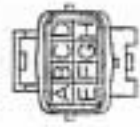


CORRECTION BETWEEN COLOR OF LEAD WIRE AND TERMINAL ARRANGEMENT



- | | |
|--------|-------------------------|
| COLLAR | CONNECT |
| ORANGE | HEATER + |
| YELLOW | HEATER - |
| BROWN | COMPENSATING RESISTANCE |
| BROWN | COMPENSATING RESISTANCE |
| | POWER GROUND |
| RED | 14 CELL + |
| WHITE | 14 CELL - |
| BLACK | 14 CELL - |

ABSOLUTE MAXIMUM RATINGS

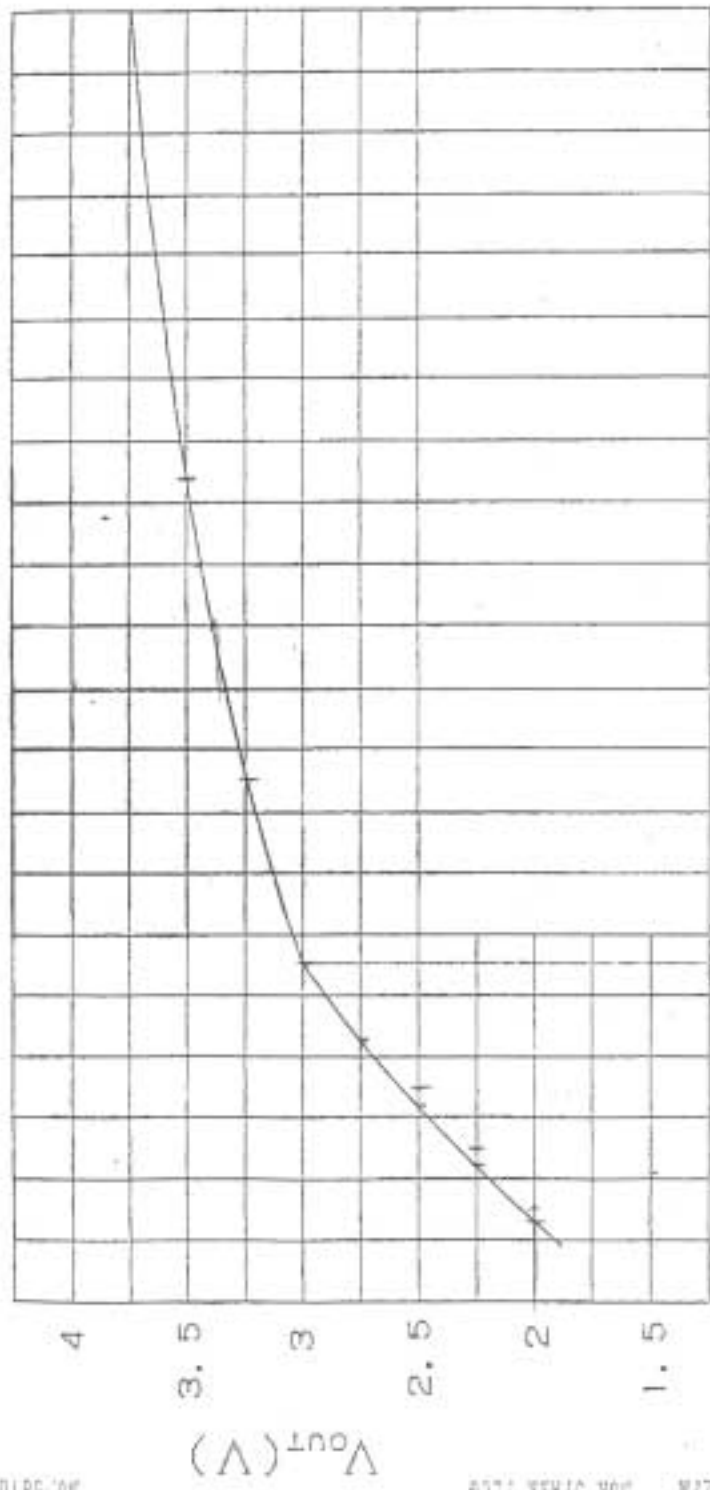
1. MAXIMUM HEAT. TEMP. : 550 °C
2. MAXIMUM RUBBER CAP TEMP. : 200 °C
3. CONNECTOR TEMP. : -20 °C to 170 °C
4. TENSILE STRENGTH OF LEAD WIRE : 80N
5. TIGHTENING TORQUE : 40 to 5 Nm
6. MAXIMUM PEAK ACCELERATION : 30G
7. DON'T LEAVE THE SENSOR INSTALLED TO EQUIPT SYSTEM WITHOUT OPERATING FOR LONG TIME.

MATERIAL		NGC SPARK PLUG CO. LTD. 日本特殊陶業株式会社	
SCALE	DATE	DESIGNED	CHECKED
1:1	1994.10.09	Y. Kawai	T. Yamada
REV. NO.		DATE	
11-1111-11		1994.10.09	

$$y = 2.0335x^4 - 16.526x^3 + 48.19x^2 - 56.722x + 28.674$$

TC-6000

GASOLINE : H/C RATIO 1.85, O/C RATIO 0
(A/F 14.57 : $\lambda = 1$)



TYPICAL A/F - V_{out}

NGK SPARK PLUG

~

~R!~It'!!K~TK NGK SPARK PWGS (U.S.A.), INC.

