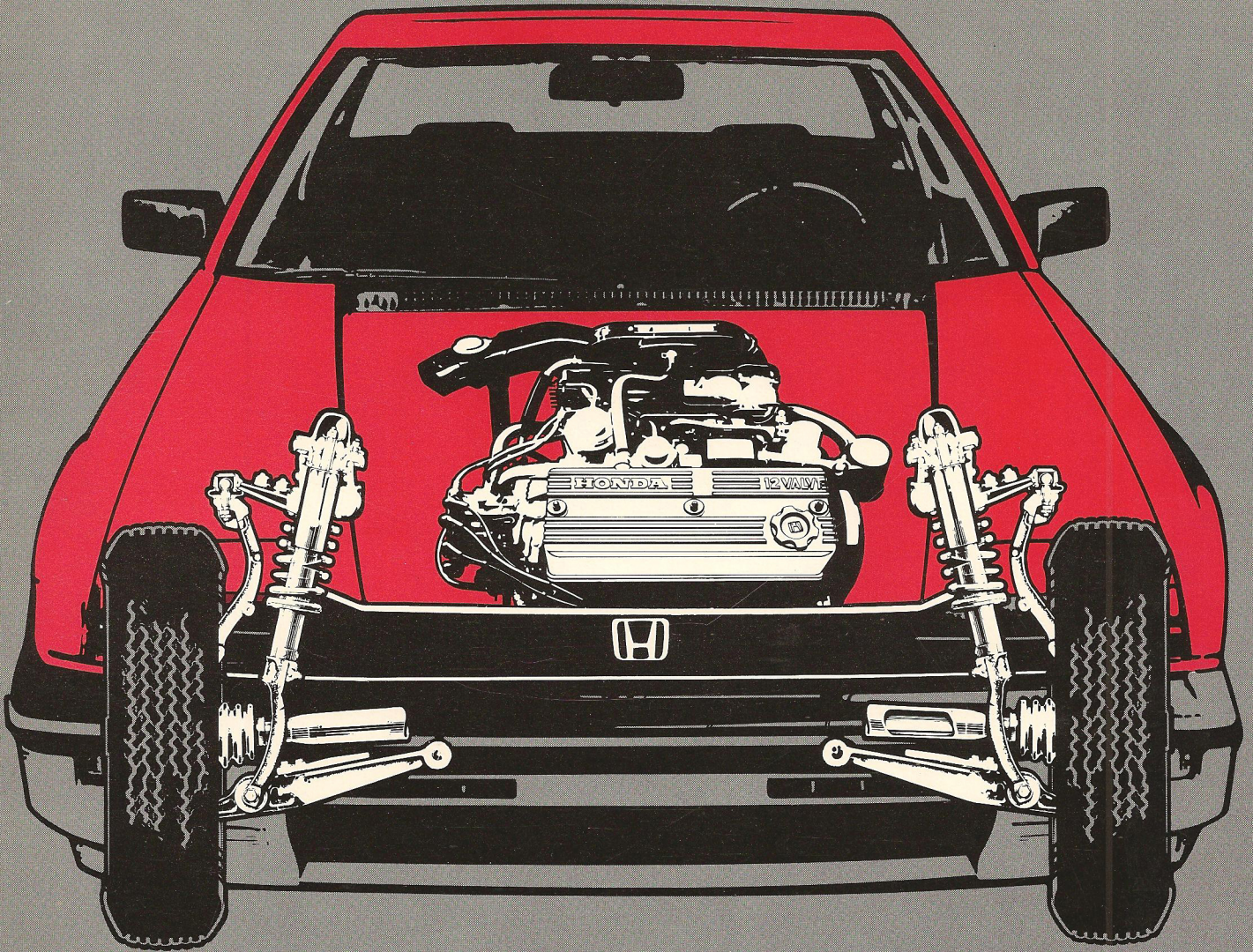


**HONDA**

'83

# PRELUDE



**AUTOMOBILE TECHNICAL TRAINING**

**Brought to you by Mitchn. For Research and Informative purposes ONLY!**

## INTRODUCTION

This booklet explains the technical changes in the 1983 Prelude, and describes the construction and function of its new parts.

After using the booklet in your '83 Prelude Update Training class, take it back to your dealership and review it with your fellow technicians. We want to be sure everyone has a chance to see "what's new."

To make the most of the booklet, use the '83 Prelude Service Manual along with it; this is a supplement to the Service Manual, not a substitute for it.

The index format used here is the same as used in Honda Service Manuals. The first page of each section is marked with a tab that lines up with one of the symbols on this page. This "thumb index" makes it easy to find the section you want, without looking through a table of contents.

This booklet is based on the latest product information available at the time of printing. We reserve the right to make changes any time without notice. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of the publisher. This includes text, illustrations, photos and tables.

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General Info



Special Tools



Specifications

specs

Body



Engine



Cooling



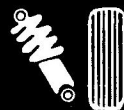
Fuel



Emission Controls



Suspension



Brakes



Electrical





## **General Information**

# Identification Codes

## Chassis Codes

### Vehicle Identification Number

JHMAB522XDC000002

Manufacturer Code ————

Car Type ————  
M: Passenger Car

Prelude ————

Transmission Type ————  
5: 5-Speed  
7: Automatic

Number of Doors ————

Model ————

Check Digit ————

Model Year ————  
D: 1983

Factory Code ————  
C: Sayama Factory

Serial Number ————

### Engine Serial Number

ES1—1000001

Engine Type ————

Model Year ————  
1983

Emission Group ————  
0: California (CAL)  
5: 49 State Low Altitude (49 ST)  
9: High Altitude (HI ALT)

Serial Number ————

### Transmission Number

AK—4000001

Transmission Type ————  
AK: 4-Speed Automatic  
GM: 5-Speed Manual

Serial Number ————  
4000001: 4-Speed Automatic  
3300001: 5-Speed Manual

## Paint Codes

### Paint Codes

Color Code	Color
NH-79M	Arctic Silver Metallic
R-46*	Dominican Red
B-23M	Windsor Blue Metallic

\*This color is not metallic, but has a clear coat (with color mixed in it) sprayed over the color coat.

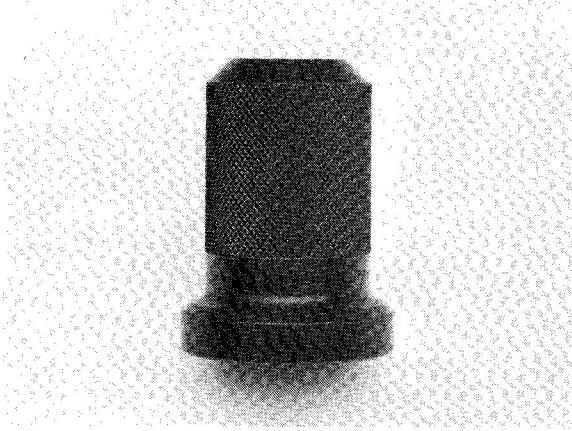
# Special Tools



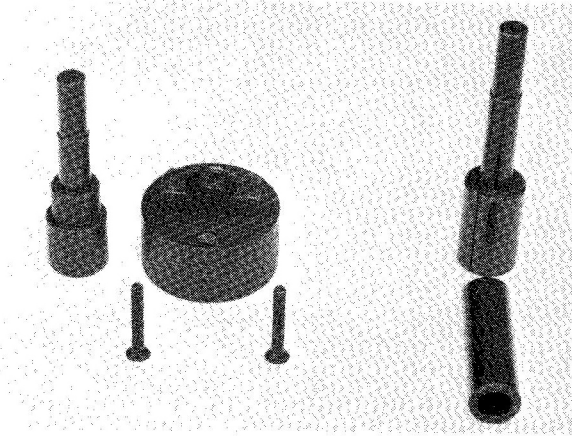
# Special Tools

## Engine

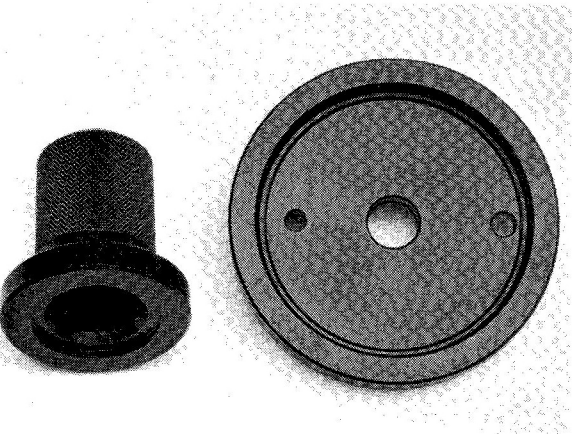
**CAMSHAFT SEAL DRIVER**



**PISTON PIN TOOLS**

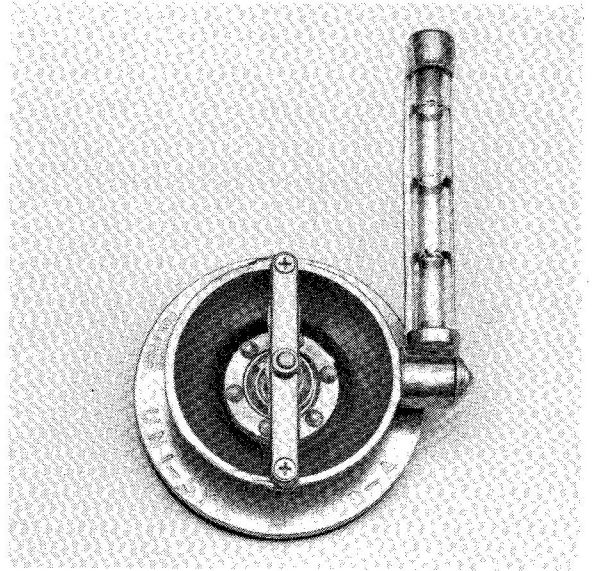


**CRANKSHAFT SEAL DRIVER**



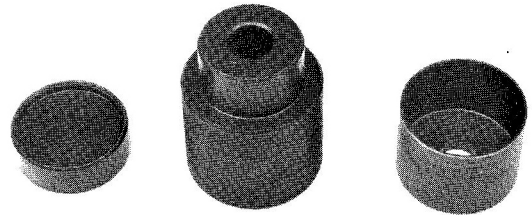
## Fuel/Emission

**CARBURETOR SYNCHRONIZER**



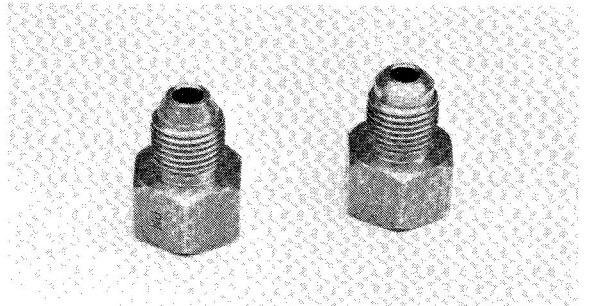
## Suspension

**BALL JOINT DISASSEMBLY TOOLS**



## Steering

**POWER STEERING GAUGE ADAPTERS**



# Specifications

**specs**

# Design Specifications

	ITEMS	METRIC	ENGLISH	NOTES
<b>DIMENSIONS</b>	Overall Length	4,290 mm	168.9 in.	
	Overall Width	1,690 mm	66.5 in.	
	Overall Height	1,295 mm	51.0 in.	
	Wheelbase	2,450 mm	96.5 in.	
	Track F/R	1,470/1,470 mm	57.9/57.9 in.	
	Ground Clearance	153 mm	6.0 in.	
	Seating Capacity		Four	
	Overhang F/R	890/955 mm	35.0/39.6 in.	Includes bumper
<b>WEIGHTS</b>	Engine Weight (Wet)	108 kg	238 lb.	
	Curb Weight			
	5-Speed	991 kg	2,185 lb.	
	4-Speed AT	1,016 kg	2,240 lb.	
	Weight Distribution (F/R)			
	5-Speed	605/384 kg	1,338/845 lb.	
4-Speed AT	632/384 kg	1,393/845 lb.		
	Carrying (cargo) Weight Capacity	45 kg	100 lb.	
<b>CAPACITIES</b>	Engine Oil:			Reservoir tank volume not included
	system	4.0 l	4.2 US qt	
	without filter	3.0 l	3.2 US qt	
	with filter	3.5 l	3.7 US qt	
	Transmission Oil:			
	5-Speed—drain & refill	2.4 l	2.5 US qt	
	—initial fill	2.5 l	2.6 US qt	
	4-Speed AT—drain & refill	2.8 l	2.9 US qt	
	—system	5.8 l	6.1 US qt	
	Fuel Tank	60 l	15.8 US gal	
Cooling System Capacity	6.0 l	6.3 US qt		
	Power Steering System Capacity	1.5 l	1.6 US qt	
<b>ENGINE</b>	Type	Water cooled, 4-cycle O.H.C.		
	Cylinder Arrangement	4-cylinder in-line, transverse		
	Bore and Stroke	80.0 x 91.0 mm	3.15 x 3.58 in.	
	Displacement	1,829 cm <sup>3</sup>	112 cu. in.	
	Compression Ratio	9.4 : 1		
	Compression Pressure	1,275 kPa	190 psi	
	Carburetor Venturi Diameter	34 mm	1.34 in.	
	Valve Train	Timing belt drive, single overhead camshaft		
	Lubrication System	Trochoid pump		
	Fuel Required	Unleaded gasoline		
	Valve Clearance (set cold)			
	Intakes and Auxiliary	0.15 mm	0.006 in.	
	Exhaust	0.28 mm	0.011 in.	

<b>TRANSMISSION</b>	Manual	5 forward speeds, 1 reverse with single plate, dry, diaphragm spring clutch	
	Automatic	4 forward speeds, 1 reverse, with torque converter	
	Primary Reduction	Direct 1 : 1	
	Gear Ratios	5-Speed	4-Speed AT
	1st	3.181	2.380
	2nd	1.944	1.560
	3rd	1.250	1.032
4th	0.933	0.777	
5th	0.857	—	
Reverse	3.000	1.954	
Final Reduction	3.895	3.875	
Clutch Lining Area	160 cm <sup>2</sup> (24.8 sq. in.)		
<b>STEERING</b>		Manual	Power
	Gear Type	Rack and Pinion	
	Overall Ratios	17.1 : 1	14.9 : 1
	Turns, lock-to-lock	3.2	2.8
Steering Wheel Diameter	380 mm (14.6 in.)		
<b>SUSPENSION</b>	Front	Independent, double wishbone, coil spring	
	Rear	Independent, Mac Pherson strut, coil spring	
	Shock absorber, Front and Rear	Telescopic, hydraulic	
<b>WHEEL ALIGNMENT</b>	Camber	Front/Rear	0°/0°
	Caster	Front/Rear	0° + 45°/0°
	Toe	Front/Rear	0°/0°
	Steering Axis Inclination	6° ± 1°	
<b>BRAKES</b>	Type, Front	Self-adjusting power-assisted, disc brake type, with ventilated discs	
	Rear	Self-adjusting, power-assisted, leading-trailing shoe, drum type	
	Lining Surface Area Front/Rear	40.0/45.0 cm <sup>2</sup>	6.2/6.9 sq. in.
<b>TIRES</b>	Size	185/70 SR13	
	Spare	T105/80 D13	
<b>ELECTRICAL</b>	Battery	12V-50AH	
	Starter	12V-1.4KW	
	Alternator	12V-60 amps	
	Fuses-Rating (quantity)	20A (4), 15A (7), 10A (7)	
	Main Fuses-Rating (quantity)	65A (1), 35A (1)	
	Headlights	12V-65/55W	
	Speedometer/Gauge Lights/ Other Dash Lights	12V-3.4W, 12V-1.4W	
	Turn Signal Lights (front and rear)	12V-32CP	
	Side Marker Lights (front and rear)	12V-3CP	
	Warning/Indicator Lights	12V-1.4W	
	Interior Light	12V-8W	
	Brake/Taillights	12V-32/3CP	
	Back-up Lights	12V-32CP	

