# **LUBRICATION AND MAINTENANCE**

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# **LUBRICANTS**

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# DESCRIPTION AND OPERATION

# PARTS AND LUBRICANT RECOMMENDATIONS

When service is required, DaimlerChrysler Corporation recommends that only Mopar® brand parts, lubricants and chemicals be used. Mopar provides the engineered products for best servicing DaimlerChrysler Corporation vehicles.

# CLASSIFICATION OF LUBRICANTS

# DESCRIPTION

Only lubricants bearing designations defined by the following organization should be used to service a DaimlerChrysler Corporation vehicle.

- Society of Automotive Engineers (SAE)
- American Petroleum Institute (API) (Fig. 1)
- National Lubricating Grease Institute (NLGI) (Fig. 2)

# SAE VISCOSITY RATING

An SAE viscosity grade is used to specify the viscosity of engine oil. These are specified with a dual SAE viscosity grade which indicates the cold-to-hot temperature viscosity range. Example SAE 5W-30 = multiple grade engine oil.

2 DaimlerChrysler Corporation only recommends

# API QUALITY CLASSIFICATION

multiple grade engine oils.

This symbol (Fig. 1) on the front of an oil container means that the oil has been certified by the American Petroleum Institute (API) to meet all the lubrication requirements specified by DaimlerChrysler Corporation.

Refer to Group 9, Engine for gasoline engine oil specification.



9400-9

# Fig. 1 API Symbol

# **GEAR LUBRICANTS**

SAE ratings also apply to multiple grade gear lubricants. In addition, API classification defines the lubricants usage. Such as API GL-5 and SAE 80W-90.

# **DESCRIPTION AND OPERATION (Continued)**

#### **LUBRICANTS AND GREASES**

Lubricating grease is rated for quality and usage by the NLGI. All approved products have the NLGI symbol (Fig. 2) on the label. At the bottom NLGI symbol is the usage and quality identification letters. Wheel bearing lubricant is identified by the letter "G". Chassis lubricant is identified by the latter "L". The letter following the usage letter indicates the quality of the lubricant. The following symbols indicate the highest quality.

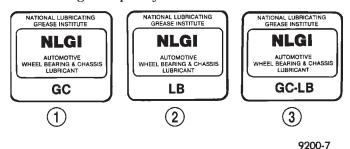


Fig. 2 NLGI Symbol

- 1 WHEEL BEARINGS
- 2 CHASSIS LUBRICATION
- 3 CHASSIS AND WHEEL BEARINGS

#### INTERNATIONAL SYMBOLS

DaimlerChrysler Corporation uses international symbols to identify engine compartment lubricant and fluid check and fill locations (Fig. 3).

# FLUID CHECK/FILL POINTS AND LUBRICATION LOCATIONS

The fluid check/fill points and lubrication locations are located in each applicable Sections.

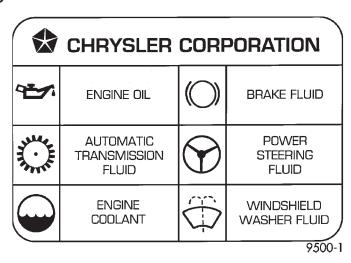


Fig. 3 International Symbols

# LUBRICATION POINT LOCATIONS

Lubrication point locations are located in each applicable Sections.

# **SPECIFICATIONS**

#### **FLUID CAPACITIES**

<sup>\*</sup>Capacities include 1 qt. for coolant reserve tank.

2000

# MAINTENANCE SCHEDULES

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# **DESCRIPTION AND OPERATION**

# MAINTENANCE SCHEDULES

There are two maintenance schedules that show proper service for your vehicle.

First is Schedule – **A**. It lists all the scheduled maintenance to be performed under "normal" operating conditions.

Second is Schedule –  ${\bf B}$ . It is a schedule for vehicles that are operated under the following conditions:

- Frequent short trip driving less than 5 miles (8 km)
  - Frequent driving in dusty conditions
  - Extensive idling
- More than 50% of the driving is at sustained high speeds during hot weather, above 90° F (32° C)

# **SPECIFICATIONS**

# UNSCHEDULED INSPECTION

#### At Each Stop For Fuel

- · Check engine oil level and add as required.
- Check windshield washer solvent and add as required.

