NGK Spark Plug Codes

Design Symbols: Spark Plugs

Thread Diameter

- A: **18 mm**
- B: **14 mm**
- C: **10 mm**
- D: **12 mm**
- J: **12 mm**

Thread Reach

- E: **19 mm (3/4")**
- EF: **Tapered Seat 17.5 mm (.708" Reach)**
- FS: **Tapered Seat 10.9 mm (.460")**
- H: **12.7 mm (1/2")**
- EH: **Partial thread 19 mm (3/4" Total Reach) 12.7 mm (1/2" Total Thread)**
- L: **11.2 mm (7/16")**
- S: **9.5 mm (3/8") Reach**
- Z: **21 mm**

NO SYMBOL:

18mmø = 12 mm Reach

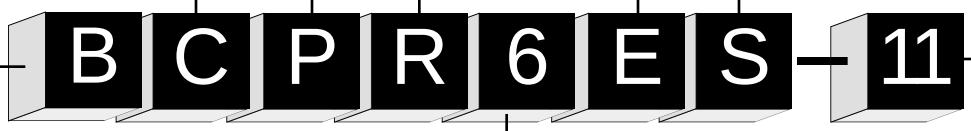
14mmø = 9.5 mm (3/8") Reach

Firing End Construction

- A: Special Design
- B: Special Design
- C: Low Angle Ground Electrode
- CM: Compact type, low angle ground electrode
- E: V-Grooved center electrode (14mm only) 1.5mm Insulator
- ES: Standard 3/4" Thread Reach (2.5mm) center electrode
- F: Tapered Seat
- G: Fine wire nickel alloy center electrode
- G-G: Copper core ground electrode
- GV: Gold-palladium center electrode Special Construction of V-Type. Racing use
- K: 2-Ground electrodes
- L: Half heat range, (See spec. chart)
- LM: Compact type for Lawn Mower
- M: 2-Ground electrodes For Mazda Rotary Eng.
- N: Special Side electrode
- P: Premium Platinum
- Q: 4-Ground electrode
- R: Special Ground electrode
- S: Standard 2.5mmø center electrode
- T: 3-Ground electrode
- U: Semi-surface discharge
- V: Fine wire gold palladium center electrode
- VX: High performance platinum
- W: Tungsten electrode
- X: Booster gap
- Y: V-Grooved center electrode (14mm only) 2.5mm Insulator
- Z: Thick 2.9mmø center electrode

Construction (ONE OR MORE LETTERS MAY BE COMBINED)

- C: Hex Size 5/8"
- K: Hex Size 5/8" Projected Tip (ISO)
- M: Compact Type
- P: Projected Insulator Type
- R: Resistor Type
- U: Surface or Semi-Surface Discharge Type
- Z: Inductive Resistor



– WIDE GAP –

- 8 **0.8mm (.032")**
- 9 **0.9mm (.036")**
- 10 **1.0mm (.040")**
- 11 **1.1mm (.044")**
- 13 **1.3mm (.052")**
- 14 **1.4mm (.055")**
- 15 **1.5mm (.060")**
- 20 **2.0mm (.080")**

Heat Rating Numbers

2 Hot

↕

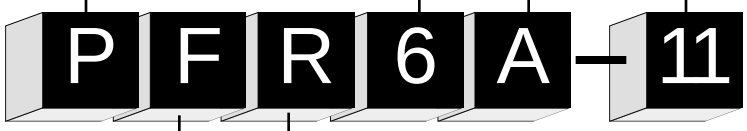
11 Cold

Firing End Contruction

A, B, C...: Special Design

Plug Type

- I: Iridium Platinum
- L: Thread Reach 26.5mm
- P: Premium Platinum
- Z: Extended Gap



