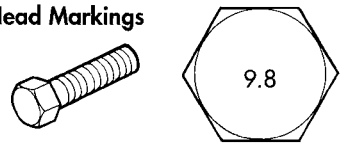
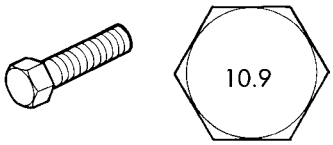
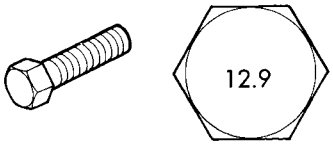
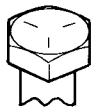
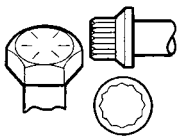
FASTENER IDENTIFICATION (Continued)

Bolt Markings and Torque - Metric

Commercial Steel Class	9.8	10.9	12.9
Bolt Head Markings			

Body Size	Torque				Torque				Torque			
Diam.	Cast Iron		Aluminum		Cast Iron		Aluminum		Cast Iron		Aluminum	
mm	N•m	ft-lb	N•m	ft-lb	N•m	ft-lb	N•m	ft-lb	N•m	ft-lb	N•m	ft-lb
6	9	5	7	4	14	9	11	7	14	9	11	7
7	14	9	11	7	18	14	14	11	23	18	18	14
8	25	18	18	14	32	23	25	18	36	27	28	21
10	40	30	30	25	60	45	45	35	70	50	55	40
12	70	55	55	40	105	75	80	60	125	95	100	75
14	115	85	90	65	160	120	125	95	195	145	150	110
16	180	130	140	100	240	175	190	135	290	210	220	165
18	230	170	180	135	320	240	250	185	400	290	310	230

Bolt Markings and Torque Values - U.S. Customary

SAE Grade Number	5	8
Bolt Head Markings These are all SAE Grade 5 (3) line	 	

Body Size	Bolt Torque - Grade 5 Bolt				Bolt Torque - Grade 8 Bolt			
	Cast Iron		Aluminum		Cast Iron		Aluminum	
	N•m	ft-lb	N•m	ft-lb	N•m	ft-lb	N•m	ft-lb
1/4 - 20	9	7	8	6	15	11	12	9
- 28	12	9	9	7	18	13	14	10
5/16 - 18	20	15	16	12	30	22	24	18
- 24	23	17	19	14	33	24	25	19
3/8 - 16	40	30	25	20	55	40	40	30
- 24	40	30	35	25	60	45	45	35
7/16 - 14	60	45	45	35	90	65	65	50
- 20	65	50	55	40	95	70	75	55
1/2 - 13	95	70	75	55	130	95	100	75
- 20	100	75	80	60	150	110	120	90
9/16 - 12	135	100	110	80	190	140	150	110
- 18	150	110	115	85	210	155	170	125
5/8 - 11	180	135	150	110	255	190	205	150
- 18	210	155	160	120	290	215	230	170
3/4 - 10	325	240	255	190	460	340	365	270
- 16	365	270	285	210	515	380	410	300
7/8 - 9	490	360	380	280	745	550	600	440
- 14	530	390	420	310	825	610	660	490
1 - 8	720	530	570	420	1100	820	890	660
- 14	800	590	650	480	1200	890	960	710

80bdbd8c

Fig. 2 FASTENER IDENTIFICATION

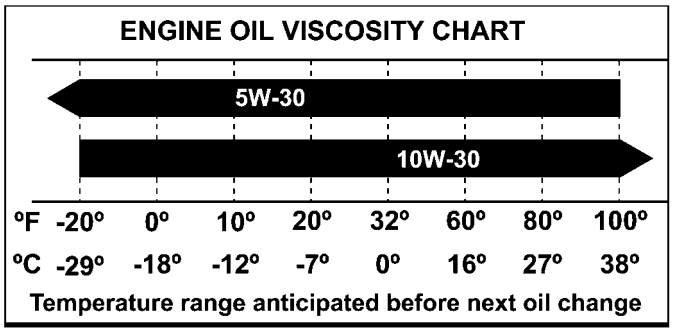
FLUID TYPES (Continued)

API SERVICE GRADE CERTIFIED

Use an engine oil that is API Certified (GF-3). Mopar® provides engine oils, meeting Material Standard MS-6395, that meet or exceed this requirement.

