

[Manufacturer's name] certifies the following:

The fill pipes and access zones for the models covered by this application shall be in compliance with the requirements specified by the Air Resources Board's "Specifications for Fill Pipes and Openings of Motor Vehicle Fuel Tanks" adopted March 19, 1976 and amended June 8, 1977 (Title 13 California Administrative Code, Section 2290) and shall not be obstructed in any manner by bumpers, body parts, body trims or accessories that are either factory or dealer installed.

AIR RESOURCES BOARD APPLICATION FORMAT  
FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer \_\_\_\_\_

Engine Family \_\_\_\_\_

Vehicle Model(s) \_\_\_\_\_  
(use extra sheets if required)

The nomenclature and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of Motor Vehicle Fuel Tanks", amended December 7, 1982.

<u>General Specification</u>	<u>ARB Specification</u>	<u>Manufacturer Specification*</u>
(1) Angle $\alpha$ in degrees	$-10^\circ < \alpha < 20^\circ$	_____
(2) Spill Prevention in degrees (angle between centerline of test spout in its resting position and the horizontal plane).	$30^\circ$ (MIN)	_____
(3) Test nozzle penetration of restrictor	2.25 CM (MIN)	_____
(4) Angle $\beta$ in degrees	none	_____

Fill Pipe Specification

(1) Fill pipe face surface in TIR.	0.025 CM (MAX)	_____
(2) Fill pipe face outside diameter.	5.75 CM (MAX)	_____
(3) Internal locking lip in degrees of the inside circumference	$100^\circ$ (MIN)	_____
(a) degrees extending each side of reference plane.	$35^\circ$ (MIN) each side	LS** _____ RS** _____
(4) Height of lip measured from fill pipe inside wall; or height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 CM.	0.25 CM (MIN)	_____
(5) Depth of lip (D) in centimeters	$0.4 \leq D \leq 1.3$	_____

Offset

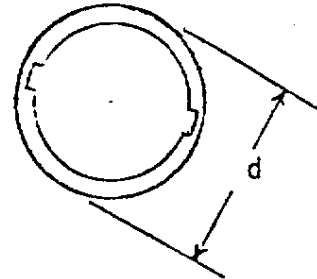
Offset A	none	_____
Offset B	none	_____

\*dimension should include adverse tolerance condition  
\*\*LS = Left side of reference plane  
\*\*RS = Right side of reference plane

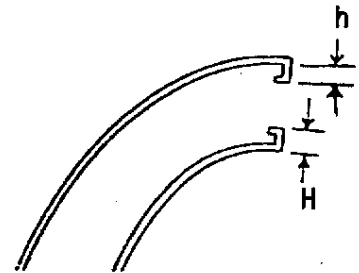
## EXPLANATION OF SPECIFICATIONS

1. Fill Pipe Face Surface Finish - TIR (total indicated reading) is a measure of surface finish. The TIR must be 0.025 cm or less.

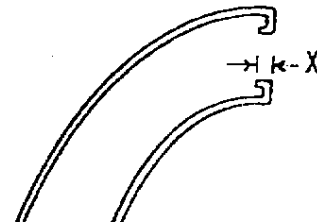
2. Fill Pipe Face Outside Diameter - The outside diameter of the fill pipe ( $d$ ) must be less than 5.75 cm.



3. Fill Neck Lip Height - For fill pipe diameters smaller than 5.2 cm, the lip height ( $h$ ) is measured from the inside wall to the lip edge. The height ( $h$ ) must be at least 0.25 cm. For fill pipe diameters larger than 5.2 cm, the minimum height ( $H$ ) is measured from the outside wall of the fill pipe to the lip edge.  $H$  must be at least 0.85 cm.