#### Once A Month

- Check tire pressure and look for unusual wear or damage.
- Inspect the battery and clean and tighten terminals as required.
- Check fluid levels of coolant reservoir, brake master cylinder, power steering and transmission. Add fluid as required.
- Check all lights and all other electrical items for correct operation.

#### At Each Oil Change

- Inspect the exhaust system.
- Inspect brake hoses.
- Inspect the CV joints and front suspension component boots and seals.

- Rotate the tires at each oil change interval shown on Schedule A (7,500 miles 12 000 km) or every other interval on Schedule B (6,000 miles 10 000 km).
- Check the engine coolant level, hoses, and clamps.

If mileage is less than 7,500 miles (12 000 km) yearly, replace the engine oil filter at each oil change.

## EMISSION CONTROL SYSTEM MAINTENANCE

The scheduled emission maintenance listed in **bold type** on the Maintenance Schedules, must be done at the mileage specified to assure the continued proper functioning of the emission control system. These, and all other maintenance services included in this manual, should be done to provide the best vehicle performance and reliability. More frequent maintenance may be needed for vehicles in severe operating conditions such as dusty areas and very short trip driving.

# FLUID FILL POINTS AND LUBRICATION LOCATIONS

The fluid fill/check locations and lubrication locations are located in each applicable group.

# SCHEDULE - A

#### 7,500 Miles (12 000 km) or at 6 months

- Change the engine oil.
- Replace the engine oil filter.

# 15,000 Miles (24 000 km) or at 12 months

- Change the engine oil.
- Replace the engine oil filter.
- Adjust the drive belt tension.

#### 22,500 Miles (36 000 km) or at 18 months

- Change the engine oil.
- Replace the engine oil filter.
- $\bullet$  Inspect the front brake pads and rear brake linings.

#### SPECIFICATIONS (Continued)

# 30,000 Miles (48 000 km) or at 24 months

- Change the engine oil.
- Replace the engine oil filter.
- Lubricate the front suspension lower ball joint.
- Inspect the tie rod ends and boot seals.
- Adjust the drive belt tension.
- Replace the engine air cleaner element (filter).
  - Replace the engine spark plugs
  - Change the automatic transaxle fluid.

# 37,500 Miles (60 000 km) or at 30 months

- Change the engine oil.
- Replace the engine oil filter.

#### 45,000 Miles (72 000 km) or at 36 months

- Change the engine oil.
- Replace the engine oil filter.
- Inspect the front brake pads and rear brake linings.
  - Adjust the drive belt tension.
- Flush and replace the engine coolant at 36 months, regardless of mileage.

# 52,500 Miles (84 000 km) or at 42 months

- Change the engine oil.
- Replace the engine oil filter.
- Flush and replace the engine coolant if not done at 36 months.

# 60,000 Miles (96 000 km) or at 48 months

- Change the engine oil.
- Replace the engine oil filter.
- Check the PCV valve and replace, if necessary. Not required if previously changed.\*
  - Lubricate the front suspension lower ball joints.
  - Replace the drive belts.
- Replace the engine air cleaner element (filter).
  - Replace the ignition cables.
  - Replace the spark plugs.
  - · Change the automatic transaxle fluid.

# 67,500 Miles (108 000 km) or at 54 months

- Change the engine oil.
- Replace the engine oil filter.
- Inspect the front brake pads and rear brake linings.

# 75,000 Miles (120 000 km) or at 60 months

- Change the engine oil.
- Replace the engine oil filter.
- Adjust the drive belt tension.
- Flush and replace engine coolant if has been 30,000 miles (48 000 km) or 24 months since last change.

#### 82,500 Miles (132 000 km) or at 66 months

- Change the engine oil.
- Replace the engine oil filter.
- Flush and replace engine coolant if it has been 30,000 miles (48 000 km) or 24 months since last change.

#### 90,000 Miles (144 000 km) or at 72 months

- Change the engine oil.
- Replace the engine oil filter.
- Check the PCV valve and replace, if necessary. Not required if previously changed.\*
  - Lubricate the front suspension lower ball joints.
- Inspect the front brake pads and rear brake linners.
  - Adjust the drive belt tension.
- Replace the engine air cleaner element (filter).
  - Replace the spark plugs.
- Inspect the serpentine drive belt, replace if necessary. This maintenance is not required if the belt was previously replaced.
  - Change the automatic transaxle fluid.