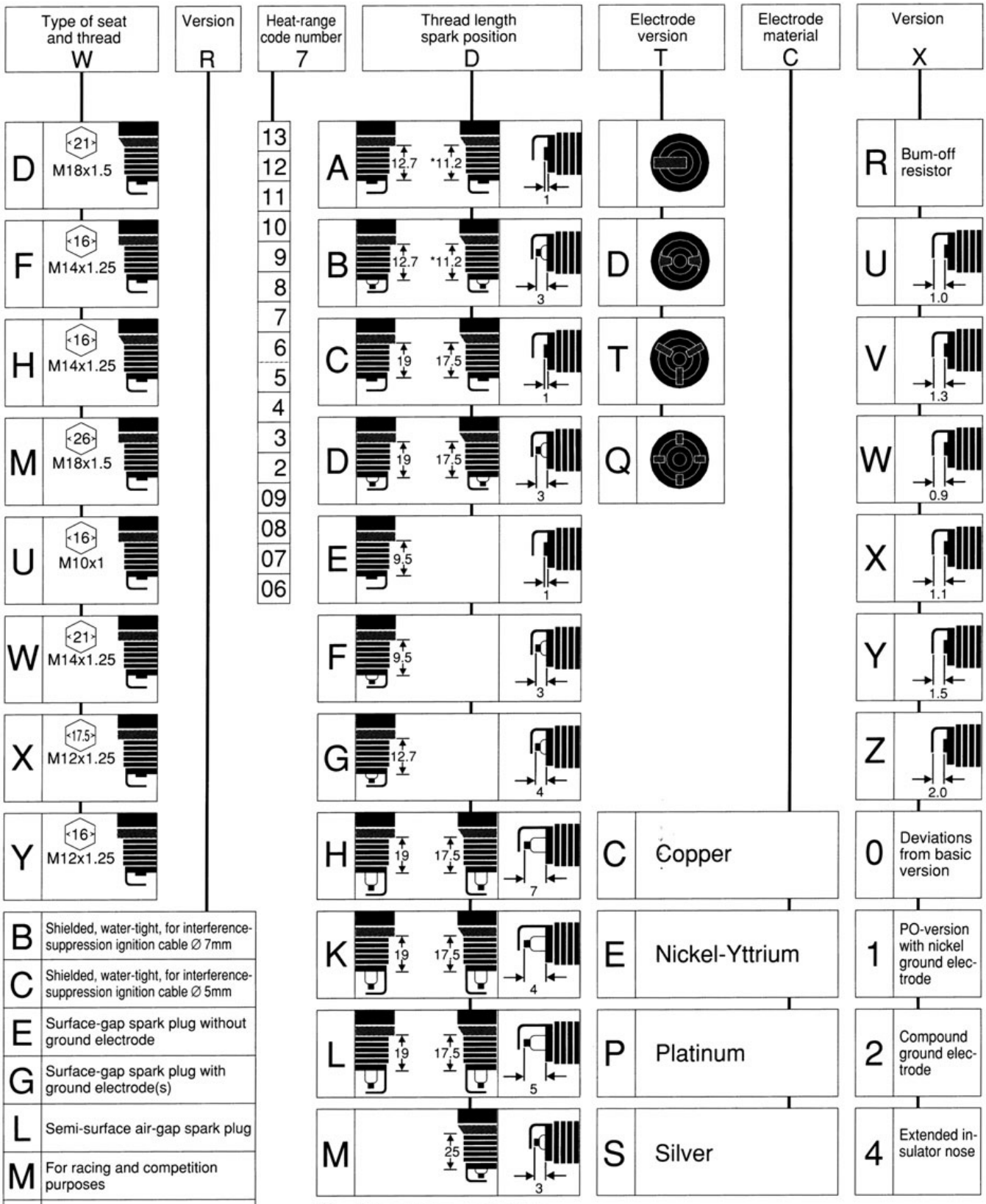
Metal Shell Size

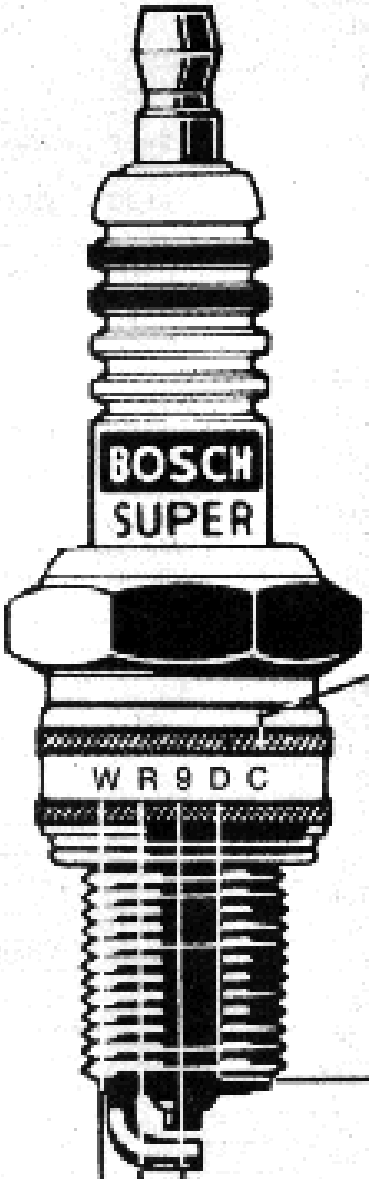
- F: ø 14, 19mm (3/4") Reach, 16mm (5/8") Hex.
- G: ø 14, 19mm (3/4") Reach, 20.6mm (13/16") Hex.
- J: ø 12, 19mm (3/4") Reach, 19mm Hex.
- M: ø 10, 19mm (3/4") Reach, 16mm (5/8") Hex.
- T: Tapered Seat ø 14, 17.5mm Reach, 16mm (5/8") Hex.
- PTR5A-13: ø 14, 25mm Reach, 16mm (5/8") Hex.

Construction

- R: Resistor

Designation codes for Bosch spark plugs (dimensions in mm)





Numbering System Explanation

Electrode:

- **C** Copper Core Center Electrode
- **D** 2 Ground Electrode
- **P** Platinum Electrode
- **R** Burn-off Resistor
- **S** Silver Electrode
- **T** 3 Ground Electrodes
- **V** Wide Gap (.052"/1.3mm)
- **W** Wide Gap (.036"/0.9mm)
- **X** Wide Gap (.044"/1.1mm)
- **Y** Wide Gap (.060"/1.5mm)
- **Z** Wide Gap (.080"/2.0mm)

See Gapping Spec's on pages 9 & 10.

0(zero), **1**, **2** Special Shell or Electrodes

Thread Reach:

- **A** Thread Reach .460" Standard Electrode
- **B** Thread Reach .460" Extended Tip Electrode
- **C** Thread Reach 3/4" Regular Electrode
- **D** Thread Reach 3/4" (.708" with tapered seat) Extended Tip