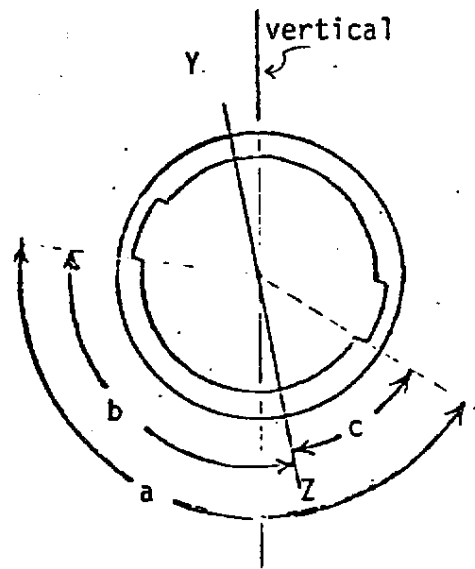


4. Fill Neck Lip Depth - The lip depth ( $X$ ) is measured from the fill pipe face to the inner edge of the locking lip as shown in the sketch. The lip depth must be at least 0.4 cm, but not more than 1.3 cm.

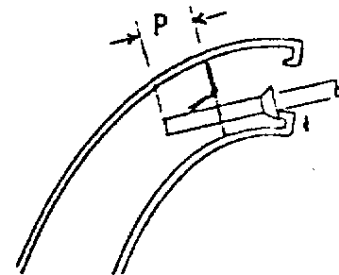


5. Total Continuous Locking Lip - The reference plane is defined as the plane which contains the axial centerline of the fill pipe face, and is turned in the direction which the manufacturer intends the nozzle to be inserted. Line YZ represents a typical reference plane in the drawing.

There must be at least 100 degrees of continuous locking lip in the lower half of the fill pipe with at least 35 degrees of locking lip on each side of the reference plane. Angle b and c represent, respectively, the locking lip extending to the left side and right side of the reference plane. Angle b added to c must equal angle a, the total continuous locking lip.

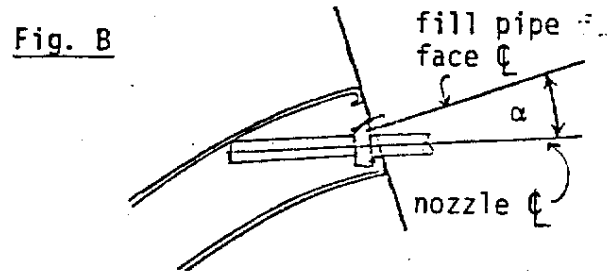
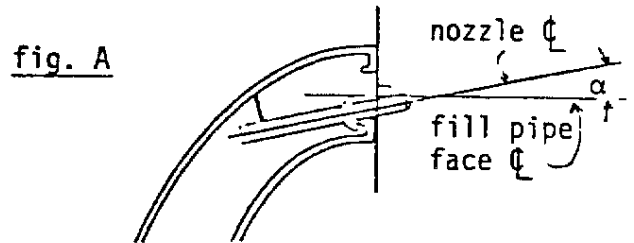


6. Nozzle Penetration of Restrictor - The nozzle penetration of the restrictor (P) is the distance the tip of the filler



nozzle extends past the unleaded fuel restrictor with the nozzle in its normal resting position. The penetration must be at least 2.25 cm. This requirement is not applicable to filler necks for leaded fuel.

7. Angle Alpha - Angle alpha ( $\alpha$ ) is the angle between the axial centerline of the fill pipe face and the axial centerline of the filler nozzle. A positive angle  $\alpha$  must be between  $0^\circ$  and  $20^\circ$  as measured from the axial centerline of the fill pipe face. A negative angle  $\alpha$  must be between  $0^\circ$  and  $-10^\circ$ . Angle  $\alpha$  is positive in fig. A and negative in fig. B.



8. Spill Prevention Angle - The spill prevention angle ( $\sigma$ ) is the angle between the axial centerline of the filler nozzle and the horizontal. This angle must be at least  $15^\circ$  above the horizontal ( $30^\circ$  for 1980 and subsequent vehicles).