# 97,500 Miles (156 000 km) or at 78 months

- Change the engine oil.
- Replace the engine oil filter.

# 105,000 Miles (168 000 km) or at 84 months

- Change the engine oil.
- Replace the engine oil filter.
- Replace the engine timing belt.
- Adjust the drive belt tension.

\*This maintenance is recommended by Daimler-Chrysler Corporation to the owner but is not required to maintain the emissions warranty.

NOTE: Inspection and service should also be performed anytime a malfunction is observed or suspected. Retain all receipts.

# SCHEDULE - B

#### 3,000 Miles (5 000 km)

· Change the engine oil.

# 6,000 Miles (10 000 km)

- Change the engine oil.
- Replace the engine oil filter.

# 9,000 Miles (14 000 km)

- Change the engine oil.
- Inspect the front brake pads and rear brake linings.

# **SPECIFICATIONS (Continued)**

# 12,000 Miles (19 000 km)

- Change the engine oil.
- Replace the engine oil filter.

#### 15,000 Miles (24 000 km)

- Change the engine oil.
- Adjust the drive belt tension.
- Inspect the engine air cleaner element (filter). Replace as necessary.\*
- Change the automatic transaxle fluid/filter and adjust the bands.

# 18,000 Miles (29 000 km)

- Change the engine oil.
- Replace the engine oil filter.
- Inspect the front brake pads and rear brake linings.

# 21,000 Miles (34 000 km)

• Change the engine oil.

# 24,000 Miles (38 000 km)

- Change the engine oil.
- Replace the engine oil filter.

# 27,000 Miles (43 000 km)

- Change the engine oil.
- Inspect the front brake pads and rear brake linings.

#### 30,000 Miles (48 000 km)

- Change the engine oil.
- Replace the engine oil filter.
- Inspect the PCV valve and replace as necessary.\*
  - Lubricate the front suspension lower ball joints.
  - Adjust the drive belt tension.
- Replace the **engine air cleaner element (fil-ter).** 
  - Replace the **spark plugs**
- Change the automatic transaxle fluid/filter and adjust bands.

#### 33,000 Miles (53 000 km)

• Change the engine oil.

# 36,000 Miles (58 000 km)

- Change the engine oil.
- Replace the engine oil filter.
- Inspect the front brake pads and rear brake linings.
  - Flush and replace the engine coolant.

#### 39,000 Miles (62 000 km)

Change the engine oil.

# 42,000 Miles (67 000 km)

- Change the engine oil.
- Replace the engine oil filter.

#### 45,000 Miles (72 000 km)

- Change the engine oil.
- Inspect the front brake pads and rear brake linngs.
- Inspect the **engine air cleaner element (filter).** Replace as necessary.\*
  - Adjust the drive belt tension.
- Change the automatic transaxle fluid/filter and adjust bands.

#### 48,000 Miles (77 000 km)

- Change the engine oil.
- Replace the engine oil filter.

# 51,000 Miles (82 000 km)

- Change the engine oil.
- Flush and replace the engine coolant.

# 54,000 Miles (86 000 km)

- Change the engine oil.
- Replace the engine oil filter.
- Inspect the front brake pads and rear brake linings.

## 57,000 Miles (91 000 km)

Change the engine oil.

# 60,000 Miles (96 000 km)

- Change the engine oil.
- Replace the engine oil filter.
- Inspect the PCV valve and replace if necessary.\*
  - Lubricate the front suspension lower ball joints.
  - Replace the drive belts.
- Replace the engine air cleaner element (filter).
  - Replace the ignition cables
  - Replace the spark plugs
- Check and replace, if necessary, the **engine timing belt** on 3.0 liter engines.
- Change the automatic transaxle fluid/filter and adjust bands.

# 63,000 Miles (101 000 km)

- Change the engine oil.
- Inspect the front brake pads and rear brake linings.

# 66,000 Miles (106 000 km)

- Change the engine oil.
- Replace the engine oil filter.

# SPECIFICATIONS (Continued)

# 69,000 Miles (110 000 km)

• Change the engine oil.

# 72,000 Miles (115 000 km)

- Change the engine oil.
- Replace the engine oil filter.
- Inspect the front brake pads and rear brake linings.

