50	50	N59YD	R5672A-10
AR51	51	N61YD/N6YC	R5672A-9
AR52	52	N63YD/N7YC	R5672A-8
AR53	53	N9YC	BP6ES
AR72	72	J12YC	R5670-7
AR73	73	J12YC	R5670-6
AR92	92	S57YC	R5724-10
AR93	93	S59YC	R5724-9
AR94	94	S61YC	R5724-8
AR103	–	RS9YC	BPR6EFS/TR6
–	113	RF10C	AR6FS
–	131	V55C	R5673-10
AR132	132	V57C	R5673-9
AR133	133	V59C	R5673-8
AR134	134	V63C	R5673-8
AR135	135	V63C	R5673-7
–	136	RV8C	R5673-6
–	393	N3C	R5671A-7
AR472	472	S57C	B9EFS
AR473	473	S59C	B9EFS
AR474	474	S61C	B8EFS
AR764	–	RS12YC	TR5
AR2592	2592	C59	R5671A-10
AR2593	2593	C61	R5671A-9
AR2594	2594	N2C	B9ES
AR3910	3910	C59YC	R5672A-9
AR3911	3911	C61YC	R5672A-8
AR3923	–	RC9YC	BKR6E
AR3924	–	RC12YC	FR5
AR3931	–	C55C	R5671A-11
AR3932	3932	C57CX	R5671A-10
AR3933	3933	C59CX	R5671A-9
AR3934	3934	C61CX	R5671A-8
AR3935	–	C63C	R5671A-7
AR4132	–	–	D8EA
AR4133	–	–	D7EA
AR4152	–	RA4HC	DP9EA
AR4153	–	RA6HC	DP8EA
AR5624	–	–	R0045Q-10
–	4113	–	BP6HS
–	4114	L87YC	BP6HS

Understanding Heat Range / Gamme thermique / Grado termico

Why is Heat Range Critical?

It is the measure of how fast the spark plug tip dissipates combustion heat. It must do this in a controlled manner that will:

1. Stay cool enough to avoid pre-ignition and/or electrode destruction.
2. Run hot enough to burn off combustion deposits that would otherwise collect at the firing tip.
3. Adapt to specific engine characteristics and widely varying driving/load conditions.

Pourquoi les gammes thermiques sont-elles si importantes?

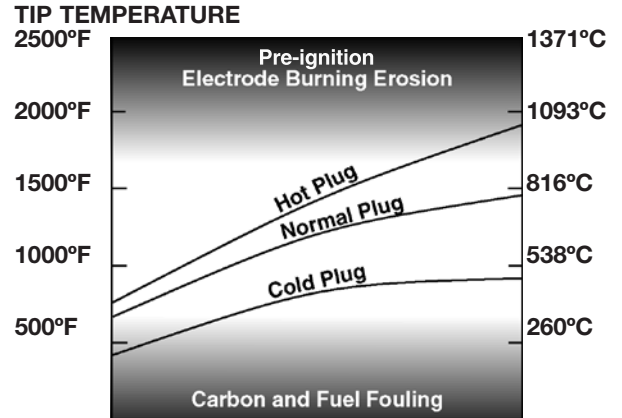
Les gammes thermiques indiquent la vitesse à laquelle l'extrémité d'une bougie dissipe la chaleur de combustion. La transmission de la chaleur doit se faire de façon à ce que la bougie:

1. Reste assez froide pour éviter l'allumage prématuré et/ou la destruction de l'électrode.
2. Atteigne un degré de chaleur assez élevé pour brûler les dépôts de combustion qui, autrement, s'accumuleraient à son extrémité.
3. Puisse s'adapter aux caractéristiques spécifiques du moteur et à tous les types de conduite et à toutes les charges.

¿Por qué el grado térmico es tan importante?

El grado térmico indica la rapidez con que la punta de la bujía disipa el calor de combustión. La disipación debe hacerla de una manera controlada para:

1. Permanecer bastante fría para evitar el encendido prematuro y/o la destrucción del electrodo.
2. Lograr un calor bastante elevado para quemar los depósitos de combustión que de otra manera se acumularían en la punta de encendido.
3. Adaptarse a las características específicas del motor y las distintas condiciones de conducción y de carga.



Idle	Vehicle Speed	Full Throttle
Marche au Ralenti	Vitesse du Véhicule	Conduite à Pleins Gaz
Ralentí	Velocidad del vehículo	Acelerador a fondo

Each engine has different temperature characteristics; typical plug temperature ranges are illustrated above.

Tous les moteurs fonctionnent à des températures différentes. Les gammes de température types sont illustrées ci-dessus.

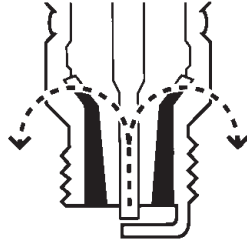
Cada motor funciona a temperaturas diferentes. Los rangos de temperatura de la bujía se ilustran más arriba.

Understanding Heat Range / Gamme thermique / Grado termico

The shorter the path, the faster the heat is dissipated and the cooler the plug.

Plus la distance est courte, plus la chaleur se dissipe rapidement et plus la bougie est froide.

Cuanto más corta la trayectoria, más rápida la disipación del calor y más fría la bujía.



