

# HONDA

AMERICAN HONDA MOTOR CO., INC.

1919 Torrance Boulevard • Torrance, CA 90501-2746

(310) 783-2000

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SEP 28 1994

MOBILE SOURCE DIVISION

September 26, 1994

AHCERT-941506

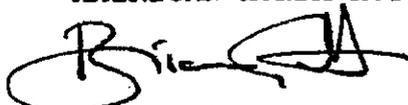
Mr. K. D. Drachand, Chief  
CALIFORNIA AIR RESOURCES BOARD  
Mobile Source Control Division  
9528 Telstar Avenue  
El Monte, CA 91731-2990

Dear Mr. Drachand:

Enclosed are the comments of Honda Motor Co., Ltd. regarding  
ARB's mail-out #94-35.

Yours truly,

AMERICAN HONDA MOTOR CO., INC.



Brian Gill  
Assistant Vice President  
Product Regulations Compliance, Certification

BG/llw

Enclosure(s)

**COMMENTS OF HONDA MOTOR CO., LTD.  
REGARDING CARB MAIL-OUT #94-35  
"UTILITY AND LAWN AND GARDEN EQUIPMENT ENGINES  
PROPOSED AMENDMENTS"**

We appreciate the opportunity to comment on ARB's proposed amendments. We understand and support ARB's efforts to improve California's air quality, and we do not oppose regulations to achieve these goals which are technically feasible and cost effective. We commented previously in response to mail-out 94-24 and find that mail-out 94-35 has not been amended to reflect those comments. Therefore, we are restating them.

**CALIFORNIA EXHAUST EMISSION STANDARDS AND TEST PROCEDURES**

Part II, Section 2. Engine Test Set-up: Exhaust Gas Analytical System: Engine Parameters.

Item (d)(2)

Generally, the ULG engines do not have such a long tail pipe as shown in figure 2-1 of "Part II. Raw Gas Method Test Procedures" in ARB Mail-Out #94-24.

Honda would like to use the additional tail pipe because;

1. Basically, the exhaust gas regulations are intended to control the exhaust gas emitted from the engines, equipment or vehicles,
2. The exhaust gases in the muffler are not necessarily equivalent to the gases actually emitted from an engine's tail pipe,
3. We must avoid ingesting air from the atmosphere due to pressure pulsation in the exhaust,
4. Some small ULG engines, such as the Honda G100K1, have no exhaust conduit and no tailpipe (see attached drawing),

5. It is difficult to locate the sampling probe directly in the muffler of small ULG engines because it is too small,
6. If we locate a sampling probe in such a small muffler, the air from the atmosphere may be ingested into the sampling probe due to pressure pulsations in the exhaust and due to the small muffler size,
7. If we choose to use the mixing chamber, we will have to prepare mixing chambers of various sizes for our products depending upon engine displacement, and
8. Almost all 2 stroke engines for string trimmers would have the same problems mentioned above as G100K1.

From the reasons described above, Honda considers that the use of an additional tail pipe is reasonable and that ARB should renumber 2.(d)(2)(ix) of "Part II. Raw Gas Method Test Procedures" in attachment B of ARB Mail-out #94-24 to 2.(d)(2)(x) and add the following sentences as 2.(d)(2)(ix).

(ix) The exhaust sampling probe shall be located at the optional additional tail pipe when an additional tail pipe is used in the test set up. The exhaust sample probe shall not be so close to the exhaust outlet as to ingest air from the atmosphere due to pressure pulsations in the exhaust.

In addition to that, the long tail pipe in Figure 2-1 should be drawn by dotted line and should be identified as "(optional)".

#### Part II, Section 12. Engine Test Procedure

##### Item (b)(2)(vii)

ARB allows manufacturers to use a substitute torque value at the 10-percent torque mode as follows.

"..The minimum torque capability of an engine may be substituted for the 10-percent value when a 10-percent value of the maximum engine torque output is not attainable".

Some small engines cannot drive the dynamometer when operated at idle. CARB should avoid this condition in the test procedure. The requirements should be modified to add the following after the above sentence.