- **E** Thread Reach 3/8" Regular Electrode
- **F** Thread Reach 3/8" Extended Tip Electrode
- **G** Thread Reach .460" Extra Extended Tip Electrode
- **H** Thread Reach 3/4"
- **H0** Thread Reach .840" Tapered Seat, Special Extended Tip, Full Thread
- **L** Thread Reach 3/4" (.708" with tapered seat) Extra Extended Tip
- **L0** Thread Reach .840" Tapered Seat Special Extended Tip, Half Thread

Heat Range (2=coldest, 11=hottest)

Special Types:

- **E** Surface Gap
- **R** Suppression Resistor
- **S** Mini-Plug

Thread:

- **D** 18mm Thread Diameter Tapered Seat
- **F** 14mm Thread Diameter (5/8" Hex)
- **H** 14mm Thread Diameter Tapered Seat
- **M** 18mm Thread Diameter
- **U** 10mm Thread Diameter
- **W** 14mm Thread Diameter
- **X** 12mm Thread Diameter (11/16" Hex)
- **Y** 12mm Thread Diameter (5/8" Hex)

Champion Sparkplug Codes

R V 15 Y C 4

RESISTOR

Letter	Description
B	Standard Height
C	Bantam Height
D	Bantam Height
E	Shielded 5/8"—24
G	1"—20 Female Connector
H	Shielded 3/4"—20
K	Resistor
M	Shielded 5/8"— 24 Ordnance
Q	Resistor—CDI
R	Resistor
S	Shielded 11/16" —24 Whitworth
T	13/16"—20 Thread Above Hexagon
U	Auxiliary Gap
X	Resistor

