



PcPcPc Department

# ODI RESUME

INVESTIGATION: RQ99-021  
SUBJECT: Fuel leaks from fuel injectors  
PROMPTED BY: IE99-021  
PRINCIPAL ENGINEER: Nha Nguyen

DATE OPENED: 11/2/99  
DATE OPENED:

MANUFACTURER: Nissan  
MODEL(S): Stanza, 240SX  
MODEL YEAR(S): 1990-1992  
VEHICLE POPULATION: 321,685

PROBLEM DESCRIPTION: Fuel leaks from the fuel injectors. Leaking fuel in the presence of an ignition source can cause a vehicle fire.

## FAILURE REPORT SUMMARY

	ODI	MANUFACTURER	TOTAL
COMPLAINTS:	35	309	344
CRASHES:	0	0	0
INJ CRASHES:	0	0	0
# INJURIES:	0	0	0
FAT CRASHES:	0	0	0
FIRES:	1	4	5
OTHER:	0	0	0

ACTION: This RQ is closed.

ENGINEER: \_\_\_\_\_ DIV CHF: \_\_\_\_\_ OFC DIR: \_\_\_\_\_

\_\_\_\_\_  
DATE

\_\_\_\_\_  
DATE

\_\_\_\_\_  
DATE

SUMMARY: In October of 1995, Nissan conducted a safety improvement campaign, 95I-006. The campaign recalled Maximas (1985-88), 200SX (1987-88), 300ZX (1984-88), and Infinity M30 (1990-92), for fuel leaking from the fuel injectors. The remedy called for a replacement of the fuel injectors and related hoses on affected vehicles. The recall was influenced by EA94-018, involving over 680,000 1984-89 Maxima and 300ZX vehicles, and was originally initiated as PE94-018 with 25 complaints, for a complaint rate of 4 per 100K.

The purpose of this investigation was to examine the fuel leak issue of 1990-92 Stanzas and 240SXs.

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**Population:** The breakdown of subject vehicles by model and model year are listed in the following table.

	Population			
	1990	1991	1992	Total
Stanza	78,369	69,682	59,148	207,199
240SX	59,839	33,251	25,430	118,520
Total	140,198	104,924	86,570	325,719

**Problem Experience:** The consumer reports and rates per 10,000 vehicles are listed in the following tables.

	ODI Reports				Nissan Reports			
	1990	1991	1992	Total	1990	1991	1992	Total
Stanza	12	6	7	25	123	59	43	225
240SX	10	0	0	10	75	5	4	84
Total	22	6	7	35	198	64	47	309

	Report Rate/10K			
	1990	1991	1992	Total
Stanza	17.22	9.33	8.40	19.40
240SX	14.20	1.50	1.57	7.90

These reports consisted of fuel leakage onto the engine from the fuel rail and fuel injectors. However, Nissan stated that some reports may involved with internal fuel leakage into the cylinder from the fuel injectors (not an external leak). Nissan issued a service bulletin, NTB93-158, to correct this internal fuel injector leakage.

The reports and report rate of 1991 and 1992 model year 240SX are significantly less than 1990 model year 240SX. Nissan did not provide an explanation for this drop off complaint rates. However, the 1991 and 1992 240SX fuel injectors are side feed, while all of the other subject injectors are top feed.

Not counting 1991 and 1992 model year 240SX, the report rates (per 10,000 vehicles) of the subject vehicles and the rates of 1984-1989 300ZX and 1985-1988 Maxima vehicles under the safety improvement campaign, 95I-006, the rates are the same, 12.5 to 12.5. However, for the 300ZX and Maxima vehicles, out of 864 reports there were 580 fires reported. There were only 5 fires, out of 344

reports, reported for the subject vehicles.