# 75,000 Miles (120 000 km)

- Change the engine oil.
- Adjust the drive belt tension.
- Inspect the **engine air cleaner element (filter)** and replace as necessary.\*
- Change the automatic transaxle fluid/filter and adjust bands.

#### 78,000 Miles (125 000 km)

- · Change the engine oil.
- Replace the engine oil filter.

# 81,000 Miles (130 000 km)

- Change the engine oil.
- Flush and replace the engine coolant.
- Inspect the front brake pads and rear brake linings.

# 84,000 Miles (134 000 km)

- Change the engine oil.
- Replace the engine oil filter.

# 87,000 Miles (139 000 km)

• Change the engine oil.

#### 90,000 Miles (144 000 km)

- Change the engine oil.
- Replace the engine oil filter.
- Inspect front brake pads and rear brake linings
- Check the **PCV valve** and replace if necessary. Not required if previously changed.\*
  - Lubricate the front suspension lower ball joint.
- Replace the engine air cleaner element (filter).

- Replace the spark plugs
- Change the automatic transaxle fluid/filter and adjust the bands.

# 93,000 Miles (149 000 km)

• Change the engine oil.

#### 96,000 Miles (154 000 km)

- Change the engine oil.
- Replace the engine oil filter.

#### 99,000 Miles (158 000 km)

- Change the engine oil.
- Inspect the front brake pads and rear brake linings.

#### 102,000 Miles (163 000 km)

- Change the engine oil.
- Replace the engine oil filter.

# 105,000 Miles (168 000 km)

- Replace the engine timing belt.
- Change the engine oil.
- Adjust the drive belt tension.
- Inspect the **engine air cleaner element (filter)** and replace as necessary.\*
- Change the automatic transaxle fluid/filter and adjust the bands.
  - Flush and replace the engine coolant.
- \* This maintenance is recommended by Daimler-Chrysler Corporation to the owner but is not required to maintain the emissions warranty.

NOTE: Operating the vehicle more than 50% in heavy traffic during hot weather, above 90° F (32° C), using vehicle for police, taxi, limousine type operation or trailer towing require the more frequent transaxle service noted in Schedule – B. Perform these services if vehicle usually operate under these conditions.

Inspection and service should also be performed anytime a malfunction is observed or suspected.

# **JUMP STARTING, TOWING, AND HOISTING**

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# **DESCRIPTION AND OPERATION**

# JUMP STARTING PROCEDURE

Describes the procedure for starting a disable vehicle.

# TOWING RECOMMENDATIONS

Describes the recommended towing procedures.

# HOISTING RECOMMENDATIONS

Describes the location of hoisting and jacking points so that the vehicle can be lifted by a floor jack or hoist.

# SERVICE PROCEDURES

# JUMP STARTING PROCEDURE

WARNING: REVIEW ALL SAFETY PRECAUTIONS AND WARNINGS IN GROUP 8A, BATTERY/START-ING/CHARGING SYSTEMS DIAGNOSTICS. DO NOT JUMP START A FROZEN BATTERY, PERSONAL INJURY CAN RESULT. DO NOT JUMP START WHEN MAINTENANCE FREE BATTERY INDICATOR DOT IS YELLOW OR BRIGHT COLOR, DO NOT JUMP START A VEHICLE WHEN THE BATTERY FLUID IS BELOW THE TOP OF LEAD PLATES. DO NOT ALLOW JUMPER CABLE CLAMPS TO TOUCH EACH OTHER WHEN CONNECTED TO A BOOSTER SOURCE, DO NOT USE OPEN FLAME NEAR BAT-TERY. REMOVE METALLIC JEWELRY WORN ON HANDS OR WRISTS TO AVOID INJURY BY ACCI-DENTAL ARCING OF BATTERY CURRENT. WHEN USING A HIGH OUTPUT BOOSTING DEVICE, DO NOT ALLOW BATTERY VOLTAGE TO EXCEED 16 VOLTS. REFER TO INSTRUCTIONS PROVIDED WITH DEVICE BEING USED.

CAUTION: When using another vehicle as a booster, do not allow vehicles to touch. Electrical systems can be damaged on either vehicle.