**Body**

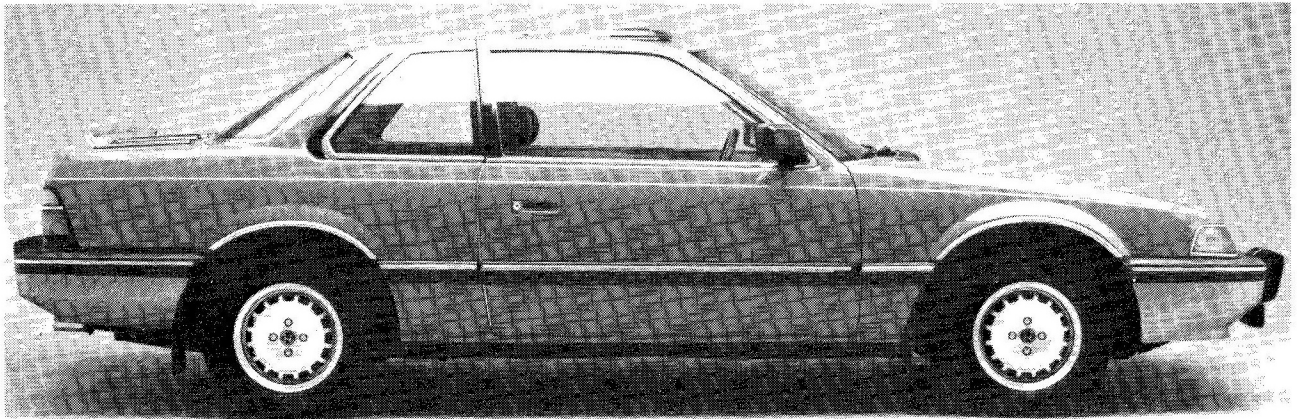


## Exterior Styling and Design

### Side View

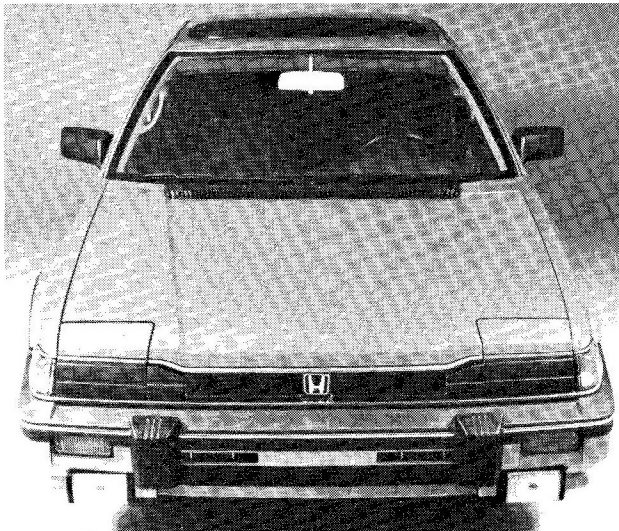
The 1983 Prelude is designed to compete with other coupes or personal image cars from Europe and Japan. The new Prelude has a low profile, large glass areas, a low coefficient of drag (0.36) and, even more important, a very low figure for  $C_d \times A$  (coefficient of drag times frontal area) of 0.67. This is achieved through such features as bonded front and rear windshields, concealed drip moldings and an ultra-low hoodline with retractable headlights. The low hood is made possible through the development of a very compact engine and a newly designed front suspension.

Great attention to durability and corrosion resistance has resulted in a lightweight bumper with an integrated air dam skirt and several new processes for painting and sealing.



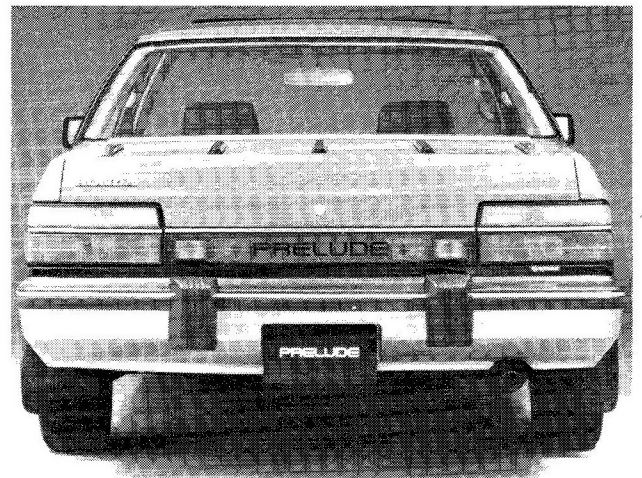
### Front View

The aggressive appearance of the blacked-out grill suggests high performance, and complements the "no-nonsense" body styling.



### Rear View

The large, wraparound taillights and black center panel continue the low, wide look, a styling theme that's consistent with the new Prelude's lower center of gravity.

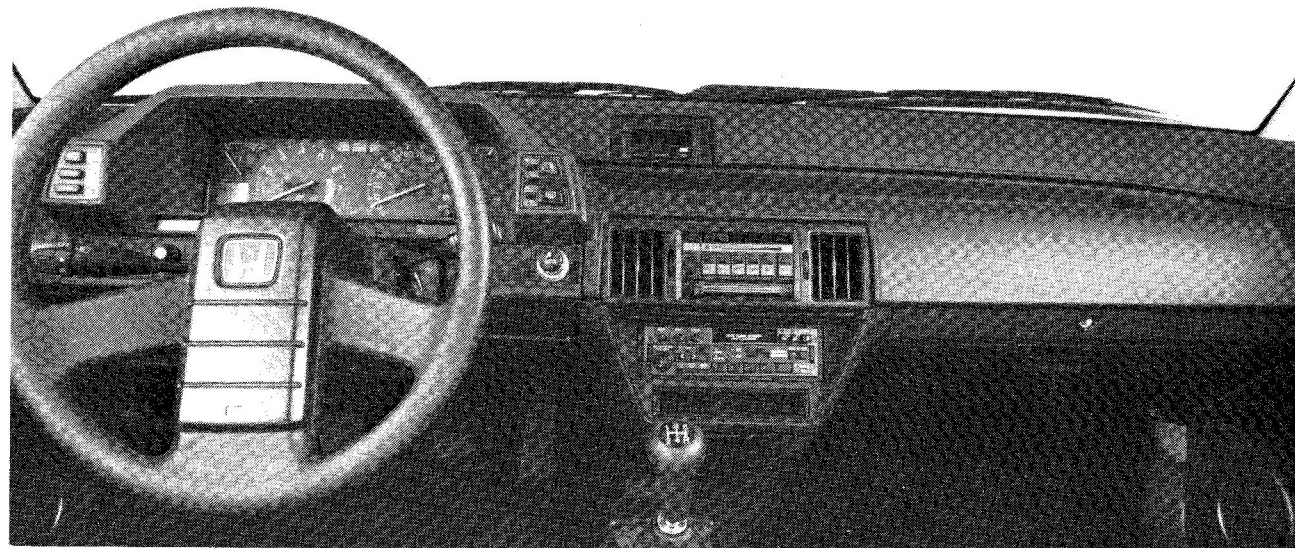




## Interior Styling and Design

### Dashboard

The roomy interior is a wraparound design that integrates the dashboard with the door panels. The instrument panel has anti-glare glass and soft orange lighting to make reading the gauges easier.



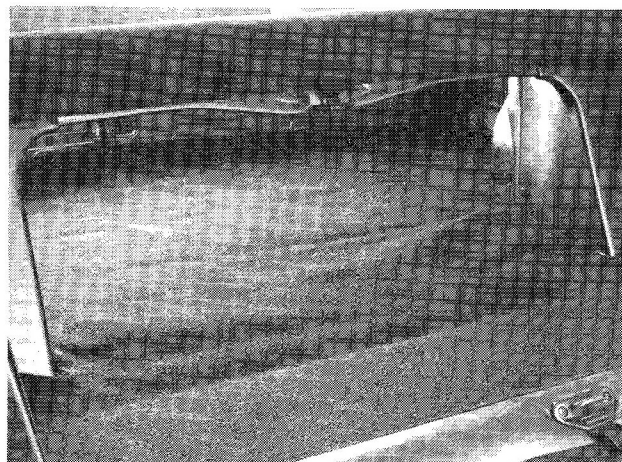
### Front Seats

The re-designed front seats have a lower shoulder-support area to reduce fatigue during long distance driving. They have 180 mm of fore/aft adjustment and an 18-step adjustment for seat-back angle.

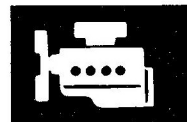


### Rear Seat

The rear seat backrest folds down so you can carry large/long loads in the trunk. You can release the backrest by turning the lock on the rear shelf with the ignition key, or by pulling a rubber strap in the trunk.



# Engine

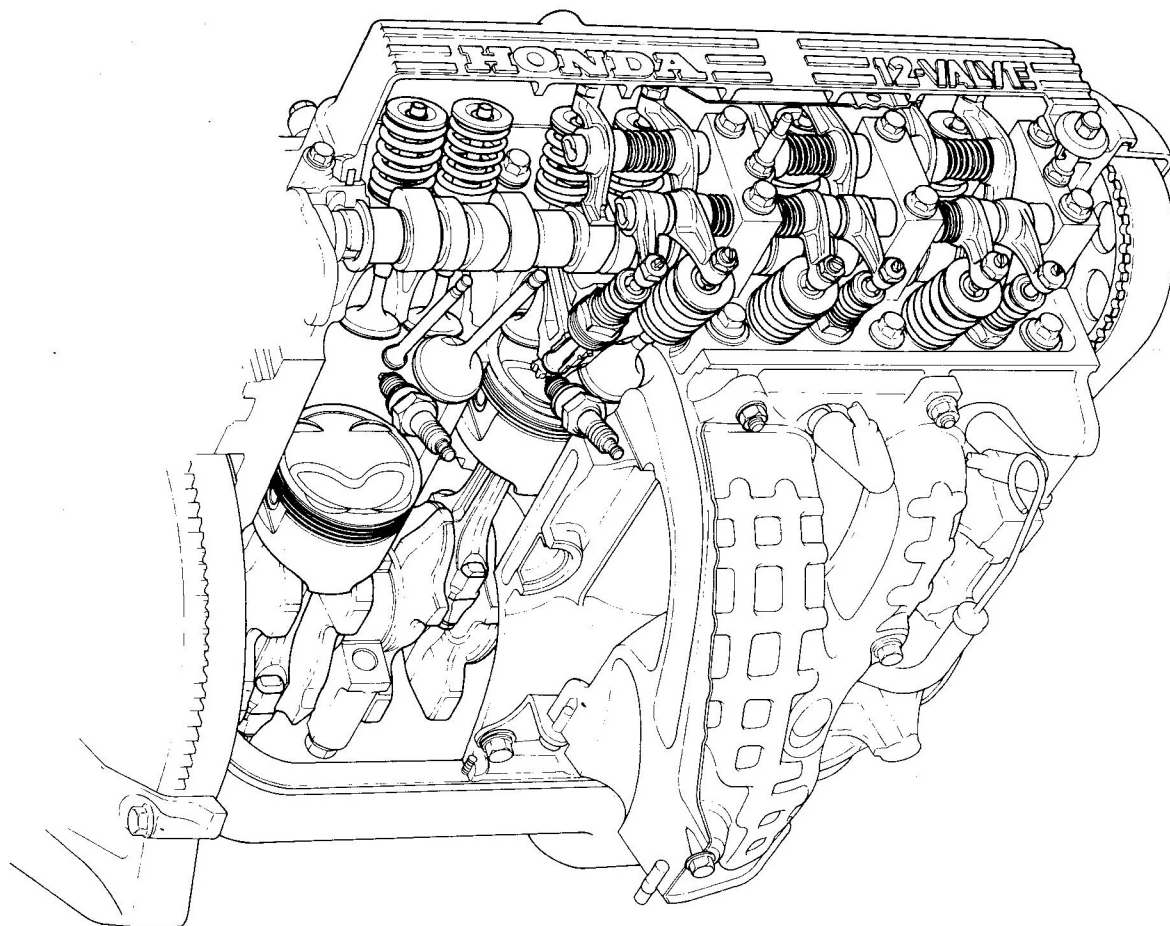


## Engine Design

### Description

The '83 Prelude has a new cast-iron block, 4-cylinder engine. Its displacement has been increased to 1829 cc (up by 78 cc) but total friction has been reduced by about 10%.

The cylinder head is a cross-flow design with two intake valves (both 30 mm in diameter), one exhaust valve (35 mm in diameter), and one auxiliary intake valve in each combustion chamber. The head is made from a new titanium-aluminum alloy for reduced weight and for increased strength at high temperatures. It has five bearings to provide maximum support for the camshaft.

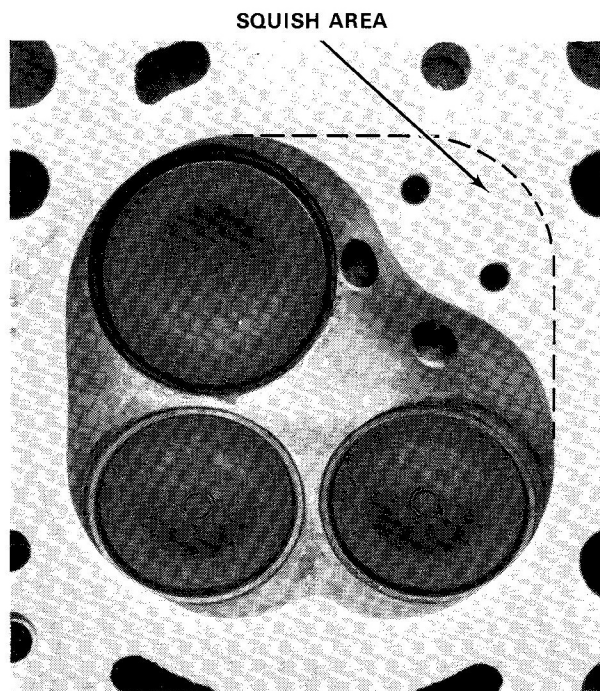
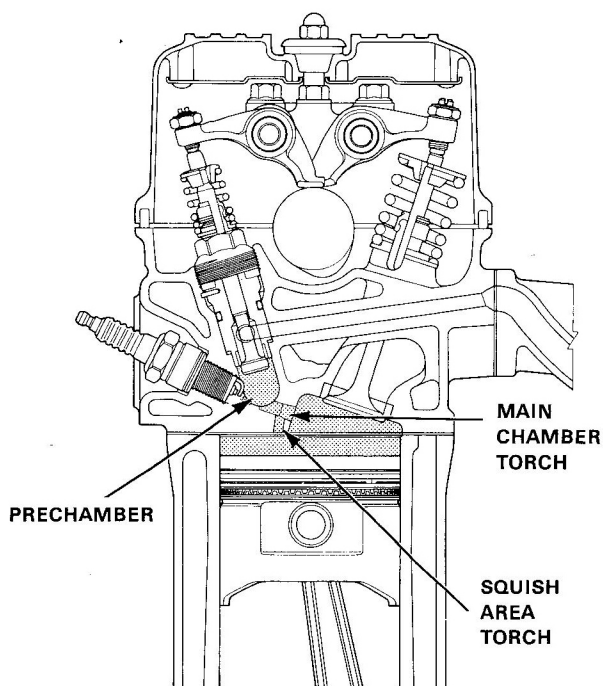


The fuel induction system is made up of two side-draft, constant velocity carburetors and an auxiliary carburetor, which feed a new combustion process called Branched Conduit Torch Combustion.



## Branched Conduit Torch Combustion

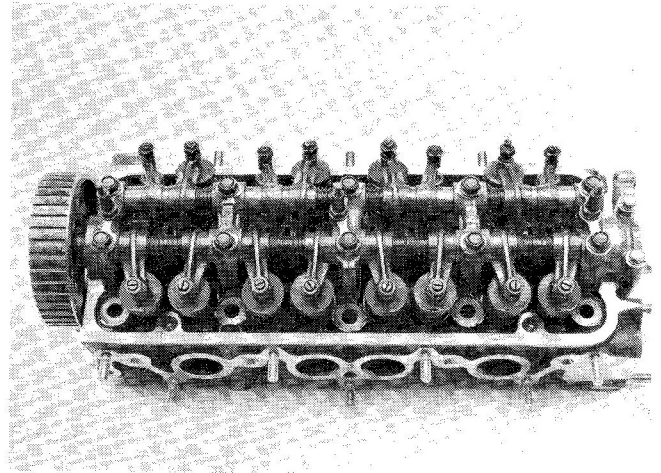
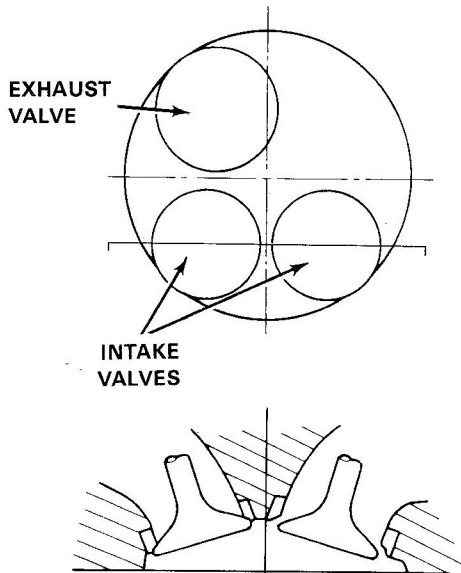
The new engine's combustion chamber combines a pent-roof main chamber with an auxiliary chamber that replaces the pre-chamber cup. The auxiliary chamber and the four passages connecting it to the combustion chamber are an integral part of the cylinder head casting. This Branched Conduit Torch system splits the high-energy torch flame in two directions to ignite the mixture in the largest part of the combustion chamber and in its squish area simultaneously. Even though the low roof in part of the main chamber generates considerable squish effect, the addition of the Branched Conduit Torch ensures complete combustion in the squish area where normal flame travel wouldn't reach. This allows using a higher compression ratio, which speeds the combustion process and provides even greater combustion efficiency.