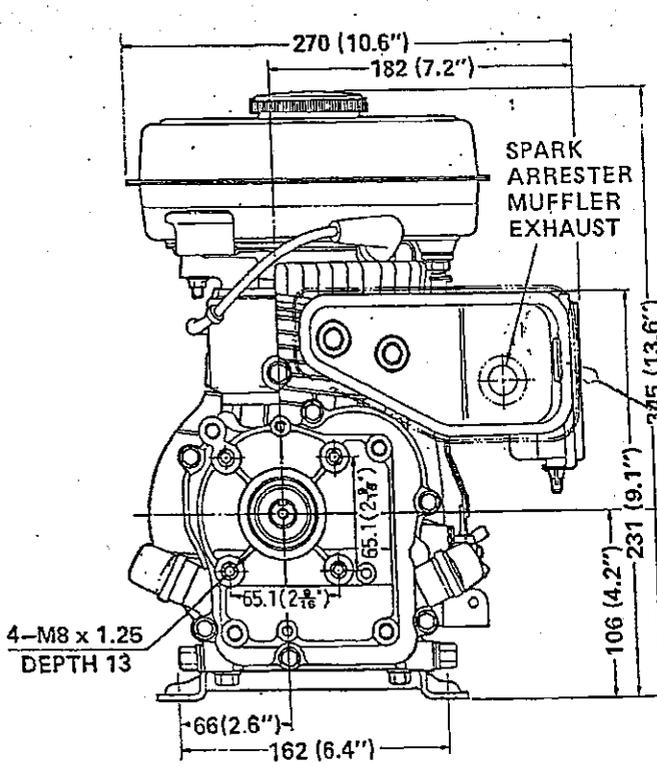
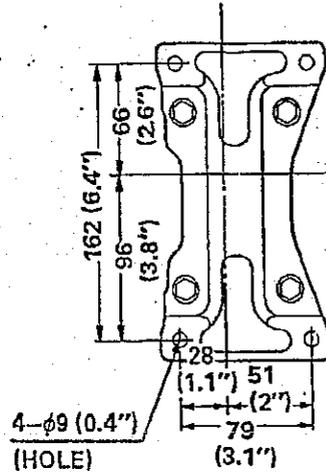
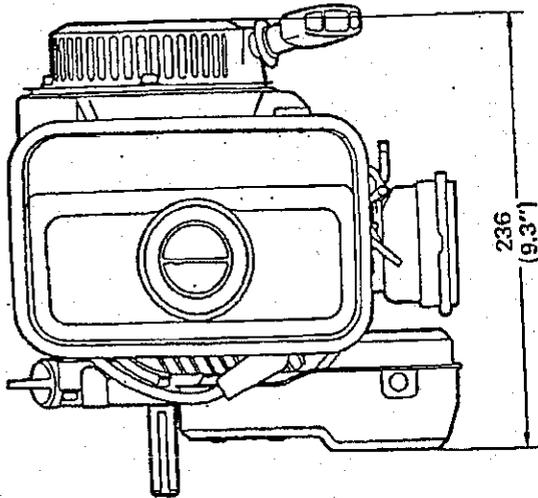
"..An engine may be uncoupled from the dynamometer during the idle mode tests".

# HONDA G100K1

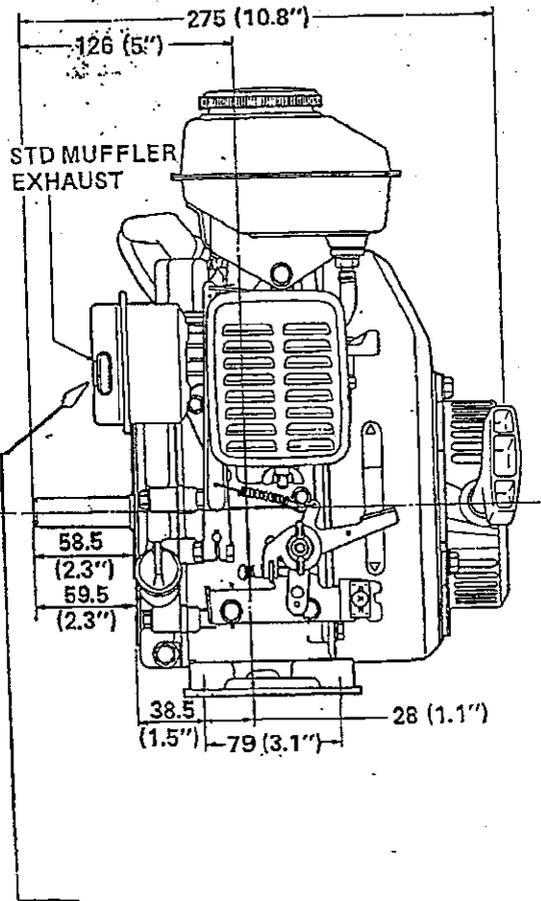
(ATTACHMENT TO HONDA COMMENTS ON CARB MAILOUT #94-35)

## 3. DIMENSIONAL DRAWINGS

Unit : mm (in)



4-M8 x 1.25  
DEPTH 13



EXHAUST OUTLET

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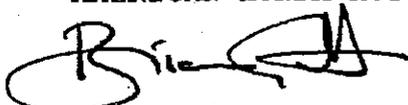
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Item (d) (2)