# TO JUMP START A DISABLED VEHICLE:

- (1) Raise hood on disabled vehicle and visually inspect engine compartment for:
  - Battery cable clamp condition, clean if necessary.
  - Frozen battery.
  - Yellow or bright color test indicator, if equipped.
  - Low battery fluid level.
  - Generator drive belt condition and tension.
  - Fuel fumes or leakage, correct if necessary.

CAUTION: If the cause of starting problem on disabled vehicle is severe, damage to booster vehicle charging system can result.

- (2) When using another vehicle as a booster source, park the booster vehicle within cable reach. Turn off all accessories, set the parking brake, place the automatic transmission in PARK or the manual transmission in NEUTRAL and turn the ignition OFF.
- (3) On disabled vehicle, place gear selector in park or neutral and set park brake. Turn off all accessories.
- (4) Connect jumper cables to booster battery. RED clamp to positive terminal (+). BLACK clamp to negative terminal (-). DO NOT allow clamps at opposite end of cables to touch, electrical arc will result. Review all warnings in this procedure.
- (5) On disabled vehicle, connect RED jumper cable clamp to positive (+) terminal. Connect BLACK jumper cable clamp to engine ground as close to the ground cable attaching point as possible (Fig. 1).
- (6) Start the engine in the vehicle which has the booster battery, let the engine idle a few minutes, then start the engine in the vehicle with the discharged battery.

CAUTION: Do not crank starter motor on disabled vehicle for more than 15 seconds, starter will overheat and could fail.

(7) Allow battery in disabled vehicle to charge to at least 12.4 volts (75% charge) before attempting to start engine. If engine does not start within 15 sec-

# **SERVICE PROCEDURES (Continued)**

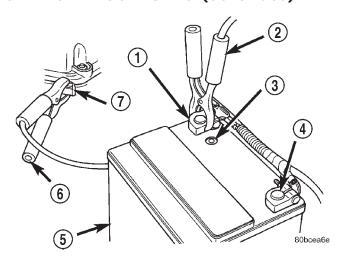


Fig. 1 Jumper Cable Clamp Connections

- 1 BATTERY POSITIVE CABLE
- 2 POSITIVE JUMPER CABLE
- 3 TEST INDICATOR
- 4 BATTERY NEGATIVE CABLE
- 5 BATTERY
- 6 NEGATIVE JUMPER CABLE
- 7 ENGINE GROUND

onds, stop cranking engine and allow starter to cool (15 minutes), before cranking again.

#### DISCONNECT CABLE CLAMPS AS FOLLOWS:

- Disconnect BLACK cable clamp from engine ground on disabled vehicle.
- When using a Booster vehicle, disconnect BLACK cable clamp from battery negative terminal. Disconnect RED cable clamp from battery positive terminal.
- Disconnect RED cable clamp from battery positive terminal on disabled vehicle.

# TOWING RECOMMENDATIONS

WARNING: DO NOT ALLOW TOWING ATTACHMENT DEVICES TO CONTACT THE FUEL TANK OR LINES, FUEL LEAK CAN RESULT. DO NOT LIFT OR TOW VEHICLE BY FRONT OR REAR BUMPER, OR BUMPER ENERGY ABSORBER UNITS. DO NOT VENTURE UNDER A LIFTED VEHICLE IF NOT SUPPORTED PROPERLY ON SAFETY STANDS. DO NOT ALLOW PASSENGERS TO RIDE IN A TOWED VEHICLE. USE A SAFETY CHAIN THAT IS INDEPENDENT FROM THE TOWING ATTACHMENT DEVICE.

CAUTION: Do not damage brake lines, exhaust system, shock absorbers, sway bars, or any other under vehicle components when attaching towing device to vehicle. Do not attach towing device to front or rear suspension components. Do not

secure vehicle to towing device by the use of front or rear suspension or steering components. Remove or secure loose or protruding objects from a damaged vehicle before towing. Refer to state and local rules and regulations before towing a vehicle. Do not allow weight of towed vehicle to bear on lower fascia, air dams, or spoilers.

# RECOMMENDED TOWING EQUIPMENT

To avoid damage to bumper fascia and air dams use of a wheel lift or flat bed towing device (Fig. 2) is recommended. When using a wheel lift towing device, be sure the unlifted end of disabled vehicle has at least 100 mm (4 in.) ground clearance. If minimum ground clearance cannot be reached, use a towing dolly. If a flat bed device is used, the approach angle should not exceed 15 degrees.