# Engine Design

## Combination Valve Timing

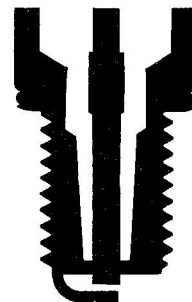
The intake valves open at different times. The one closest to the exhaust valve is retarded, which allows fuel to flow through the other one first. This promotes a swirl in the combustion chamber that helps the fuel mixture burn more thoroughly. The valve that opens first (furthest from the exhaust) also opens faster than the other one, but they both open the same amount and close at the same time. This makes it important to set valve clearances accurately by using the marks on the back of the camshaft pulley.



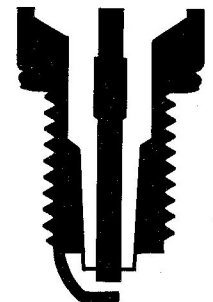
## Projecting Electrode Spark Plugs

Plugs with projecting electrodes are used in the new engine because they resist fuel fouling. At high rpm, they also resist overheating because their electrodes are exposed to a large amount of relatively cool fuel mixture. They are also self-cleaning because at low rpm, when the flow of fuel is reduced, the electrodes stay hot and burn the carbon off.

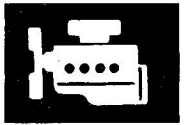
**CAUTION: Do not use projecting electrode type plugs in other CVCC engines.**



STANDARD TYPE

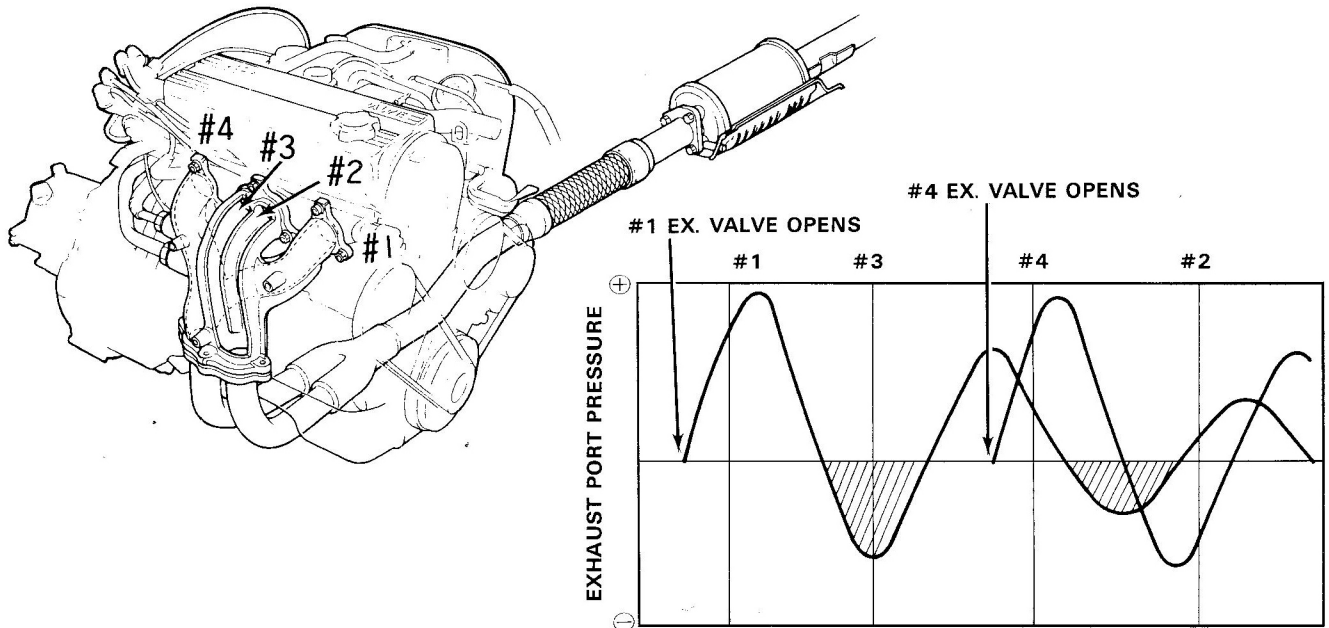


PROJECTED INSULATOR TYPE



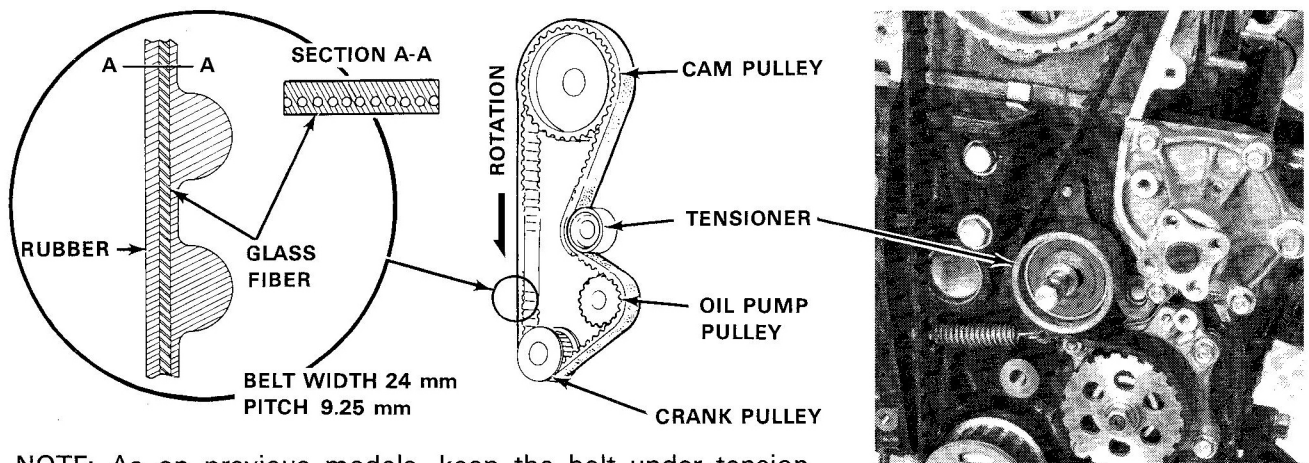
## Exhaust System

The exhaust manifold runner from the #1 exhaust port joins the runner from #4, and the runner from the #2 port joins #3. The two resulting runners then bolt up to dual header pipes that join to form a single pipe after passing under the oil pan. This 4 into 2 into 1 tuned exhaust synchronizes the exhaust gas pulses so they won't interfere with each other. The resulting improvement in exhaust scavenging increases power output over the engine's entire operating range.



## Timing Belt

The teeth on the new timing belt are rounded to reduce the stress on them. They are also larger to provide the additional strength and durability needed to turn the valve train and the oil pump. The spring-loaded tensioner has a fixed pivot and is locked with only one bolt.

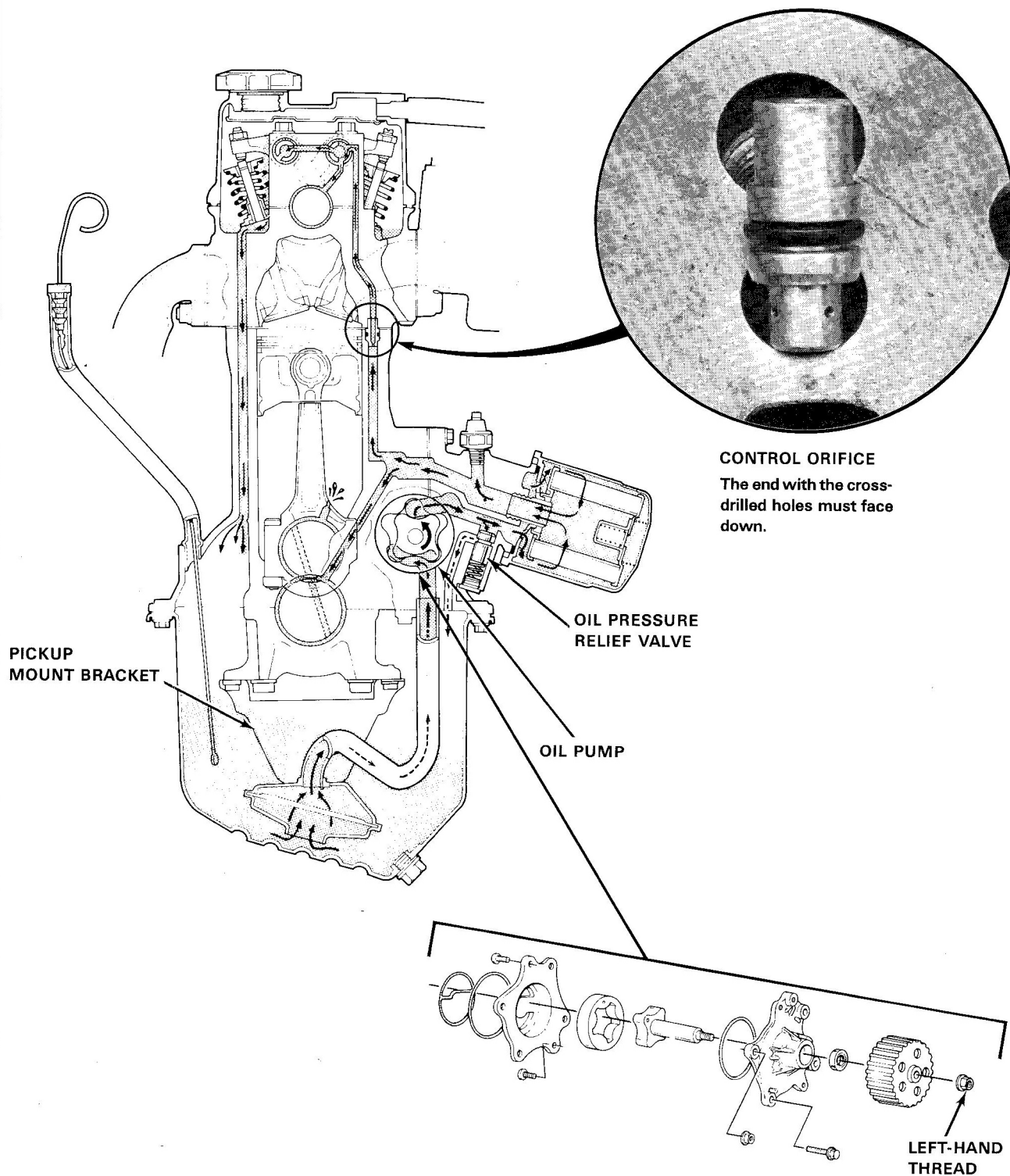


NOTE: As on previous models, keep the belt under tension (turning counterclockwise) while you tighten the tensioner lock bolt.

# Engine Design

## Lubrication System

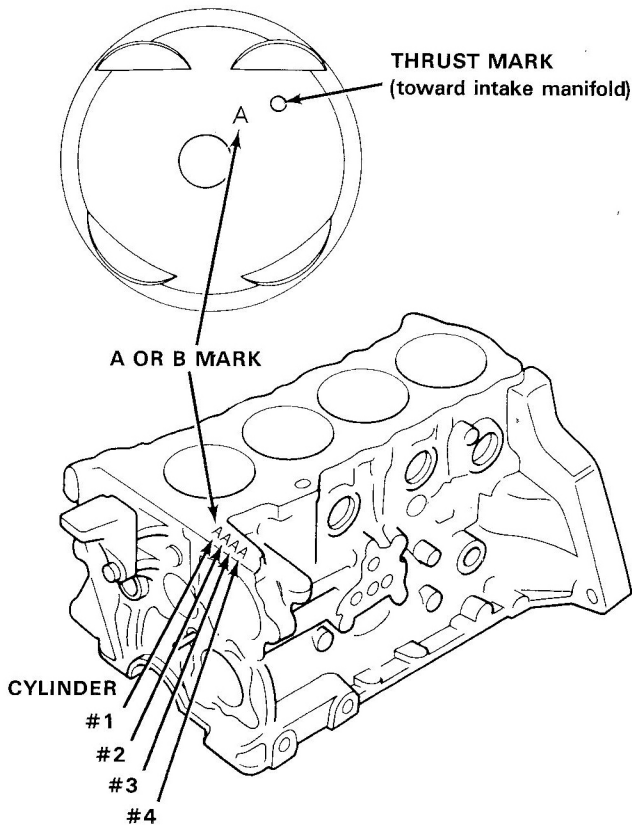
Oil is circulated through the engine by a trochoid type oil pump driven by the timing belt. The pump pickup (with screen) is attached to the #2 main bearing cap with a stamped metal bracket. The oil pressure relief valve is in the base of the oil filter mount casting. A control orifice between the cylinder head and block regulates oil flow to the head.





## Pistons

The pistons are now a selective fit. The size of each cylinder bore is indicated by an "A" or a "B" stamped on the block. The size of a piston is indicated by an "A" or "B" stamped on its crown. Pistons are then selected by matching their letters with the cylinder to ensure more precise and more uniform clearances.



MARK	RANGE OF TOLERANCE	
	CYLINDER BORE DIAMETER	PISTON SKIRT DIAMETER
A	80 mm $+0.020$ $+0.010$	80 mm $0$ $-0.010$
B	80 mm $+0.010$ $0$	80 mm $-0.010$ $-0.020$

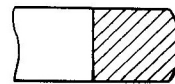
Assemble each rod and piston so the oil hole in the rod and the thrust mark on the piston are on the same side. Then install the assembly in the block with the thrust mark on the piston facing the intake manifold.

## Piston Rings

The lightweight top and second piston rings are 1.5 mm wide to reduce friction. The top ring is a conventional barrel-face type, but the second is a new design which reduces oil consumption by more effectively controlling cylinder wall lubrication.

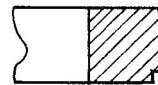
NOTE: Rings must be installed with manufacturer's marks up.

TOP RING

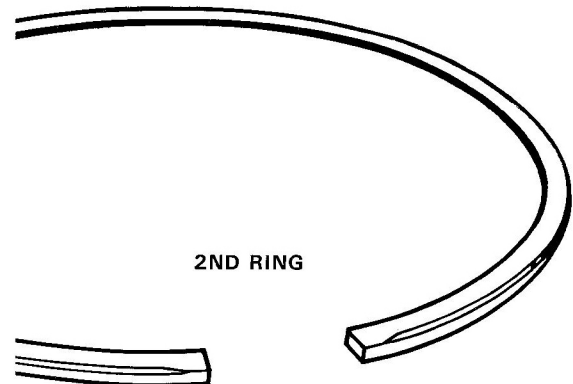


BARREL FACE TYPE

2ND RING

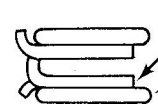


NEW TYPE



NOTE: Ring is shown from bottom side.

OIL RING



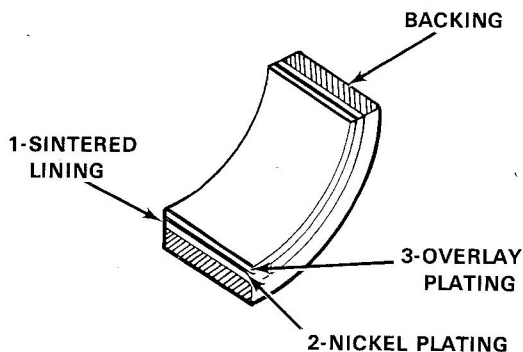
EXPANDER

SIDE RAIL

# Engine Design

## Bearings

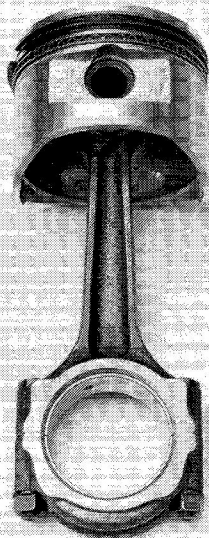
Tri-metal type bearings are used for the connecting rod and crankshaft bearings because their three-layer construction provides excellent resistance to fatigue and seizure.