SPARK PLUGS 1KM-C-
39205 COUNTRY CLUB DRIVE SUITE C.30 FARMINGTON HILLS, MI 48331

No.5870

P :

3 / 8

TELEPHONE : (810) 489-0110
NEW PRODUCTION (810) 489-0110
FAX : (810) 489-0095

~gi~

QUQTA110NNO.100694 " "C'tY-!"

QUOTED PRICES ARE SUBJECT TO CHANGE

TO:

Dr. Stewart Prince

California State University Northridge Mechanical Eng. Dep[. , **18111** Nordhoff St. Nonhridge, CA 91330-0001

Phone: (818) 885-2496 Fax: (818) 885-2140

YOUR REPRESENTATIVE: MI. HirOyuki Ishiguro

NGK Spark Plugs (U.S.A.)~c.

39205 Country Club Dr., ~li~.30

FanningtonHiUs. J.fl48331'; Phone: (810) 489-0110 Fax: (810) 489-0095

We are pleased to submit this quotation for your consideration.

Terms: Delivery: FOB:

Part Number: Description : Price:

Part Number: Description. Price:

Part Number: Description: Price:

Net 30 Days

2.3 Months After Receipt ofPurchase Order Farn lington Hills, MI

UEGO Sensor (TL-7111-W1) Universal Exhaust Gas Oxygen Sensor \$600.00 (US) Each Sensor

UEGO Controller (TC-6000)

Universal Exhaust Gas Ox-ygen Sensor Control Unit \$400.00 (US) Each Sensor

UEGO Harness (TH-2009-W1)

Wire Harness for use with UEGO Sensor/Controller \$60.00 (US) Each Harness

We appreciate the opportunity to serve you. NGK SPARK PLUGS (U.S.A.), INC.

~~~ANFL-By: ..I\{ ~ **Hiroyuki Is ro, SupeM or**

Please Note: A UEGO set includes one controller, one sensor, and one wire harness. Total cost per set is \$1,060.00.

/mc

**1. Appearance, Connector**

**2. Basic Specification**

- Power: 10W to 10W & C
- Operating Temperature Range: -20°C to 100°C
- Storage Temperature Range: -20°C to 100°C

**3. I/O Specification**

- Control Output (AVest)
  - Output Voltage: 0V to 5.0V
  - Output Voltage Range: 0V to 5.0V
- Heating Current Output (IHeater)
  - Output Current Range: 0.15A to 0.9A
  - Output Voltage Range: -2V to 2V
  - Inrush Current at Smear: 10 Cells (10A)
- Output Voltage for Heater (VHeater)
  - Output Voltage Range: 0V to 5.0V
  - The method of controlling is half control.
- Smoothing Current for O<sub>2</sub> Reference Circuit (Vref)
  - Output Current Range: 0.15A to 0.5A
  - The method of controlling is half control.

**4. Control Specification**

- Smoothing Current
  - 4-1-1. The smoothing current is restricted to maintain the V<sub>ref</sub> voltage at 4.50V.
  - 4-1-2. When TC-5000 is attached, the V<sub>ref</sub> voltage is less than 1.1V, and after 10 seconds smoothing current is supplied to smogor.
- Control Output
  - TC-5000 controls the voltage at the following characteristic, using the 5870 Sensor TC-711-91 and 8500 wire harness TC-559-81 with fuel.
 

At 1000 RPM: Fuel = 3.0V  
Air (D = 20.98): Fuel = 4.5V

**Output Voltage Error**

- Correction Error: ±(Vout - 3) × 0.2 (V)
- Temperature Dependency: ± ± 0.2 (V)
- Dispersion of Assembly: ± ± 0.2 (V)
- In TC-5893

| A/F | V <sub>out</sub> (V) |
|-----|----------------------|
| 0   | 0.5                  |
| 5   | 1.5                  |
| 10  | 2.5                  |
| 15  | 3.5                  |
| 20  | 4.5                  |

|                |         |
|----------------|---------|
| <b>OUTPUTS</b> |         |
| Vest           | Vref    |
| Iheater        | Vheater |
| Iref           | Vsmogor |

|                                                         |           |            |           |
|---------------------------------------------------------|-----------|------------|-----------|
| SIGNAL                                                  | 10A 100ms | 0.5A 100ms | 10A 100ms |
| SIGNAL                                                  | pulse     | pulse      | pulse     |
| F. Measurement by Oscilloscope, DATA LOGGING CONTROLLER |           |            |           |
| TC-5000                                                 |           |            |           |

|        |      |          |      |
|--------|------|----------|------|
| SERIAL | DATE | PART NO. | REV. |
| DATE   | REV. | DATE     | REV. |

|                                   |              |
|-----------------------------------|--------------|
| MATERIAL                          |              |
| HIGK SPARK PLUG COLTB<br>日本碍子株式会社 | ASSEMBLY NO. |