Heavy Loads High Speeds

SHORT Insulator Tip
Fast Heat Transfer
LOWER Heat Range
COLD PLUG

Charges Lourdes Vitesse Rapides

Les BOUGIES FROIDES, dont la gamme de conductibilité thermique est PLUS BASSE, ont une extrémité ou tête d'isolateur COURTE et transmettent la chaleur rapidement.

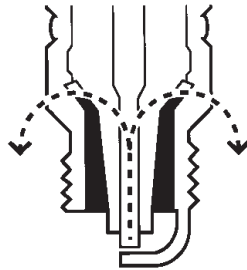
Cargas pesadas Altas velocidades

Punta del aislador CORTA
transferencia del calor rápida
Grado térmico MAS BAJO
BUJIA FRIA

The longer the path, the slower the heat is dissipated and the hotter the plug.

Plus la distance est longue, moins la chaleur se dissipe rapidement et plus la bougie est chaude.

Cuanto más larga la trayectoria, más lenta la disipación del calor y más caliente la bujía.



Short Trip Stop-and-Go

LONG Insulator Tip
Slow Heat Transfer
HIGHER Heat Range
HOT PLUG

Extrémité Courte Conduite Marche/Arrêt

Les BOUGIES CHAUDES, dont la gamme de conductibilité thermique est PLUS HAUTE, ont une extrémité ou tête d'isolateur LONGUE et transmettent la chaleur plus lentement.

Punta corta Tráfico urbano

Punta del aislador LARGA
transferencia de calor lenta
Grado térmico MAS ALTO
BUJIA CALIENTE

How is Heat Range Engineered?

Heat is conducted away from the firing tip through the (1) insulator to (2) the spark plug shell to (3) the cylinder head.

Thus, heat ranges are primarily controlled by the length of the insulator through which the heat must travel before escaping to the cylinder head.

Other factors effecting heat range are the thermal characteristics of the insulator and the bond of the insulator to the shell.

Comment concevons-nous les Gammes Thermiques?

La chaleur est produite à l'extrémité de la bougie, puis passe par (1) l'isolateur, (2) le culot de la bougie et enfin (3) la culasse.

Ainsi, c'est la longueur de l'isolateur par lequel la chaleur doit passer avant de s'échapper par la culasse qui détermine dans un premier temps la gamme thermique.

Parmi les autres facteurs qui déterminent la gamme thermique, on citera les caractéristiques thermiques de l'isolateur et le lien formé entre l'isolateur et le culot de la bougie.

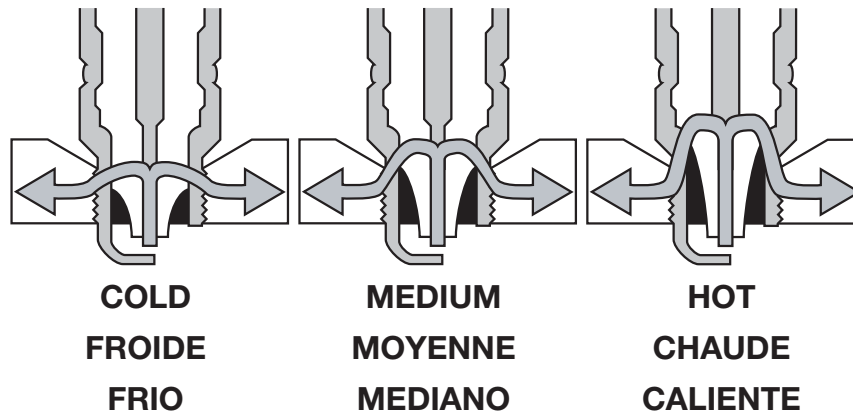
¿Cómo se conciben los grados técnicos?

El calor producido en la punta de la bujía pasa por (1) el aislador, (2) el cuerpo y termina (3) en la culata.

Así, es la longitud del aislador por el cual debe pasar el calor antes de escapar a la culata la que determina los grados térmicos.

Otros factores que afectan el grado térmico son las características térmicas del aislador y la unión formada entre el aislador y el cuerpo de la bujía.

Understanding Heat Range / Gamme thermique / Grado termico



Selecting the Right Heat Range

Working closely with engine manufacturers, FRAM Group's Autolite® product engineers have developed plugs in many heat ranges to suit all engine applications. They range from COLD through MEDIUM; and HOT to EXTREMELY HOT. Rules for selecting the correct plug are to follow manufacturer specifications as listed in this catalog.

Sélection de la Gamme Thermique

En étroite collaboration avec les fabricants de moteurs, les ingénieurs de produits Autolite® FRAM Group ont développé des bougies capables de fonctionner dans des plages thermiques très variées et convenant aux différents types de moteur. On peut choisir parmi des bougies dont la gamme varie de FROIDE à MOYENNE et de CHAUDE à TRÈS CHAUDE. Pour sélectionner la bougie adéquate, il suffit de suivre les recommandations du fabricant telles qu'elles figurent dans le présent catalogue.

Selección del grado térmico adecuado

Trabajando estrechamente con los fabricantes de motores, los ingenieros del producto Autolite® de Fram Group han desarrollado bujías de muchos intervalos de temperaturas, idóneos para todas las aplicaciones de motores. Los grados varían de FRIO a MEDIANO y de CALIENTE a MUY CALIENTE. Para seleccionar la bujía correcta, se debe seguir las especificaciones del fabricante tal como figuran en este catálogo.