SHELL DESIGN

Letter	Thread Size	Reach	Hex
A	12mm	3/4"	11/16" or 18mm
B	18mm	13/16"	7/8"
C	14mm	3/4"	5/8"
D	18mm	1/2"	7/8"
E	14mm	1.0" Taper Seat	5/8"
F	18mm	.460" Taper Seat	13/16"
G	10mm	.750"	5/8"
GC*	7/8"-18	All	7/8"
GM*	18mm	All	7/8"
H	14mm	7/16"	13/16"
J	14mm	3/8"	13/16"
K	18mm	All	1"
L	14mm	1/2" or .472"	13/16"
M	18mm	1/2"	7/8" or 11/16"
N	14mm	3/4"	13/16"
P	12mm	.492"	11/16"
R	12mm	3/4"	3/4" or 11/16"
S	14mm	.708" Taper Seat	5/8"
S	1-1/8"	5/8"	1"
U	18mm	1-1/8"	7/8"
V	14mm	.460" Taper Seat	5/8"
W	7/8"-18	All	15/16" or 1
X	14mm	.500"	5/8"
Y	10mm	1/4"	5/8"
Z	10mm	.492"	5/8"

*1"-20 Female Connector

Letter	Thread Size	Reach	Hex
BL or V	14mm	.460" Taper Seat	5/8"
BN or S	14mm	.708" Taper Seat	5/8"
CJ	14mm	3/8"	3/4" or 13/16"
DJ	14mm	.325" Taper Seat	5/8"
DZ	10mm	.500" Taper Seat	5/8"
FN or C	14mm	.750" w/gasket	5/8"

HEAT RANGE/ APPLICATION

Ref.#	Description
1-25	Automotive, Small Engine & Ordnance
26-50	Aviation
51-75	Hi-Performance
75-99	Industrial & Special Applications

FIRING END DESIGN

Letter	Description
None or A	Conventional
B	Two Ground Electrodes
C	Copper Plus Design
D	Protruding Nose, Round Ground Electrode
E	.290" Core Nose Projection
F	Three Ground Electrode
G	Fine Wire—Semi-Precious Electrode
H	.030" Core Nose Projection
J	Cutback Ground Electrode, Includes Modified Gap
L	Skirted Shell Firing End .200" Core Nose
M	Projected Core Nose
N	Four Ground Electrode
P	Platinum Electrode
R	Push Wire
S	Single Ground Electrode at Side of Center Electrode
V	Surface Gap
X	Fine Wire
Y	Standard Projected Core Nose
Z	Skirted Shell
CC	Double Copper
*PP	Double Platinum
PEP	Double Platinum Projected
PLP	Double Platinum Extended Electrode
PMP	Double Platinum Projected
PYC	Single Platinum Projected
*PYP	Projected Double Platinum
WPC	Iridium/Platinum/Copper
WPCC	Iridium/Platinum/ Double Copper

*Includes Copper Plus Design

Letter	Description	Reach	Hex
BY	Multiple Ground Electrode w/Projected Core Nose		
CM	14mm (Special for Mopeds)	.472"	13/16"
GY	Fine Wire (Semi-precious Electrode) w/Projected Core Nose		
LM	14mm (Special for Lawn Mowers)	3/8"	13/16"
LY/E	Extended Electrode Gap & Core Nose Projection		