NOTE: These rod and main bearings will not fit other Honda engines.

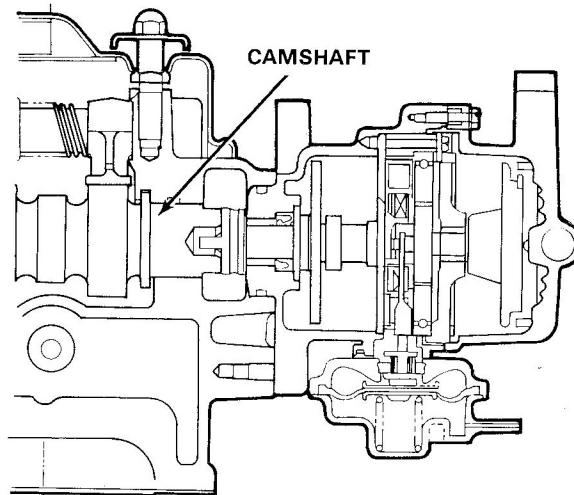
## Connecting Rods

To make the rods stronger, vanadium has been added to the normal carbon steel, and a new air cooling treatment is used in the forging process. The increased strength has allowed the weight of the rods to be reduced.

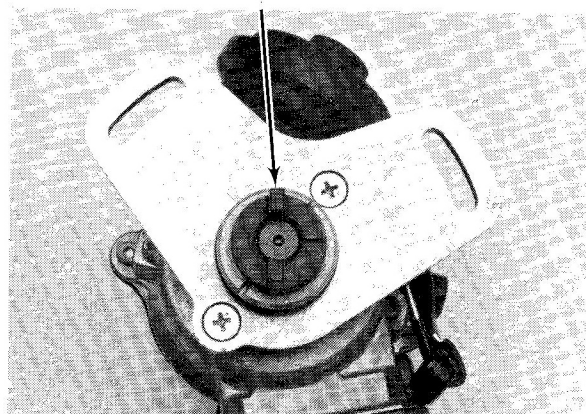
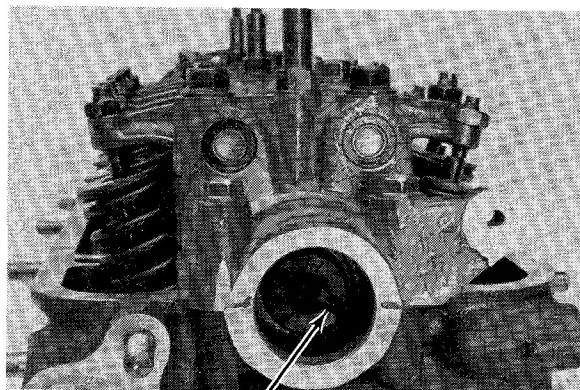


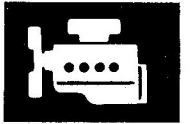
## Distributor Drive

The distributor is mounted horizontally, and driven by a slot in the end of the camshaft. This arrangement reduces power loss by eliminating the gear drive.



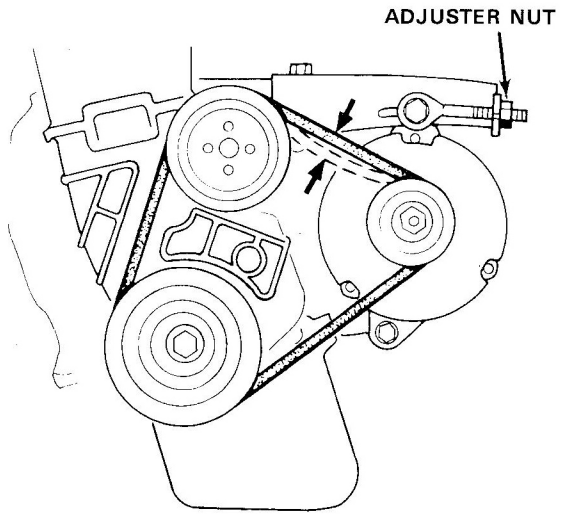
The driven tabs on the distributor shaft and the slot in the camshaft end are offset to provide easy distributor timing.





## Alternator Belt

An adjuster has been added to the alternator bracket to simplify adjustment of the alternator/water pump belt.



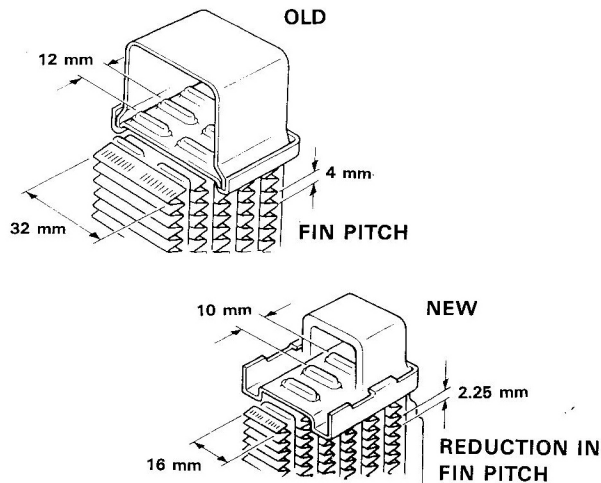
**Cooling**



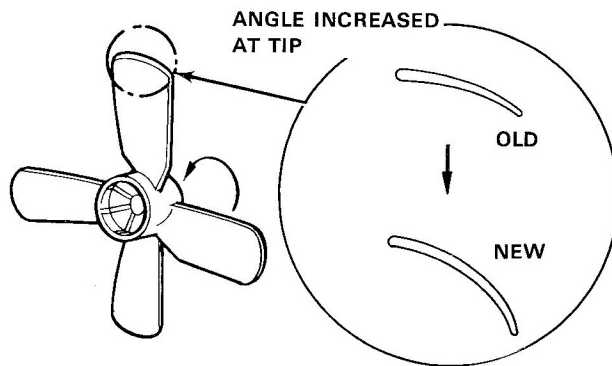
# Cooling System

## Radiator and Fan

A newly designed single-row radiator replaces the conventional two-row type. The single row of tubes and the reduced spacing between fins makes the radiator lighter and more compact.



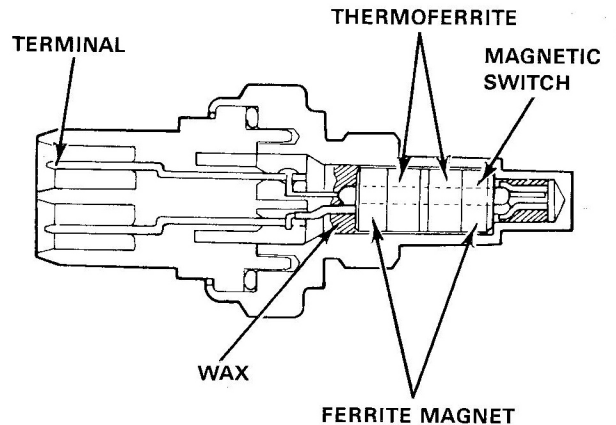
The fan blade pitch has been increased to provide more efficient cooling (2° cooler water temperature while parked at idle), and allow slightly lower rpm for quieter operation.



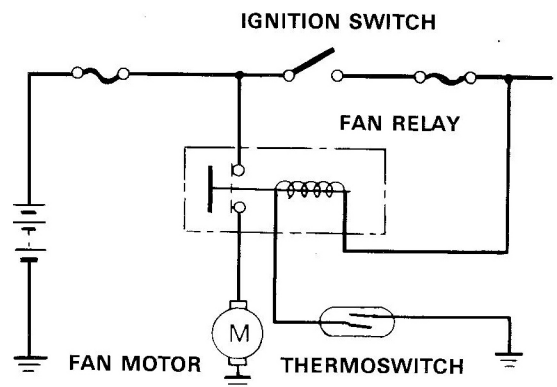
	OLD FAN	NEW FAN
FAN NOISE	65.2 dB	60.2 dB
AIR FLOW	840 m <sup>3</sup> /hr	969 m <sup>3</sup> /hr
CURRENT	3.40 A	3.76 A
MOTOR RPM	1956 rpm	1878 rpm

## Thermoswitch

The fan thermoswitch is screwed into the lower tank of the radiator. It's a new design that works on the principle of thermomagnetism. As coolant temperature rises or falls, the thermoferrite segments block or transmit the magnetic force to open or close the magnetic switch at predetermined temperatures.



The new thermoswitch controls the operation of the fan relay as shown in the following wiring diagram (the fan relay is located in the engine compartment fuse box).



**Fuel**

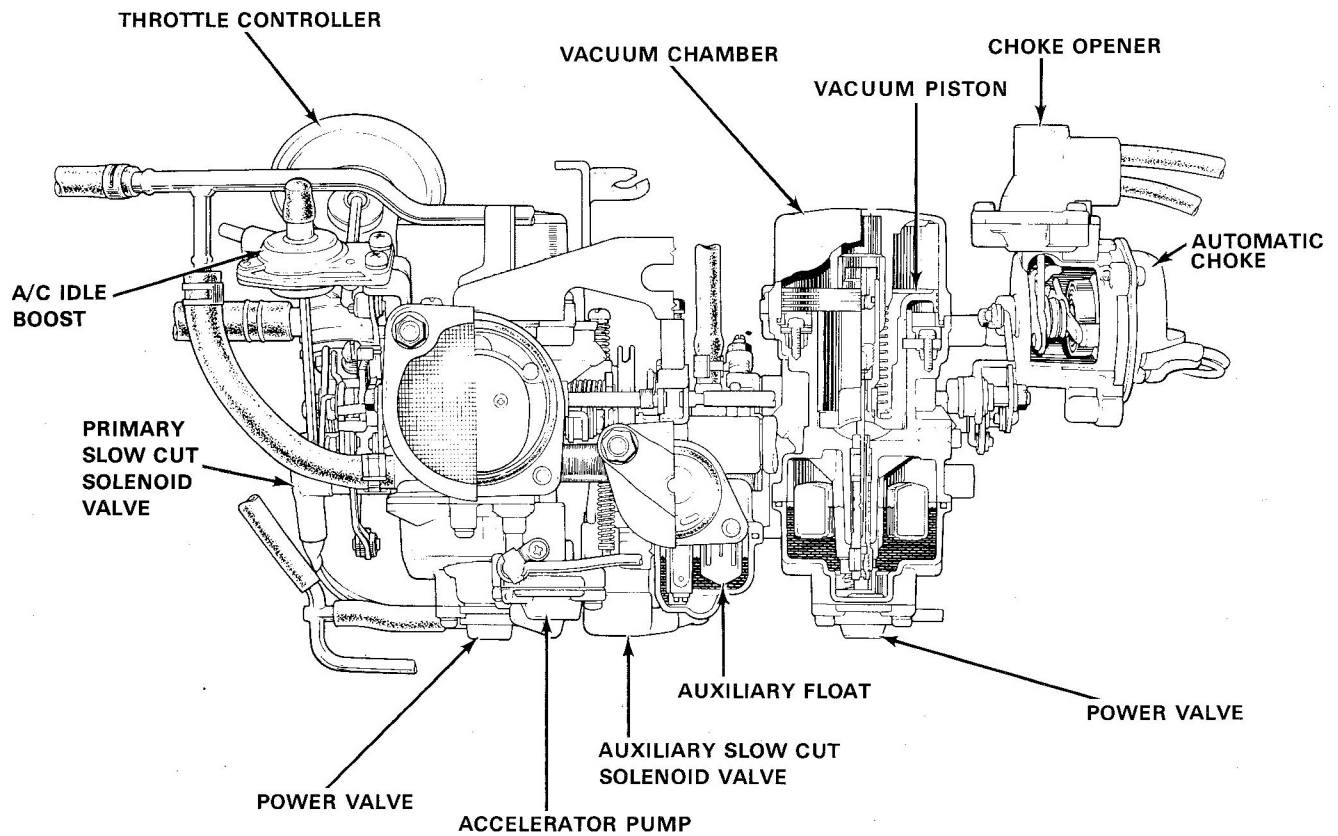


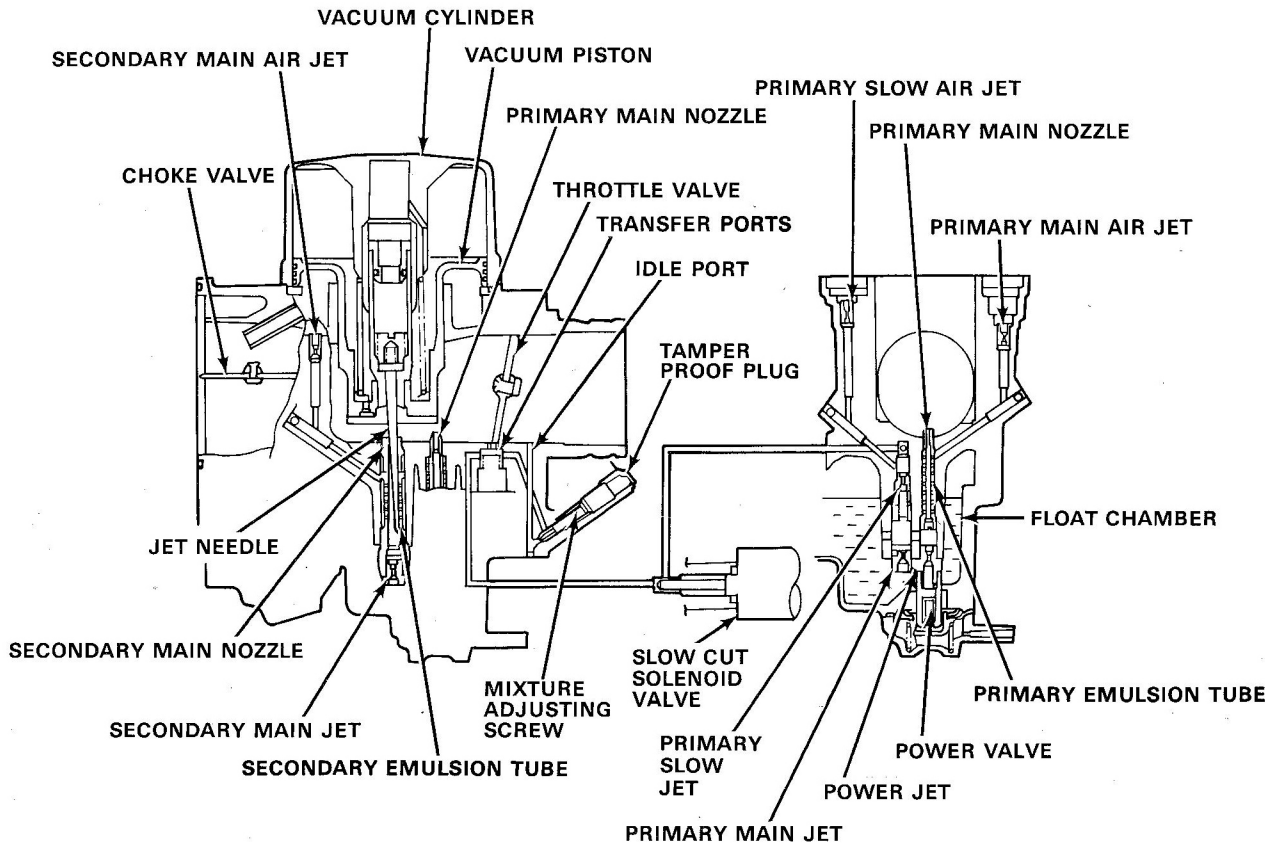
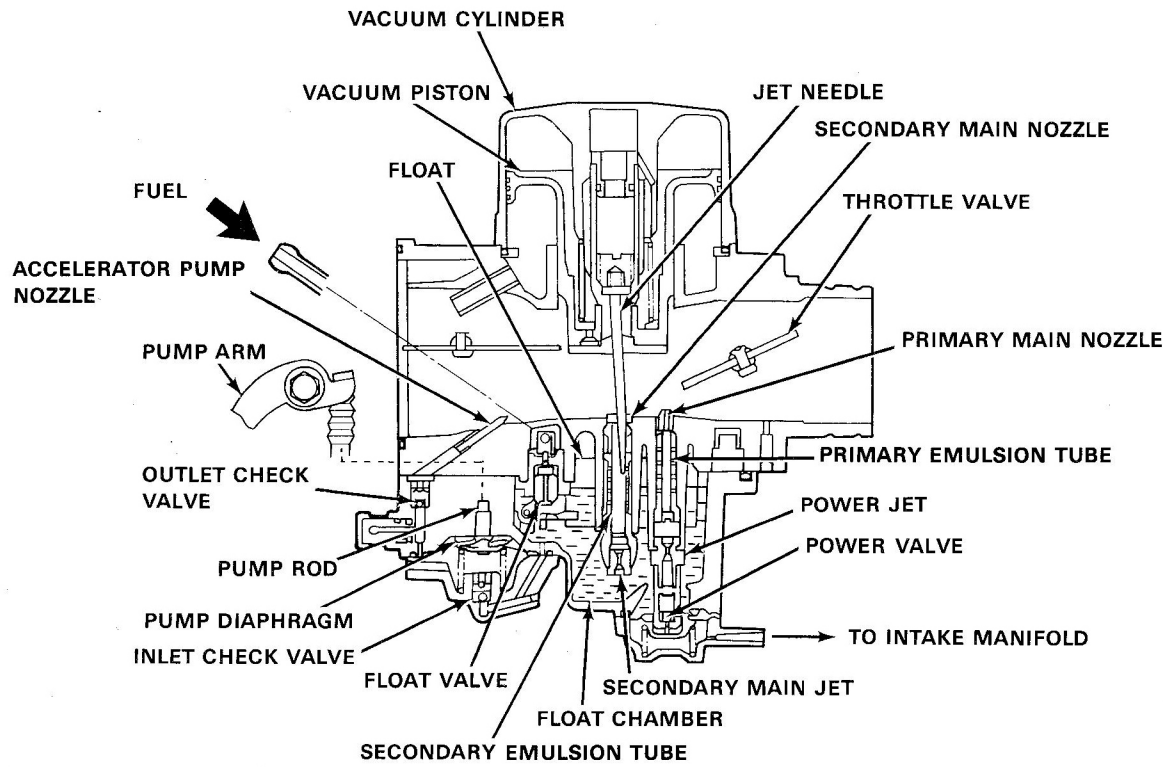
# CV Carburetors

## Description

The Prelude's new engine has two side-draft, constant velocity, variable venturi carburetors and one side-draft, fixed venturi, auxiliary carburetor.