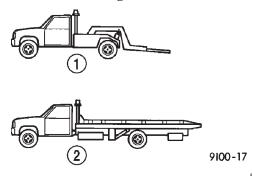


Fig. 2 Recommended Towing Devices

- 1 WHEEL LIFT
- 2 FLAT BED

# **GROUND CLEARANCE**

CAUTION: If vehicle is towed with wheels removed, install lug nuts to retain brake drums or rotors.

A towed vehicle should be raised until lifted wheels are a minimum 100 mm (4 in) from the ground. Be sure there is adequate ground clearance at the opposite end of the vehicle, especially when towing over rough terrain or steep rises in the road. If necessary, remove the wheels from the lifted end of the vehicle and lower the vehicle closer to the ground, to increase the ground clearance at the opposite end of the vehicle. Install lug nuts on wheel attaching studs to retain brake drums or rotors.

## LOCKED VEHICLE TOWING

When a locked vehicle must be towed with the front wheels on the ground, use a towing dolly or flat bed hauler.

# **SERVICE PROCEDURES (Continued)**

# FLAT TOWING WITH TOW BAR

- 3-speed automatic transaxle vehicles can be flat towed at speeds not to exceed 40 km/h (25 mph) for not more than 25 km (15 miles). The steering column must be unlocked and gear selector in neutral.
- 5-speed manual transaxle vehicles can be flat towed at any legal highway speed for extended distances. The gear selector must be in the neutral position.

# TOWING - FRONT WHEEL LIFT

DaimlerChrysler Corporation recommends that a vehicle be towed with the front end lifted, whenever possible.

#### TOWING - REAR WHEEL LIFT

If a vehicle cannot be towed with the front wheels lifted, the rear wheels can be lifted provided the following guide lines are observed.

CAUTION: Do not use steering column lock to secure steering wheel during towing operation.

- Unlock steering column and secure steering wheel in straight ahead position with a clamp device designed for towing.
- Verify that front drive line and steering components are in good condition.
- 5-speed manual transaxle vehicles can be towed at any legal highway speed for extended distances. The gear selector must be in the neutral position.
- 3-speed automatic transaxle vehicles can be towed at speeds not to exceed 40 km/h (25 mph) for not more than 25 km (15 miles). The gear selector must be in the neutral position.

#### HOISTING RECOMMENDATIONS

Refer to Owner's Manual provided with vehicle for proper emergency jacking procedures.

WARNING: THE HOISTING AND JACK LIFTING POINTS PROVIDED ARE FOR A COMPLETE VEHICLE. WHEN THE ENGINE OR REAR SUSPENSION IS REMOVED FROM A VEHICLE, THE CENTER OF GRAVITY IS ALTERED MAKING SOME HOISTING CONDITIONS UNSTABLE. PROPERLY SUPPORT OR SECURE VEHICLE TO HOISTING DEVICE WHEN THESE CONDITIONS EXIST.

CAUTION: Do not position hoisting device on suspension components, damage to vehicle can result.

Do not attempt to raise one entire side of the vehicle by placing a floor jack midway between the front and rear wheels. This practice may result in permanent damage to the body.

#### FLOOR JACK

When properly positioned, a floor jack can be used to lift a PL vehicle (Fig. 3). Support the vehicle in the raised position with jack stands.

A floor jack or any lifting device, must never be used on any part of the underbody other then the described areas.

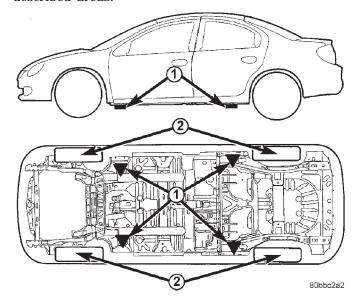


Fig. 3 Hoisting and Jacking Points

1	Frame Contract Lift (Single Post)		
	Chassis Lift (Dual Post)		
	Outboard Lift (Dual Post)		
	Floor Jack		
2	Drive On Lift		

#### HOIST

A vehicle can be lifted with:

- A single-post, frame-contact hoist.
- A twin-post, chassis hoist.
- A ramp-type, drive-on hoist.

NOTE: When a frame-contact type hoist is used, verify that the lifting pads are positioned properly (Fig. 3).