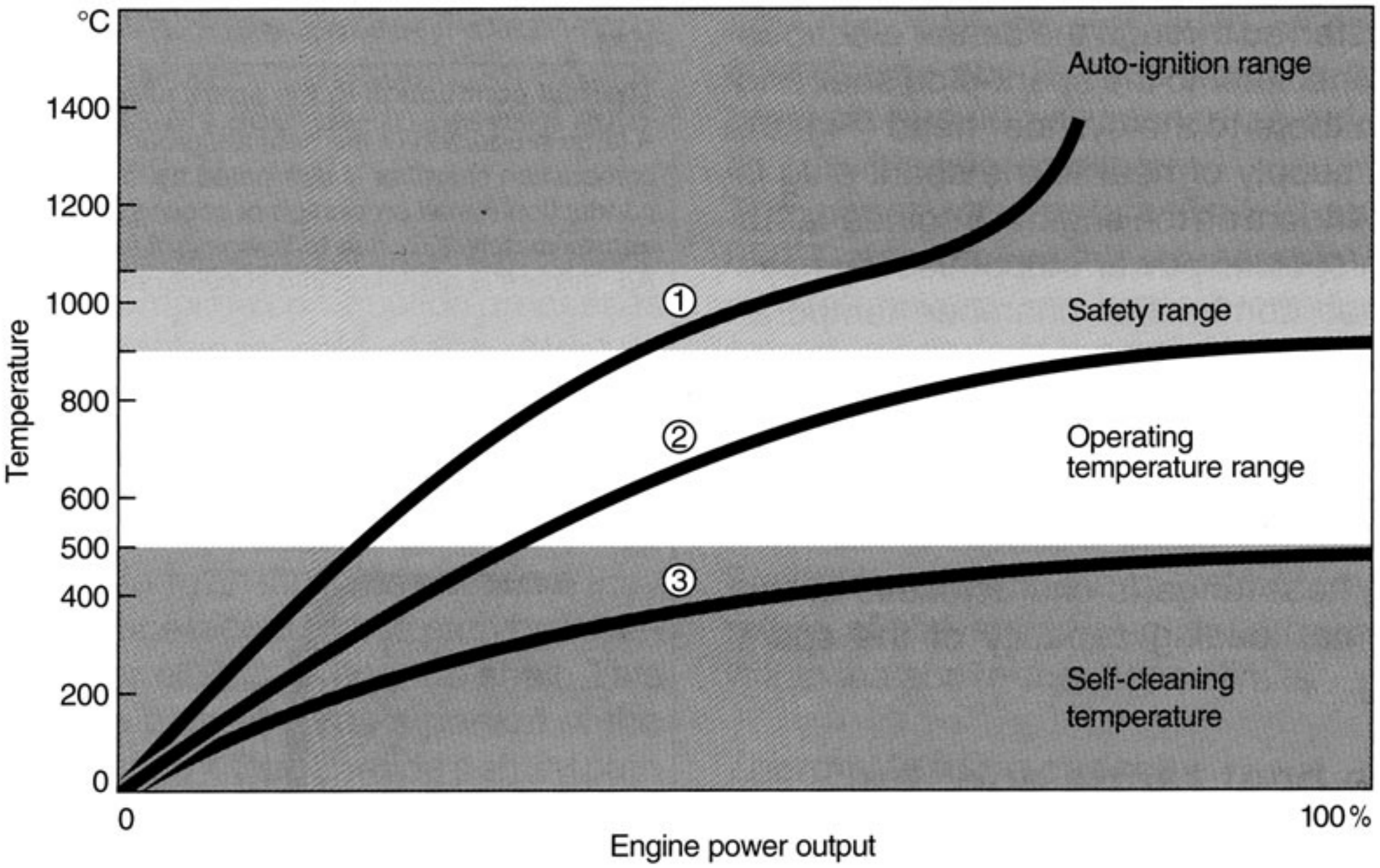
WIDE GAP DESIGNATION

No.	Description
4	Wide gaps required to meet Federal and California requirements.
5	
6	
8	

The sales symbol on a spark plug is composed of a basic "Heat Range" number with letters and numbers to indicate major features of the plug design. The charts above contain a detailed example of the Champion Sales Symbol.