The CV carburetors vary the venturis' cross-sectional area and fuel mixture continuously in proportion to the quantity of intake air, to provide improved throttle response at high and low engine speeds.

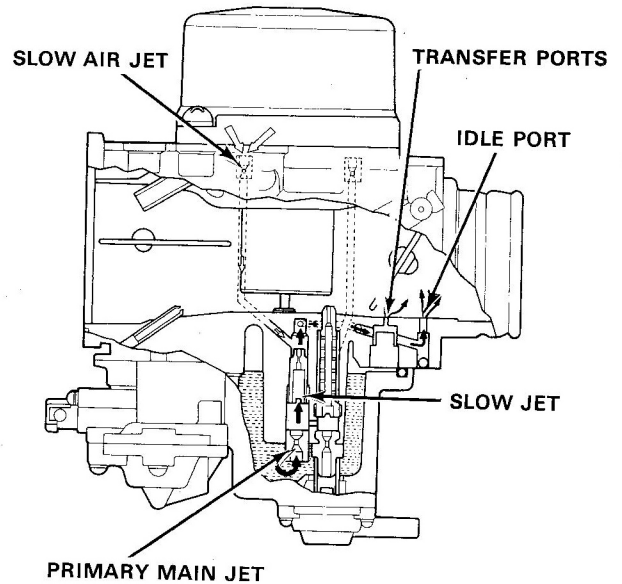




# CV Carburetors

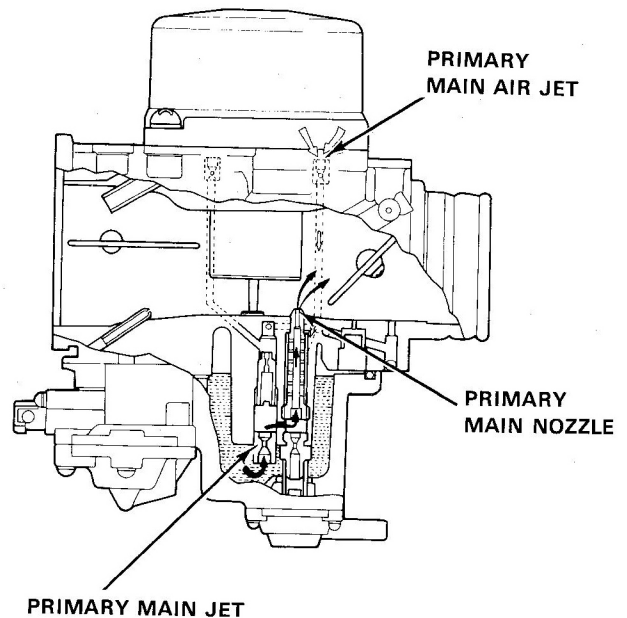
## Slow Circuit

In the slow or "idle" circuit, fuel passes from the primary main jet to the slow jet, where it's mixed with air from the slow *air* jet and then pulled out of the idle and transfer ports into the manifold. The slow circuit has a fuel-cut solenoid to prevent engine run-on when you turn the ignition switch off.



## Main Circuit (Primary System)

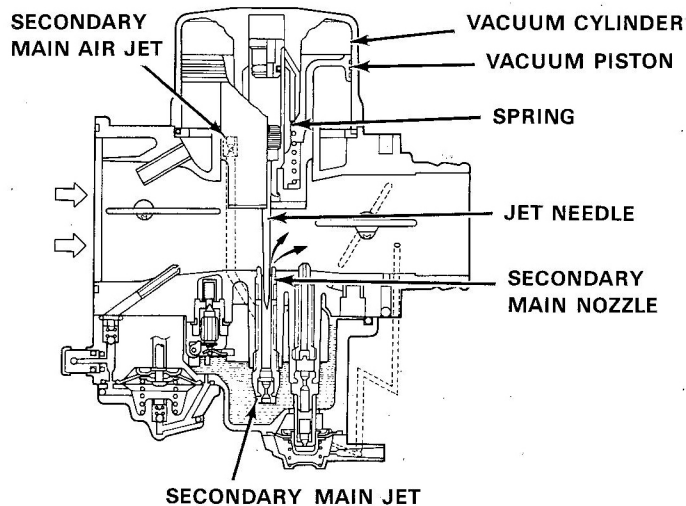
The primary main system operates under light throttle. Fuel is drawn through the primary main jet and mixed with air from the primary main *air* jet. The fuel and air mixture is then drawn up through the primary main nozzle and into the venturi.





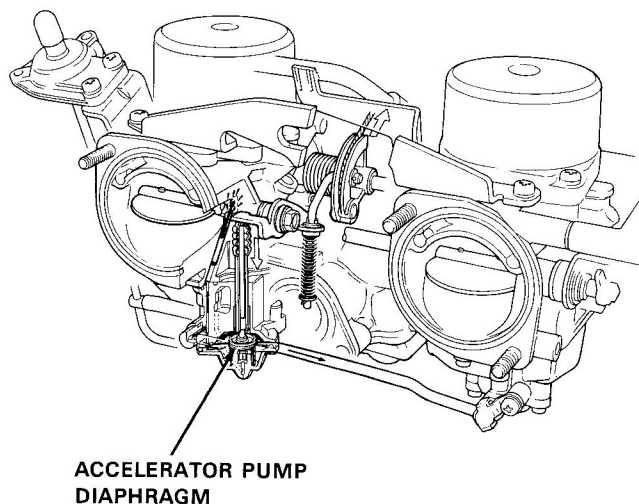
## Main Circuit (Secondary System)

The secondary vacuum system is connected directly to the venturi. So, an increase of vacuum in the venturi also increases the vacuum in the vacuum cylinder. At high engine rpm, venturi vacuum increases, pulling the vacuum piston up against its return spring. The tapered jet needle attached to the rising piston, is pulled out of the secondary main nozzle, allowing more fuel to flow through the secondary main jet.



## Accelerator Pump Circuit

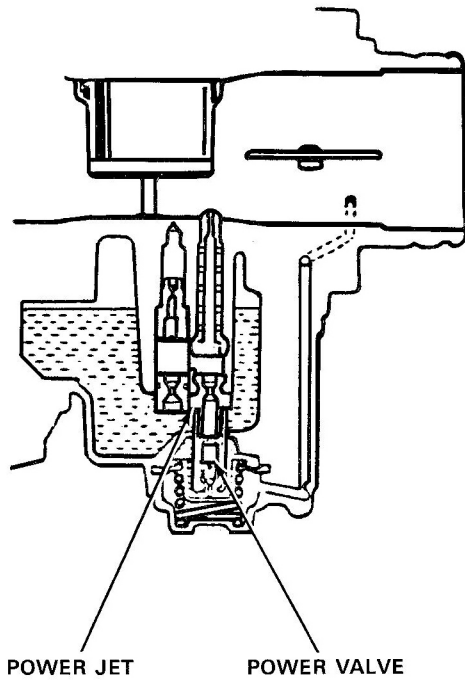
When the accelerator pedal is pushed suddenly while idling or driving at low speed, the accelerator pump, to maintain the proper air/fuel ratio, squirts extra fuel into the additional air coming through the venturi. The pump rod, which is connected to the throttle lever, pushes against the diaphragm which pushes fuel past the outlet check valve and out through the nozzle in each venturi. The outlet check valve then closes to prevent fuel from being continuously drawn out of the nozzle. The inlet check valve opens as the diaphragm is released to allow more fuel to be drawn into the chamber for the next stroke of the pump rod. Although the accelerator pump is part of the left carburetor, it supplies the same amount of fuel to both; through an internal passage in the left one and a short piece of tubing to the right one.



# CV Carburetor

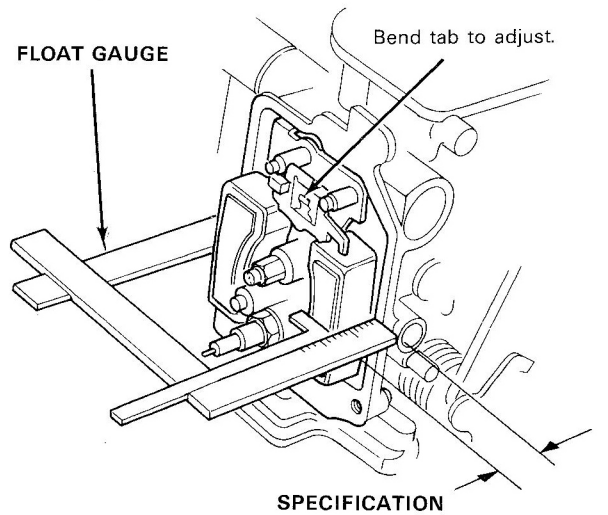
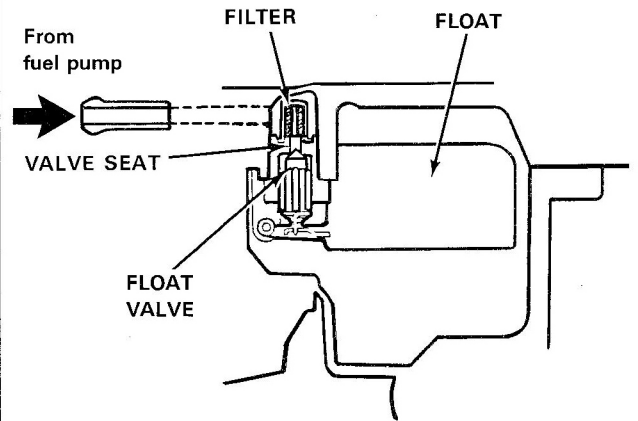
## Power Valve Circuit

A power valve is provided in each CV carburetor as part of the primary system. During idle and while driving at normal cruise, the power valve is held closed by manifold vacuum. As manifold vacuum drops during sudden acceleration or hill climbing, the spring pushes the diaphragm up which opens the power valve and lets additional fuel flow through the primary circuit to richen the mixture.



## Float Circuit

To prevent fuel starvation during cornering, both carburetors have double floats, and their fuel pickups are located in the center of the float bowl. Float level is adjusted internally by bending the metal tab on the float assembly. There is no inspection window in the bowl for checking float level, nor is there any external adjustment screw.



# Choke System



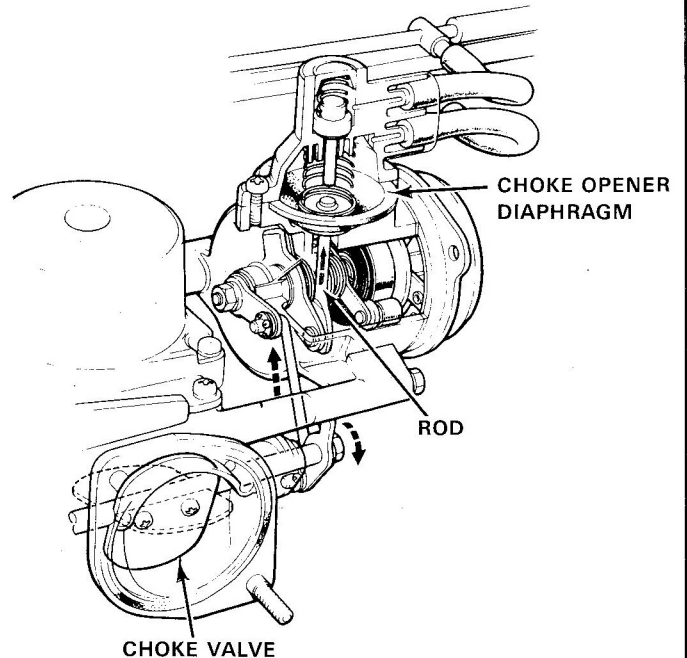
## Description

Overall operation of the automatic choke remains the same, but the following parts of the choke circuit have been redesigned:

- Choke valve and linkage
- Choke opener system
- Fast idle system

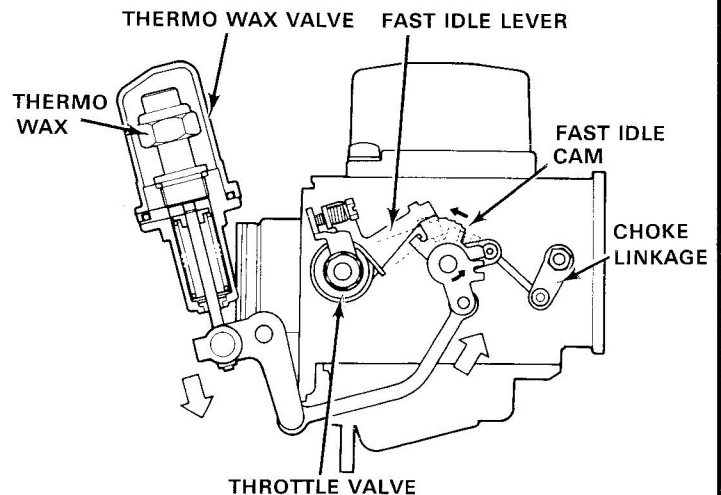
## Choke Opener System

As soon as the engine begins to start, the choke opener opens the choke butterfly valve which lets more air through the venturi to prevent an over-rich mixture. This initial choke opening is controlled by manifold vacuum applied to the opener diaphragm. The amount of vacuum bleed is controlled by a thermovalve according to coolant temperature. The movement of the choke does not affect the fast idle setting.



## Fast Idle System

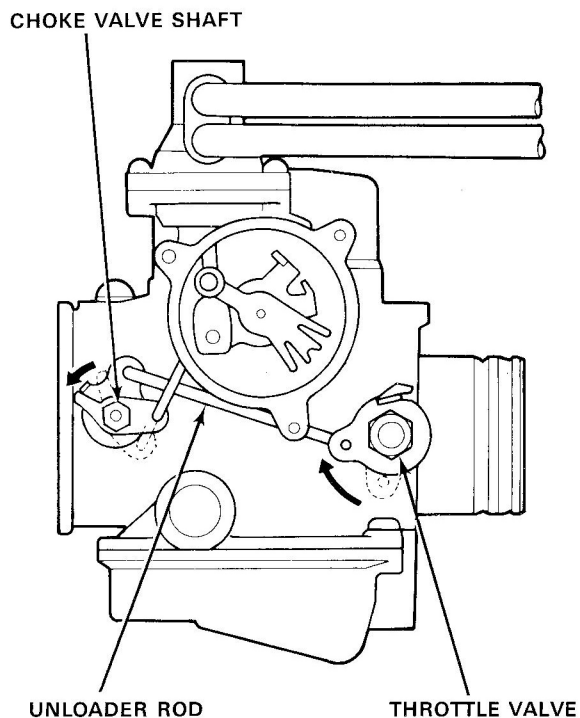
The Prelude has a new fast idle control system that uses a coolant controlled, thermo-wax valve to gradually disengage the fast idle linkage. During cold starts, when the accelerator is pushed to the floor and released slowly, the choke pushes the fast idle cam into engagement with the fast idle lever. During warm-up, the thermo-wax valve pushes on the linkage connecting it to the fast idle cam. The cam then rotates slowly and steadily, letting the fast idle lever down to lower and lower steps until it disengages from the fast idle lever.



