

PROPANE

ORIGINAL EQUIPMENT
BY CHRYSLER CANADA LTD.

PROPANE



1986

OPERATING INSTRUCTIONS
& PRODUCT INFORMATION
MANUAL SUPPLEMENT

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CHRYSLER
CANADA LTD.

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NOTE:

This booklet is a supplement and contains information relative to the propane equipment installed in this vehicle by Chrysler Canada Ltd. For complete operating instructions and product information, refer also to the *Operating Instructions and Product Information* manual (the owner's manual) supplied with the vehicle.

GENERAL INFORMATION

Your vehicle is designed to operate on propane motor fuel, an excellent, clean-burning energy source with an assured Canadian supply.

Chrysler-built vehicles equipped with propane-fueled engines are identified by one of the following characters in the eighth (engine) position of the Vehicle Identification Number (V.I.N.):

Eighth Character	Engine
Z	5.2-litre (318 CID) 8-cyl. Standard Duty Car and Truck & Heavy Duty Car
7	5.2-litre (318 CID) 8-cyl. High Performance Car

SAFETY

Propane is a hydrocarbon fuel which has been proved safe and reliable if handled properly. For safe operation of your vehicle, the following precautions should be observed:

- A fixed liquid level gauge bleeder valve (spit valve) is installed adjacent to the fuel filler valve behind the fuel filler door. When opened during filling, it indicates when the maximum allowable (80%) fuel level in the tank has been reached by emitting a steady stream of liquid propane. Do not attempt to force open or tamper with the fuel filler valve for any reason, because a sudden release of propane may occur, possibly causing injury.

- Propane is colourless and odourless, so an odorant (ethyl mercaptan) is added to make its presence easy to detect, even in tiny amounts. Strong "propane" odours during engine start and shut-down are considered normal and are no cause for concern. A **PERSISTENT** "propane" odour indicates a possible leak. Have the vehicle checked immediately by a qualified technician.
- Do not park your vehicle near any source of excessive heat, or open flame.
- Like gasoline vapour, propane is heavier than air, and if a leak occurs it will tend to collect in low areas. It is therefore preferable to avoid parking either type of vehicle near sewers, grease pits, or similar below-ground collection sites.
- If your vehicle is routinely stored in an enclosed area, it is recommended that the area be provided with some method of positive (forced air) ventilation with a floor-level pickup. A propane "sniffer" alarm system in the parking area is also recommended to detect fuel leaks.
- If the vehicle is to be stored in a garage for a long period of time, close the manual service valve at the fuel tank by turning it fully clockwise.
- If you have your vehicle undercoated, make sure that the propane fuel system components are not undercoated, to prevent clogging of the safety relief valves.

OPERATION

STARTING PROCEDURE

NOTE: The recommended starting procedure for your propane vehicle is significantly different from that of the equivalent gasoline vehicle.

Depress and **HOLD** the accelerator pedal approximately 1/4 way down. Turn the ignition key to the **START** position and release it when the engine starts. In the case of a flooded engine, depress the accelerator pedal fully to the floor and hold it there while cranking the engine. Do not crank the engine for more than 15-second intervals to prevent the starter from overheating. Wait at least 10 seconds between such intervals.

In extremely cold conditions of -20°C (-4°F) or below, allow the engine to run at idle for a period of 2 minutes after starting to warm up the engine coolant before driving off. Racing a propane engine during this period will tend to cause, rather than avoid, stalling. Keep the engine speed down.

For vehicles equipped with block heaters, the idling period can be eliminated by plugging in the block heater approximately two hours before the vehicle is expected to be started. The block heater can be turned on automatically at a set time by using an inexpensive household timer.

FLOODED ENGINE BELOW -20°C (-4°F)

Too much speed, too soon. If the speed is not kept low enough and the engine becomes completely flooded, further cranking is futile. A period of 20 to 40 minutes without cranking is usually required before the engine can be re-started. Extra heat applied to the vaporizer is the

only way to shorten this waiting time (hot water or a hair dryer are effective methods). Or, if the vehicle has a block heater, it can be plugged in for 15 to 20 minutes to clear flooding.

REFUELING

Use only propane fuel with the designation "Grade 1" or with the equivalent U.S. designation "HD-5". It is available at most propane motor fuel dispensing outlets. Other types of LPG fuel may cause problems ranging from hard starting to severe engine damage.