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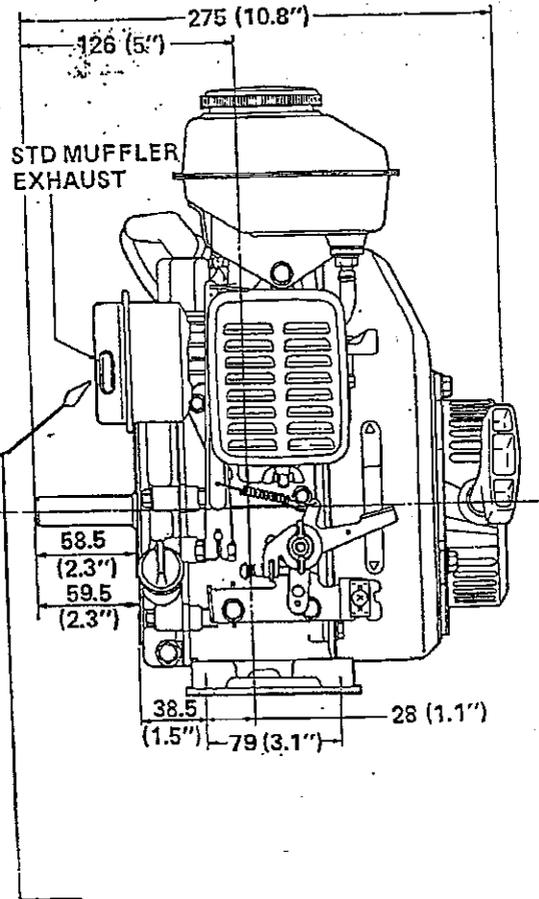
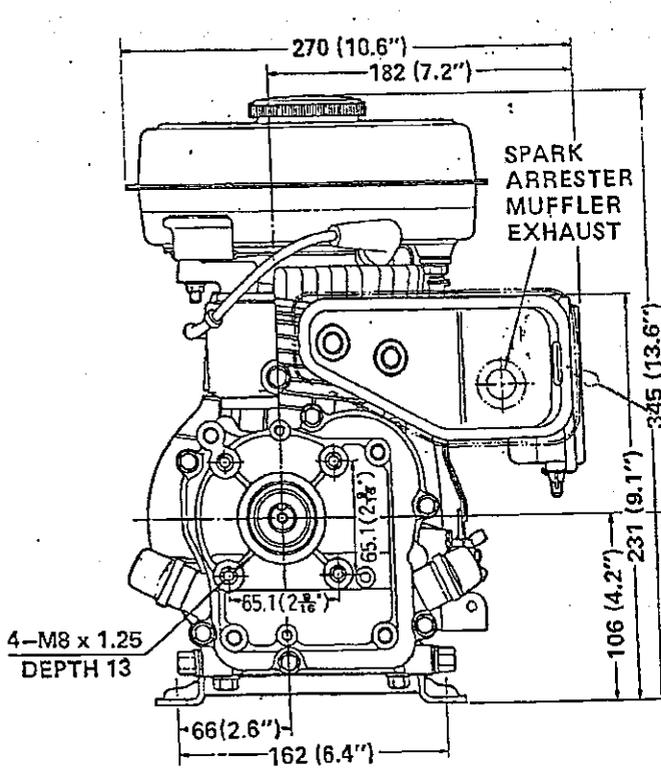
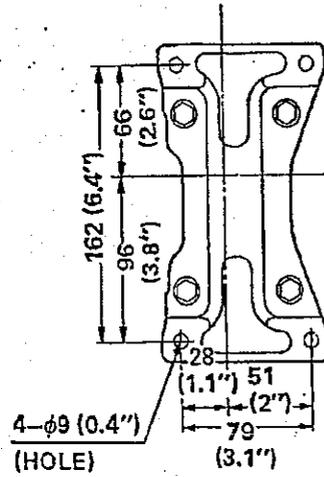
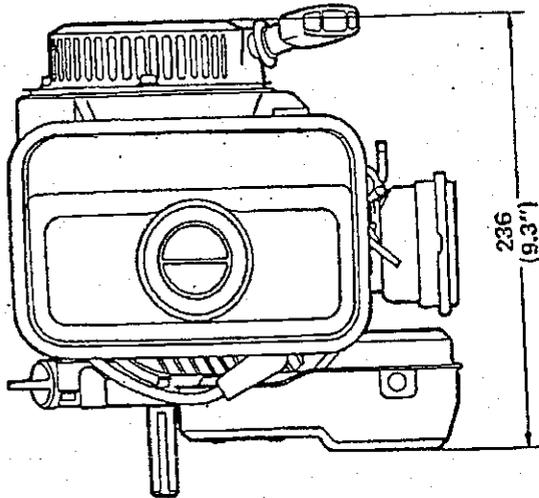
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# HONDA G100K1

(ATTACHMENT TO HONDA COMMENTS ON CARB MAILOUT #94-35)

## 3. DIMENSIONAL DRAWINGS

Unit : mm (in)



EXHAUST OUTLET