## Choke System

### Choke Unloader

During cold running (choke closed), the unloader opens the choke whenever the accelerator pedal is pushed beyond a certain point. This prevents the air/fuel mixture from becoming too rich during rapid acceleration with a cold engine.

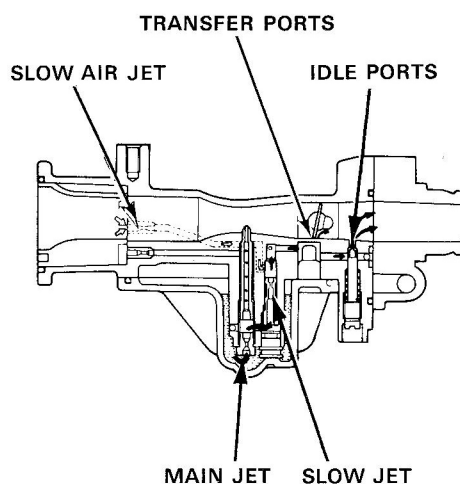


## Auxiliary Carburetor

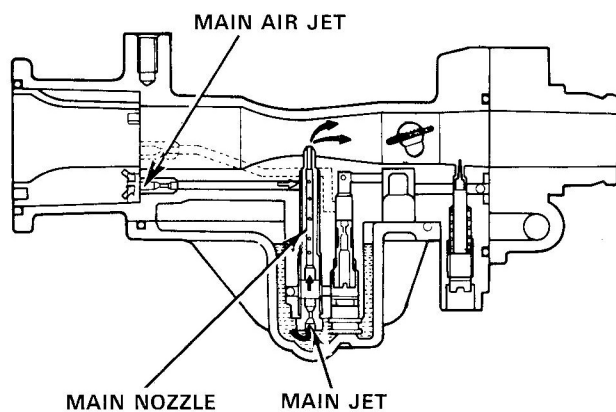
### Description

The auxiliary system is fed by one carburetor. Its operation is basically the same as the CV carburetor but it doesn't have a vacuum piston to regulate air/fuel flow. A slow speed circuit and a high speed circuit provide the fuel mixture. The auxiliary carburetor needs no adjustment.

### Slow Speed Operation



### High Speed Operation

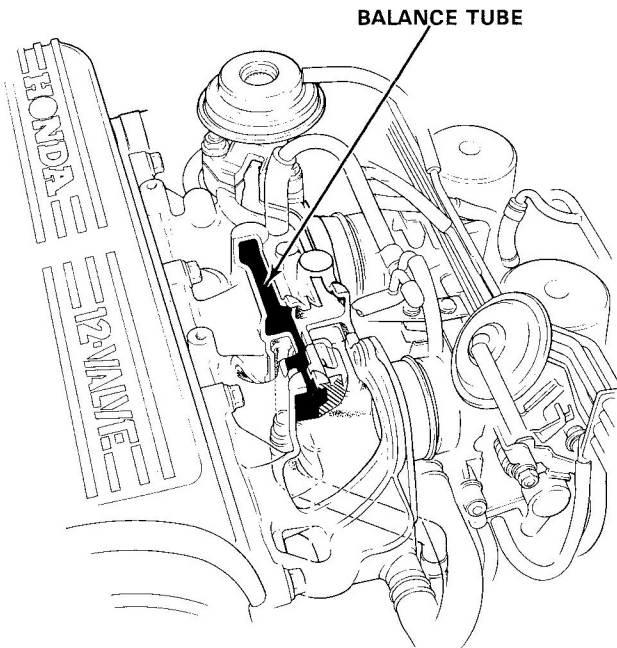




## Intake Manifold

### Description

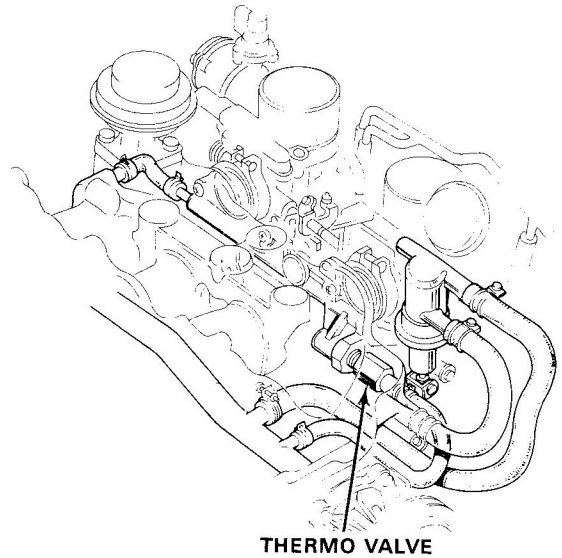
The aluminum alloy intake manifold is heated by engine coolant to maintain fuel vaporization. A balance tube connects all four intake manifold runners. This tube helps equalize the vacuum in the manifold's two chambers, which minimizes the effect of small differences in carburetor synchronization.



## Carburetor Heat Control

### Description

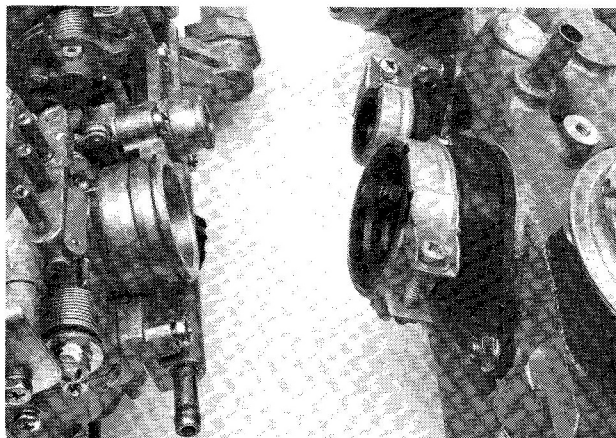
Engine coolant is fed through a passage in the carburetor's cast front bracket to prevent carburetor icing and to improve cold driveability by improving vaporization of the air/fuel mixture. Since excessive heat can cause fuel percolation, a thermo valve is used to shut off the coolant flow at temperatures above 50°C.



## Carburetor Removal/Installation

### Rubber Mounts

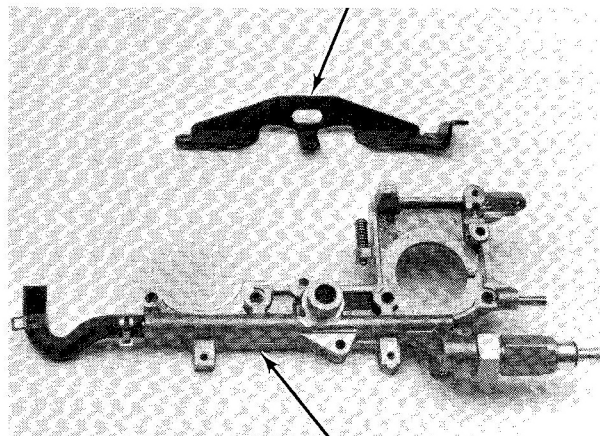
Rubber insulating mounts are used to hold the carburetors in place. If you remove the carburetors, make sure you firmly re-seat them in their mounts before tightening the retaining clamps.



### Mount Brackets

If you remove both carburetor brackets (front and rear), you must re-synchronize the carburetors.

REAR BRACKET



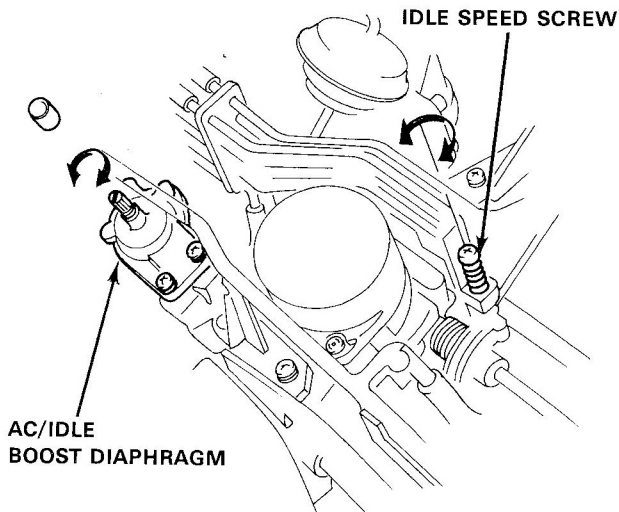
FRONT BRACKET



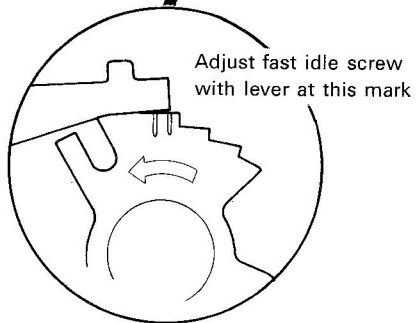
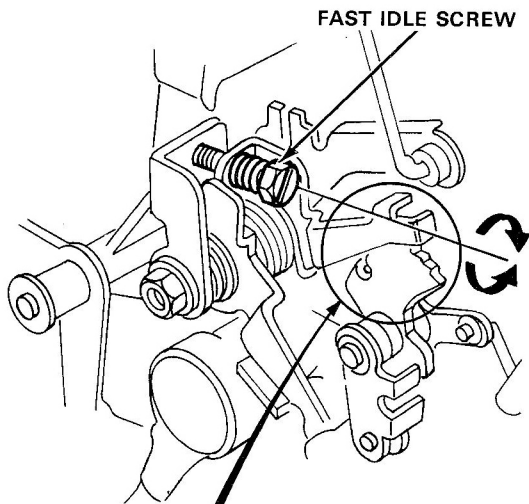
# Carburetor Adjustment

## Locations

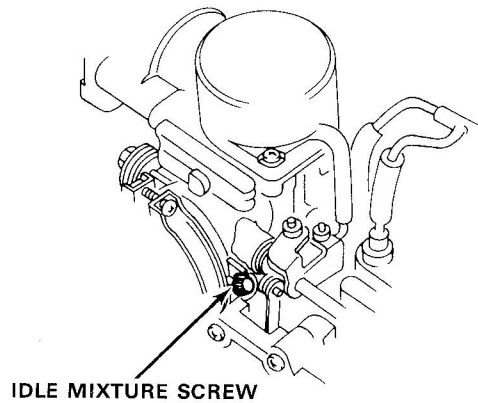
### Idle Speed



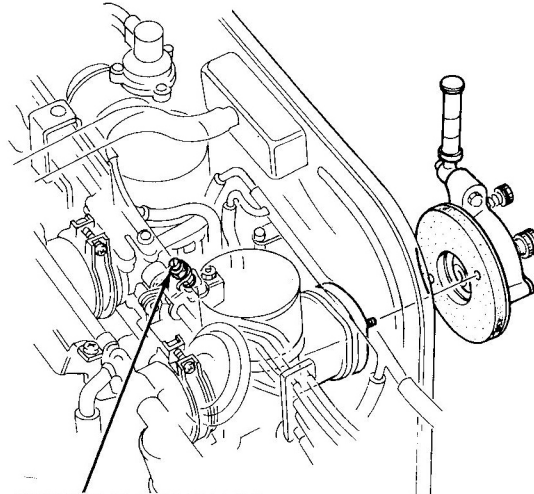
### Fast Idle Speed



### Idle Mixture

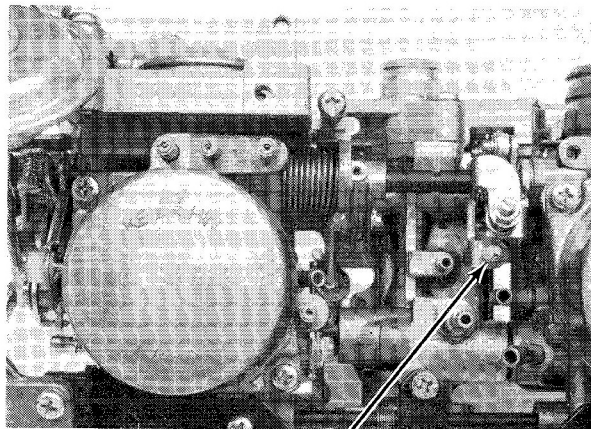


### Carburetor Synchronization



**SYNCHRONIZATION SCREW**  
Do not rev the engine with this screw; it could change the synchronization.

**CAUTION: Do not adjust the lambda linkage.**



Do not adjust

# Emission Controls



# New Emission Controls

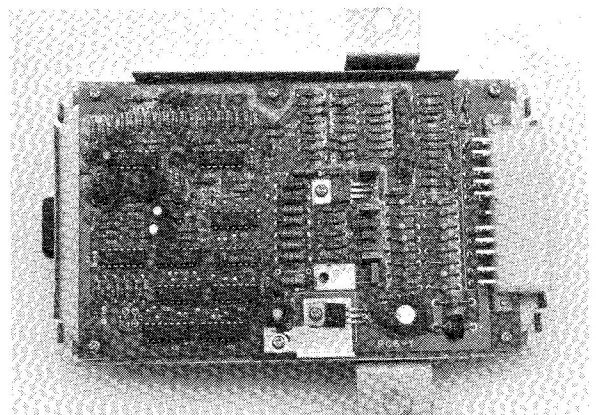
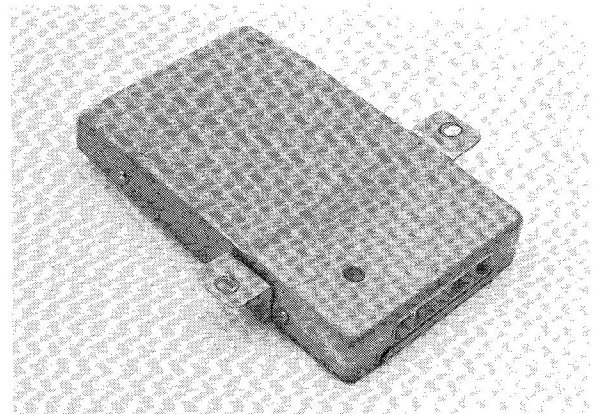
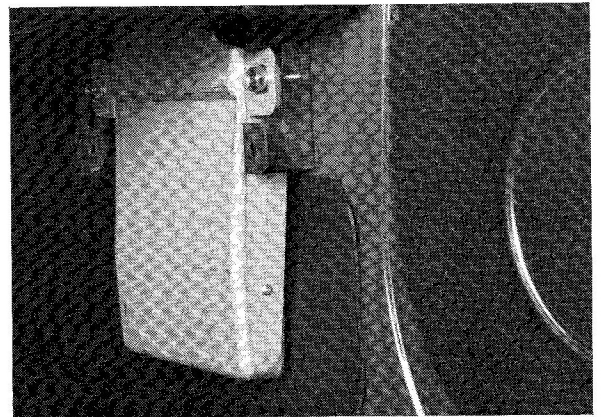
## Electronic Control Unit

An Electronic Control Unit (ECU) on the new Prelude provides more precise control of the emission control systems by monitoring:

- Temperature – (engine block temperature switch)
- Engine RPM – (distributor primary lead)
- Vehicle Load – (vacuum and vacuum switches)
- Vehicle Speed – (speedometer)

These inputs are processed by the Electronic Control Unit to control current flow to the vacuum solenoids that operate the emission control systems.