Refueling should be done by qualified personnel only. For safety reasons, do not fill the tank beyond the 80% full level.

MAINTENANCE

Scheduled Maintenance recommended in the *Operating Instructions and Product Information* booklet (owner's manual) for the gasoline vehicle is also applicable to the same vehicle with a propane-fueled engine, except for those items which are unique to the gasoline engine or are specifically mentioned below. For trucks with a GVW rating greater than 3855 kg (8,500 lbs.), use the Heavy Duty Cycle maintenance chart specified for vehicles equipped with a single air pump. *The propane fuel system should be serviced only by qualified propane vehicle mechanics.*

ENGINE OIL

Use the same oil type and the same oil change interval as recommended for gasoline-fueled vehicles in the vehicle's owner's manual. (For vehicles equipped with the 5.2 L high-performance engine, follow the oil recommendations for the high-performance 318-4 Bbl. gasoline engine.)

Many oils sold at present exclusively for use in propane engines do not contain all the additives necessary for proper engine lubrication, and may cause excessive wear of some engine components. These oils are often, although not always, referred to as *low ash*, and should not be used.

The use of any conventional oil that meets the requirements set out in the gasoline owner's manual will ensure excellent lubrication.

DO NOT EXTEND THE OIL CHANGE INTERVAL.

Even though the oil may not show visible signs of deterioration, thorough laboratory analysis will show that it is gradually losing its low-temperature lubricating properties, and continued use beyond the change interval could cause engine damage. Most common laboratory tests do not reveal this type of change in the oil.

SPARK PLUGS

Spark plugs should be changed at the following intervals, or earlier if any indication of misfiring occurs.

Cars and Trucks under 3855 kg (8,500 lbs.) GVW rating.	Every 48 000 km
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Trucks over 3855 kg (8,500 lbs.) GVW rating.	Every 29 000 km
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The entire set should be replaced if there is any malfunction due to a faulty spark plug. Use the same type of spark plug as recommended for gasoline-fueled vehicles in the owner's manual.

ANTI-FREEZE CONCENTRATION

For reliable engine operation following cold start-up, particularly below -20°C (-4°F), the engine coolant must contain no less than 55% and no more than 65% ethylene glycol, to provide coolant protection to -45°C (-49°F).

FUEL HOSES

Inspection of hoses should be performed whenever the fuel system is serviced. Inspect hoses for surface cracking, scuffing or worn spots. If there is any evidence of these conditions, replace hose immediately. Propane fuel hoses should be replaced at intervals not exceeding five (5) years. Replacement hoses MUST be of the same type and construction as the original.

FUEL FILTER

The fuel filter element (located within the fuellock-filter) should be replaced initially at 10 000 km, and thereafter at 28 000-km intervals.

A plugged fuel filter can be caused by contaminants in the fuel or fuel tank and may limit the speed at which a vehicle can be driven. If this condition occurs, the filter should be replaced. Under normal operating conditions, the filter should be replaced at the interval specified. Should an excessive amount of dirt accumulate in the fuel tank, more frequent replacement may be necessary.

PROPANE FUEL ECONOMY

When used as a motor fuel, propane is sold by the litre. Because its density is much lower than gasoline, a litre of propane contains only 71-77% of the energy contained in a litre of gasoline (the exact percentage depends primarily on variations in energy content between different blends of gasoline). Approximately half of this apparent "loss" in energy is recoverable, because propane engines can be set up to operate more efficiently than gasoline engines, particularly in city traffic and cold weather. As a result, propane fuel economy is usually in the range of 80-90% of that of the corresponding gasoline vehicle. Propane's price per litre is usually well below this ratio, resulting in significant net savings per kilometre driven.

FUEL TANK CAPACITIES

Fuel tank capacities for Chrysler-built propane vehicles are based on the maximum allowable filling volume (80% of total volume). To obtain "Water Capacity" rating, multiply capacity shown by 1.25.

MODEL	CAPACITY - LITRES (Imp. Gal.)	
	Main Tank	Aux. Tank
Diplomat & Caravelle*	79.1 (17.4)	
Vans & Wagons:		
109.6" W.B.	99.6 (21.9)	44.8 (9.9)
127.6" W.B.	99.6 (21.9)	70.7 (15.5)
Maxi-Vans & Wagons	154.6 (34.0)	70.7 (15.5)
Pickups	117.4 (25.8)	

*Rear-wheel drive