Temperature curves of spark plugs with different heat-range code numbers

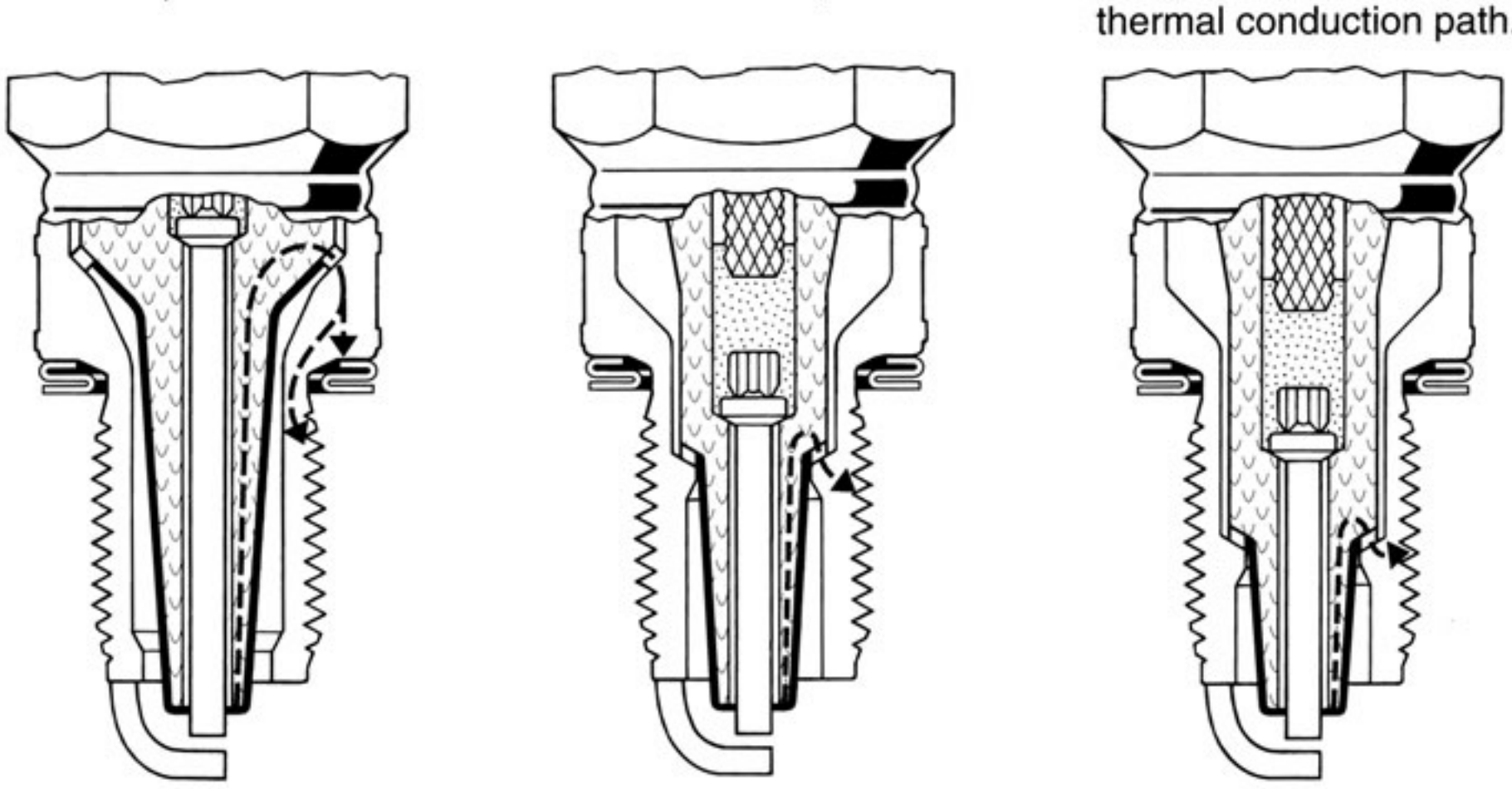
At full load in the same engine.



① Spark plug with high heat-range code number ("hot plug"). Large insulator nose area absorbs much heat, low heat dissipation.

② Spark plug with medium heat-range code number. Insulator nose area smaller than in "hot plug". Lower heat absorption, better heat dissipation.

③ Spark plug with low heat-range code number ("cold plug"). Smaller insulator nose area absorbs little heat. Very good heat dissipation through short thermal conduction path.



—— Heat-absorbing surface

---- Thermal conduction path