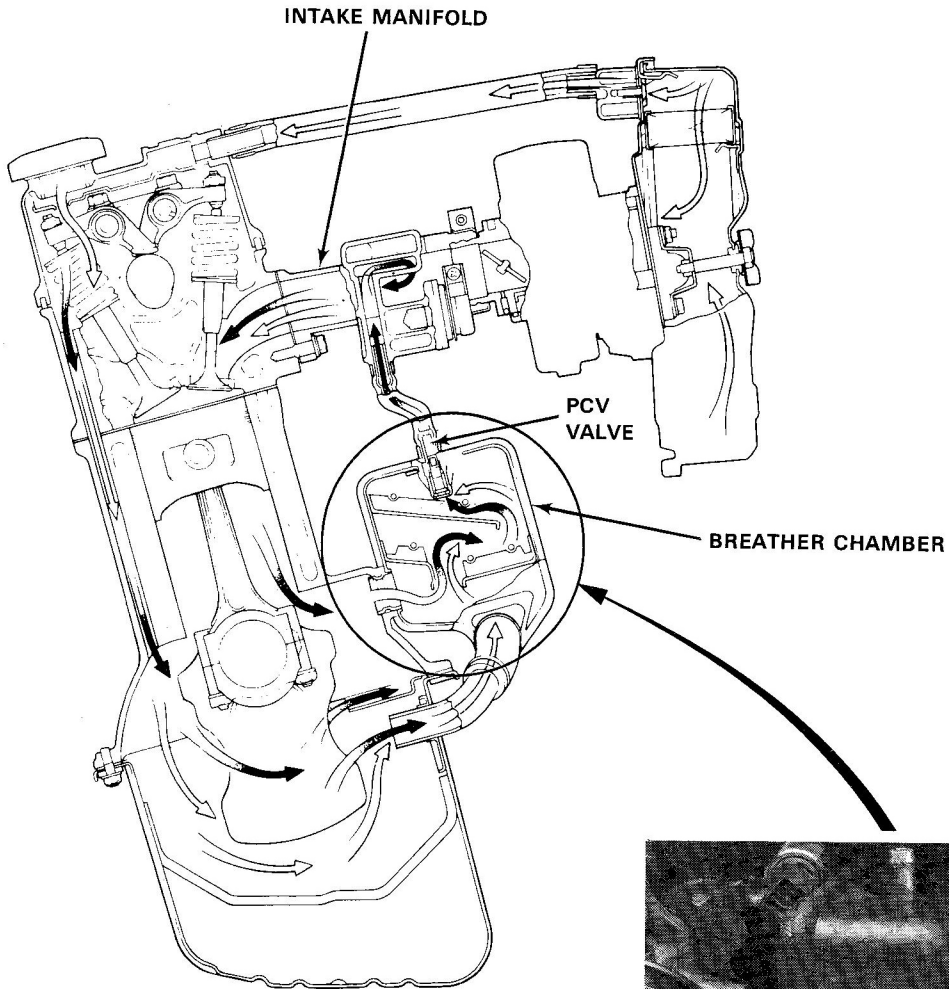
Multiple inputs allow the Electronic Control Unit to time or delay a system's operation, and to increase or decrease its operating range. To accurately test a system's performance, you must follow the functional test procedure in the service manual. The control unit is located behind the right front kick panel.



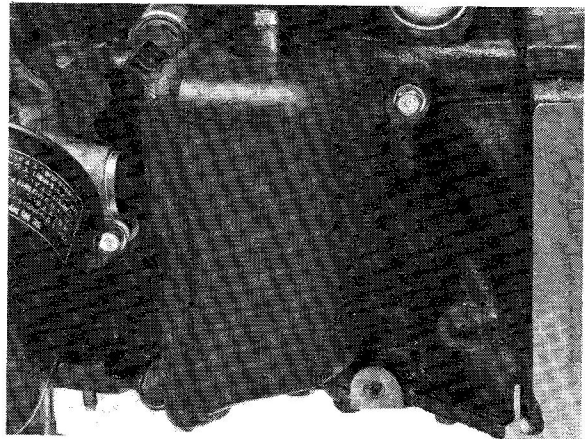


## PCV System

A new positive crankcase ventilation system is used to draw crankcase fumes into the intake manifold while the engine is running. A P.C.V. control valve is used to meter the intake of crankcase fumes. The valve is mounted on a breather chamber attached to the engine block below the intake manifold.



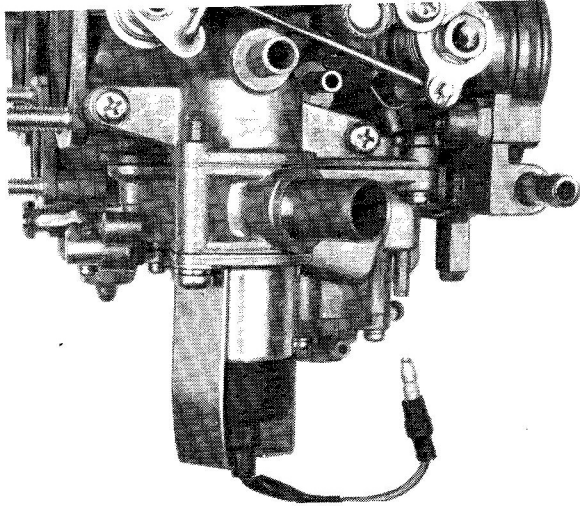
← FRESH AIR  
← BLOW-BY GAS



# New Emission Controls

## Vent Solenoid Valve

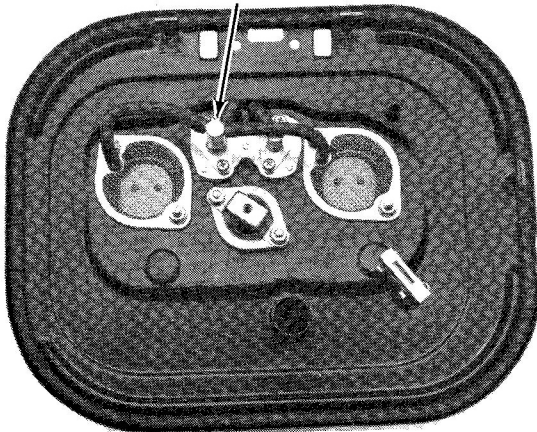
This new evaporative valve controls gasoline vapor in the float bowls. With the engine off, the valve is closed, so the vapor passes to the charcoal cannister. With the engine running, the solenoid is energized (senses alternator output) and the valve opens, venting the float bowls to the atmosphere.



## Inner Vent

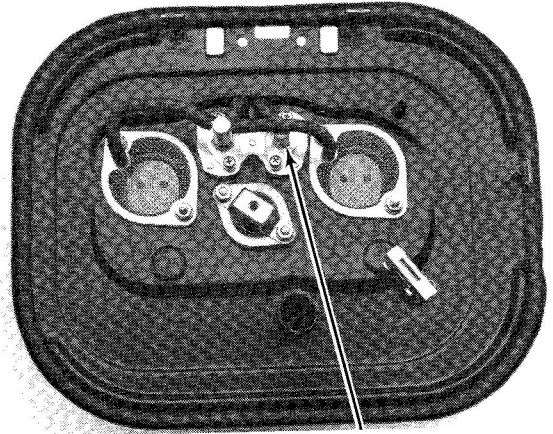
This new evaporative control blocks off the float bowl vents when the engine is not running. When the engine is running, the solenoid is energized (senses alternator output), which opens the vents and lets atmospheric pressure into the float bowls to provide normal fuel flow. The inner vent is located on the air cleaner base.

INNER  
VENT SOLENOID



## Main Air Jet (M.A.J.)

The main air jet system controls the air/fuel mixture in the carburetor main circuit. The main air jet solenoid is energized by the control unit, according to combinations of four inputs: engine temperature, rpm, load and vehicle speed. The solenoid valve richens the mixture by closing off an air bleed in the CV carburetors' main circuit (the same circuit affected by the air jet controller at high altitudes).



MAIN AIR JET  
SOLENOID



## Modifications To Existing Emission Controls

### Secondary Air

This system is now controlled by temperature, engine rpm, engine load and vehicle speed. A timer is also used on some models to let the system operate for a period of time at idle. When the secondary air solenoid is energized, manifold vacuum is allowed to open the exhaust passage to filtered air.

### EGR

This system is now controlled by the electronic control unit, according to three inputs: temperature, engine load and vehicle speed.

### Anti-Afterburn Valve

Air flow through the anti-afterburn valve is now controlled by the electronic control unit.

### Fuel Cut Solenoids

The fuel cut solenoids act on the slow circuits in the left CV carburetor and auxiliary carburetor to cut off fuel flow under certain conditions during deceleration.

# Suspension



# Front Suspension

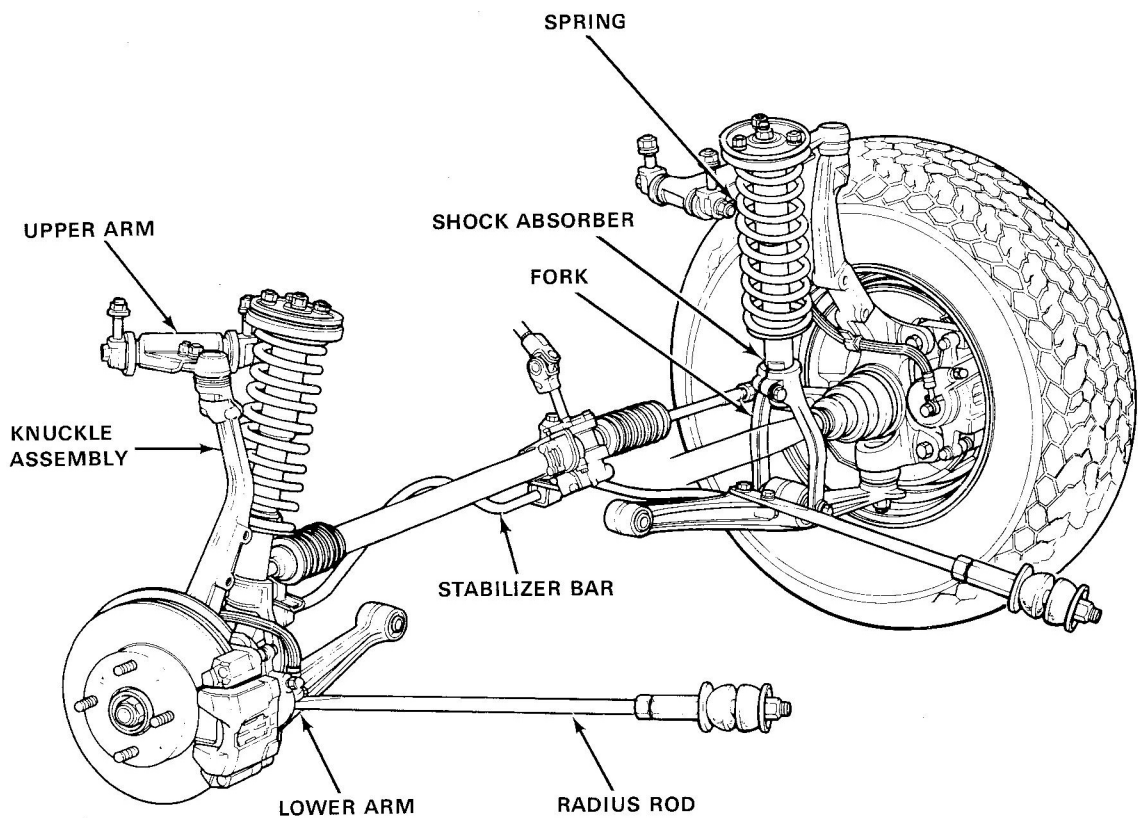
## Description

The Prelude's MacPherson strut front suspension has been changed to a double wishbone design to improve handling, as well as lower the hood line.

Here's how the double wishbone design improves handling:

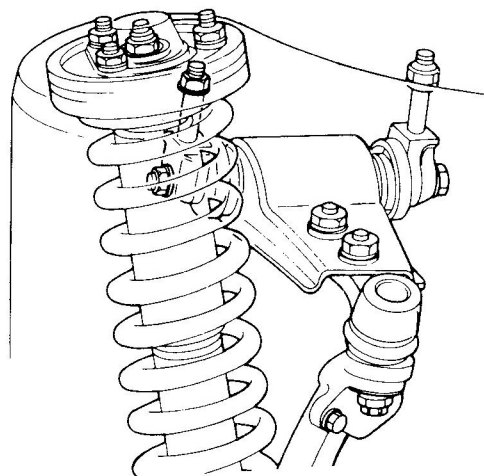
- Camber change throughout the range of suspension travel is essentially zero, which keeps the tire square with the road for maximum grip during cornering.
- Toe angle changes during suspension movement are minimized for better directional stability.
- Caster angle is virtually zero for quicker, more responsive handling.

The new suspension's main parts are a shock absorber, coil spring, lower arm, stabilizer bar, radius rod, and two new components for '83: An upper arm and a fork that connects the shock to the lower arm.





The upper arm in the double wishbone design is mounted aft of the spring, and angled (twisted) toward the front end to take up less space, and to avoid interfering with the spring and shock. This arrangement not only makes the suspension assembly narrow enough to use on a front wheel drive car with transverse engine, but it also reduces body roll on turns, and front-end dive during braking.



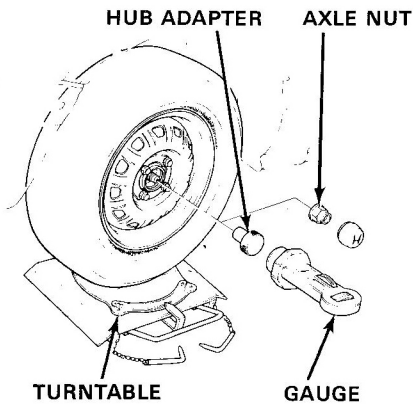
Caster has been reduced to  $0^{\circ} + 45'$ , just enough to provide good on-center feel during straight ahead driving. This was made possible by the angled upper arm design: The arm varies the caster according to vertical wheel movement, which generates self-centering force only when and in the amount needed. When the steering wheel is turned, the caster angle is zero, so the self-centering force, which tends to oppose the steering input, is minimal. However, as the car turns, some roll is imparted to the suspension and the upper arm moves, increasing the caster angle and the self-centering force.

The 1983 Prelude front suspension combines the best of both worlds: Directional stability and good steering response.

# Front Suspension

## Alignment

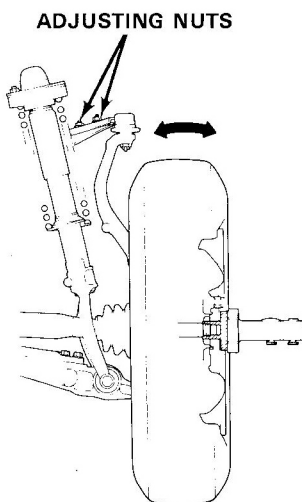
Since steering angles are critical for good handling, use the special Honda hub adapter for the camber/caster gauge. The alignment area and the car *must* be level and the car's wheels must be on moveable turntables. First adjust camber, then caster, then toe.



**CAUTION:** Replace the axle nuts once you remove them to install the hub adapter. Make sure you properly torque the new nuts.

## Camber

Camber on the new Prelude is 0° because the double wishbone design practically eliminates camber change during suspension movement. To adjust camber, loosen the two upper ball joint nuts and move the upper ball joint outward for more positive camber and inward for more negative.

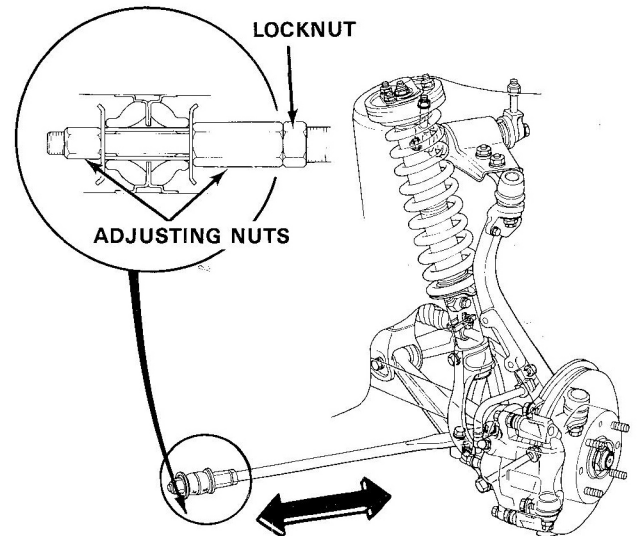


**CAUTION:** Make sure you re-torque the self-locking ball joint nuts to specifications.

## Caster

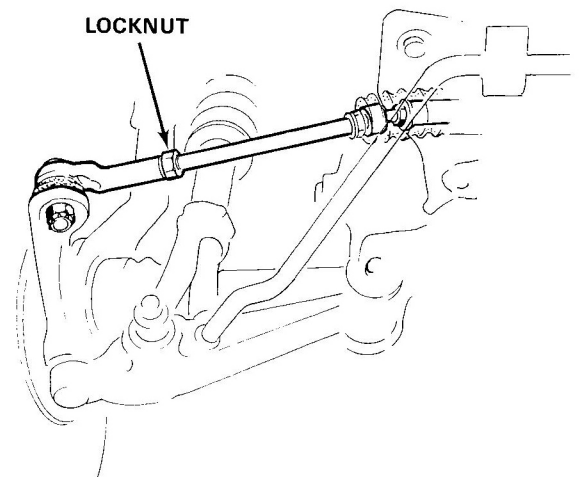
Caster is now adjustable at the radius rod. For positive caster, shorten the rod and for negative caster, lengthen it.