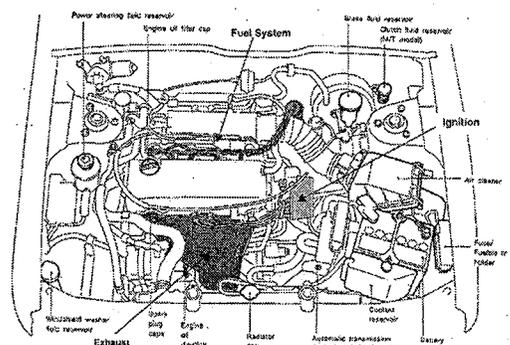
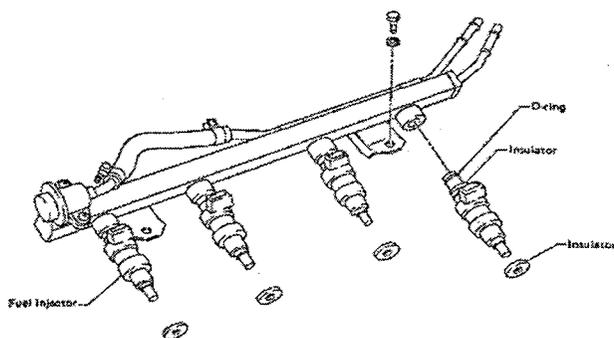
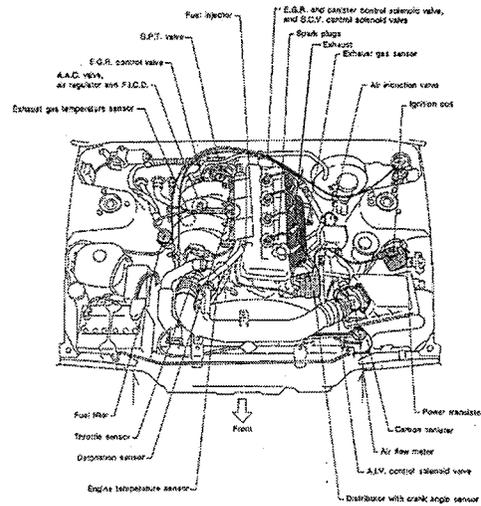
The report breakdown by model year and vehicle's mileage at the time of incident are shown below:

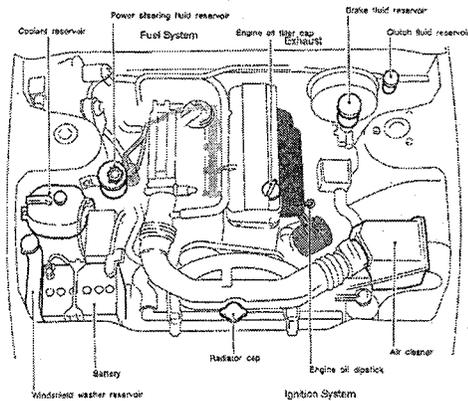
**Fuel Injector Design:**

The fuel rail/injector assembly, engine layout and location of the fuel rail/injectors are shown in the following figures. The fuel injectors of the subject vehicles are differ considerably in design and application from the fuel injectors used in the vehicles involved in the service campaign 95I-006. The

subject fuel injectors are of different design and are not interchangeable with the vehicles in the service campaign 95I-006. Some main differences are outlined as follows:

- The engines in the subject vehicles differ from the engines used in the vehicles 95I-006.
- The subject fuel injectors are designed to mate with the fuel feed rail using an O-ring seal. The 95I-006 campaign injectors did not use this type of connection.
- The subject injectors are located a significant distance (on the opposite side of the cylinder head) from the exhaust manifold, spark plugs and associated high tension wires.
- The high tension wires of the subject vehicles are more robust than in the campaigned vehicles, reducing the chance of a spark occurring.





There were no significant design modification or change in the fuel rail or the fuel injectors.

**Nissan's Positions:** Nissan stated the following positions regarding the alleged fuel leakage:

- Nissan does not believe the a safety defect exists in the subject vehicles due to the low rate of alleged fuel injector leakage.
- Very small number of fires (5).
- Nissan own tests verified that with all four fuel injectors leaking simultaneously, the fuel/air ratio does not reach a combustibile within the engine compartment. In addition, the fuel odor would be readily apparent in the passenger compartment alerting the owner of the fuel leakage.
- Nissan will continue to monitor field information and the performance of the subject vehicles for potential action items.

**Conclusion:** Due to the low number of fire reports and based on the available information, a safety-related defect trend for 1990-1992 model year Stanza and 240SX vehicles has not been identified at this time and further use of agency resources does not appear to be warranted. The RQ investigation is closed. The closing of this investigation does not constitute a finding by NHTSA that a safety-related defect does not exist. The agency reserves the right to take further action if warranted by future circumstances.

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