**CAUTION:** Be sure to re-torque all nuts.



## Toe

Toe is adjusted the same way as on the previous model. Since the double wishbone suspension minimizes toe change during suspension loading and unloading, the toe is set at 0 mm. Zero toe in the front end improves high speed directional stability.



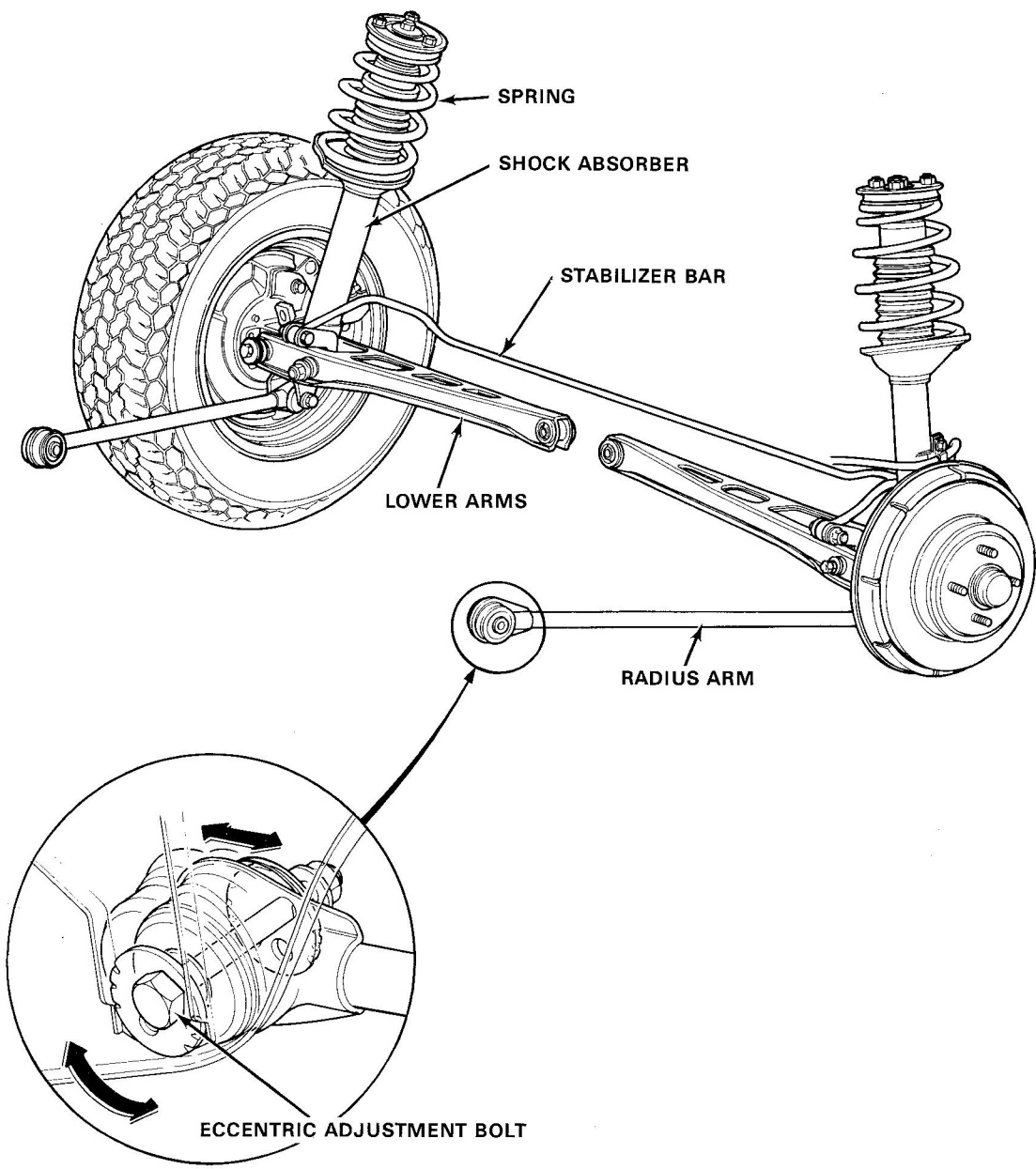
**NOTE:** Don't make any adjustments to front end alignment unless you're sure the car has an alignment problem.



# Rear Suspension

## Description

To provide a more comfortable ride, the rear shock absorbers are now offset from their springs. During suspension loading, this results in less binding in the shocks than if they were installed at the same angle as the springs. The lower arms have been lengthened to minimize track changes and improve the ride.



As in the past, toe is the only adjustable angle on the rear suspension. To change it, adjust the eccentric at the end of the radius rod where it bolts to the chassis.

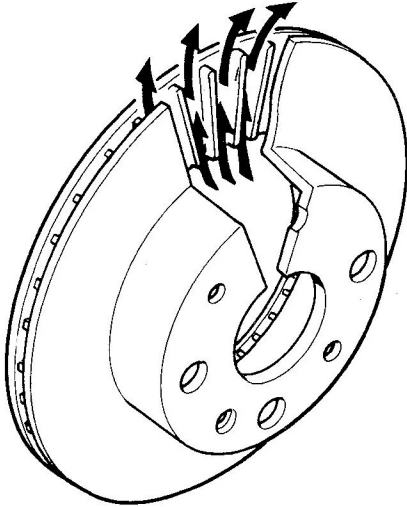
# Brakes



# Brakes

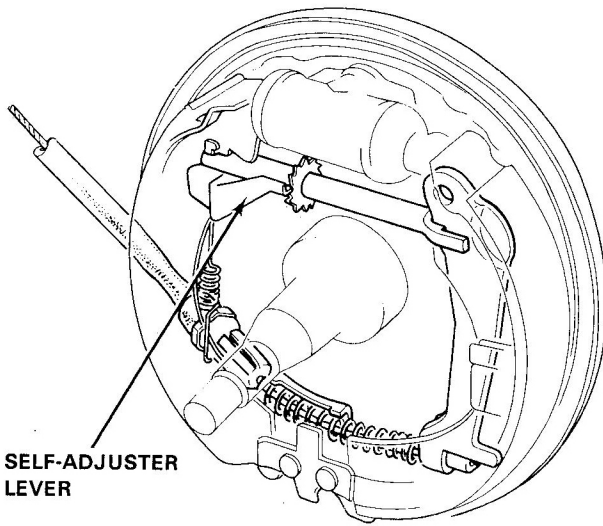
## Front

The front brakes now have ventilated discs. The brakes are serviced the same way as other Honda models using this design.



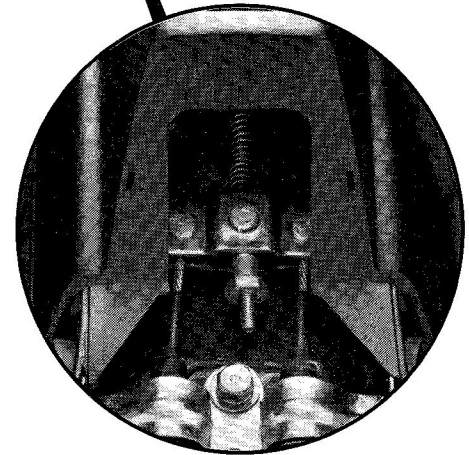
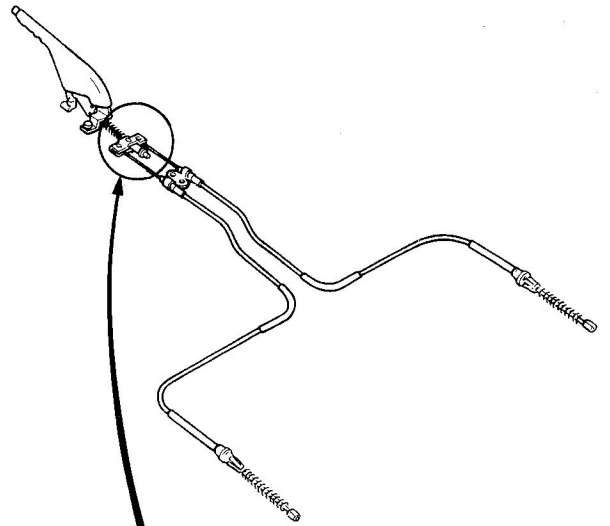
## Rear

The rear brakes remain drum type, but their self adjusters are now like those on the Accord.



## Parking

The adjuster for the parking brake mechanism is now at the parking brake lever.



# Electrical



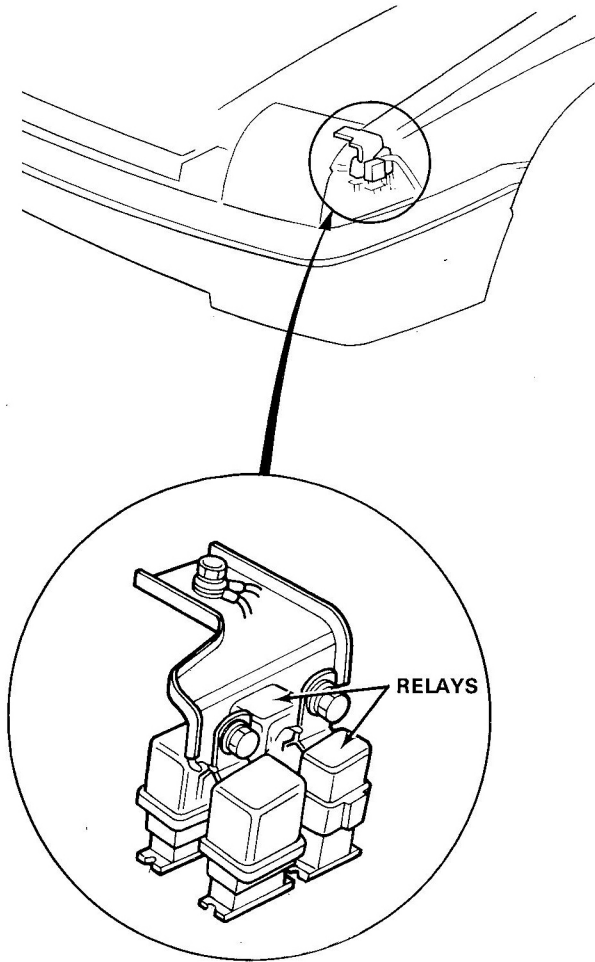
# Headlights

## Description

The new Prelude has retractable headlights to maintain its aerodynamic hood line. Each retracting mechanism is operated by its own motor and linkage. There are two ways to raise the headlights:

- Pushing a button on the instrument panel will move the headlights up or down, but not turn them on.
- When you turn the light switch to the headlight position, the lights come up and go on.

This system uses two relays, one for each motor, and a control unit located underneath the left side of the dash by the fuse panel.

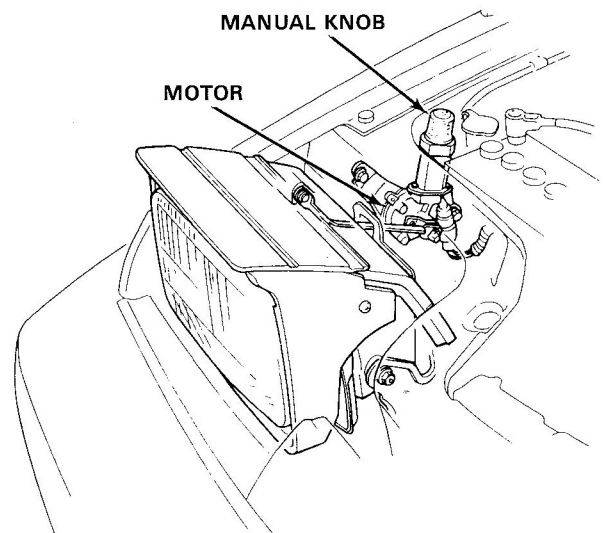


The following chart shows when the headlights should be up or down and when they should be on.

SWITCH POSITION	LIGHTS		
	HEAD-LIGHTS	PARKING LIGHTS/TAIL LIGHTS/LICENSE PLATE LIGHT/PANEL LIGHT	HEADLIGHTS POSITION
OFF ↓	OFF	OFF	
PARK ↓	OFF	ON	
HI/LOW ↓	ON	ON	
PARK ↓	OFF	ON	
OFF ↓	OFF	OFF	

A knob on each motor allows the headlights to be independently cranked up or down by hand.

**CAUTION:** Do not turn this knob if the lights are working properly.

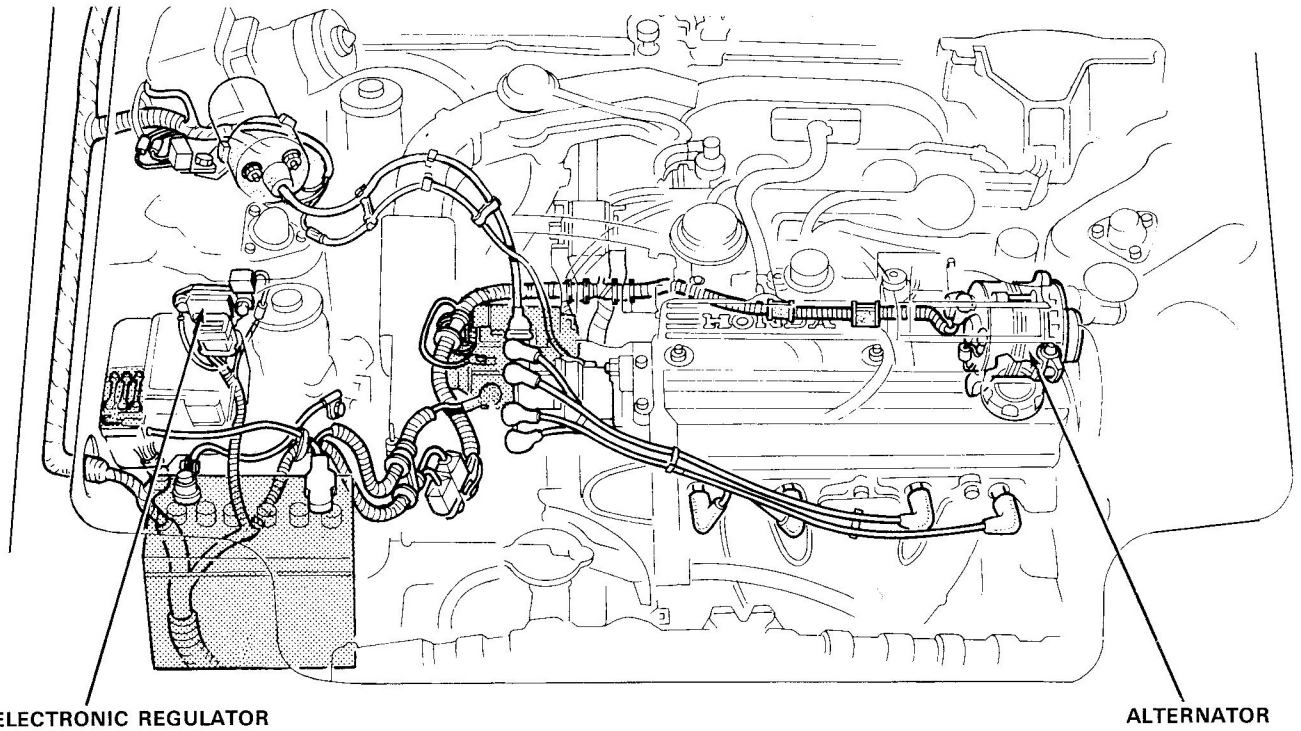




# Charging System

## Description

The charging system for the '83 Prelude includes a 60-amp output alternator and new electronic regulator. The system is similar to the Accord and should be serviced the same way.



The 1983 Prelude has many new technical changes which improve its performance as well as its serviceability. These changes challenge the state of the art in automotive design and provide an exciting new car in the Honda lineup.

**H O N D A**

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