SAE VISCOSITY

An SAE viscosity grade is used to specify the viscosity of engine oil. Use only engine oils with multiple viscosities such as 5W-30 or 10W-30. These are specified with a dual SAE viscosity grade which indicates the cold-to-hot temperature viscosity range. Select an engine oil that is best suited to your particular temperature range and variation (Fig. 2).



80990199

Fig. 2 TEMPERATURE/ENGINE OIL VISCOSITY

ENERGY CONSERVING OIL

An Energy Conserving type oil is recommended for gasoline engines. The designation of ENERGY CONSERVING is located on the label of an engine oil container.

CONTAINER IDENTIFICATION

Standard engine oil identification notations have been adopted to aid in the proper selection of engine oil. The identifying notations are located on the front label of engine oil plastic bottles and the top of engine oil cans (Fig. 3).

This symbol means that the oil has been certified by the American Petroleum Institute (API). Diamler-Chrysler only recommends API Certified (GF-3) engine oils that meet the requirements of Material Standard MS-6395. Use Mopar® or an equivalent oil meeting the specification MS-6395.

SYNTHETIC ENGINE OILS

There are a number of engine oils being promoted as either synthetic or semi-synthetic. If you chose to use such a product, use **only** those oils that meet the American Petroleum Institute (API) and SAE viscosity standard. Follow the service schedule that describes your driving type.

9400-9

Fig. 3 API SYMBOL

ENGINE OIL ADDITIVES/SUPPLEMENTS

The manufacturer **does not recommend** the addition of any engine oil additives/supplements to the specified engine oil. Engine oil additives/supplements should not be used to enhance engine oil performance. Engine oil additives/supplements should not be used to extend engine oil change intervals. No additive is known to be safe for engine durability and can degrade emission components. Additives can contain undesirable materials that harm the long term durability of engines by:

- Doubling the level of Phosphorus in the engine oil. The ILSAC (International Lubricant Standard Approval Committee) GF-2 and GF-3 standards require that engine oil contain no more than 0.10% Phosphorus to protect the vehicles emissions performance. Addition of engine oil additives/supplements can poison, from the added sulfur and phosphorus, catalysts and hinder efforts to guarantee emissions performance to 80,000 miles.
- Altering the viscosity characteristics of the engine oil so that it no longer meets the requirements of the specified viscosity grade.
- Creating potential for an undesirable additive compatibility interaction in the engine crankcase. Generally it is not desirable to mix additive packages from different suppliers in the crankcase; there have been reports of low temperature engine failures caused by additive package incompatibility with such mixtures.

GEAR LUBRICANTS

SAE ratings also apply to multigrade gear lubricants. In addition, API classification defines the lubricants usage. Such as API GL-5 and SAE 75W-90.

LUBRICANTS AND GREASES

Lubricating grease is rated for quality and usage by the NLGI. All approved products have the NLGI symbol (Fig. 4) on the label. At the bottom of the NLGI symbol is the usage and quality identification letters. Wheel bearing lubricant is identified by the letter “G”. Chassis lubricant is identified by the letter “L”. The letter following the usage letter indicates

JUMP STARTING (Continued)

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. 7).

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

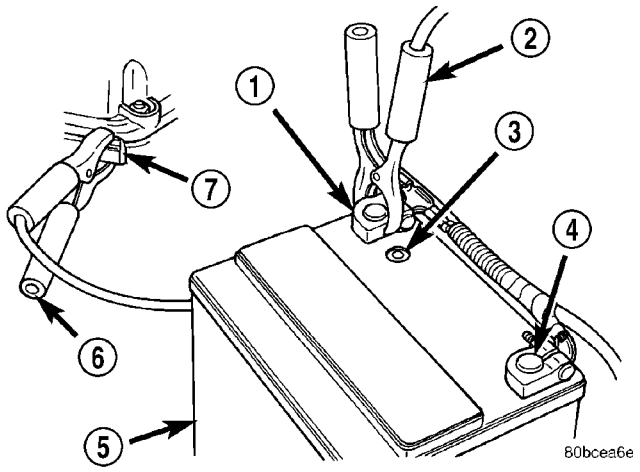


Fig. 7 Jumper Cable Clamp Connections

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

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

STANDARD PROCEDURE - TOWING

WARNINGS AND PRECAUTIONS

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.

HUB / BEARING (Continued)

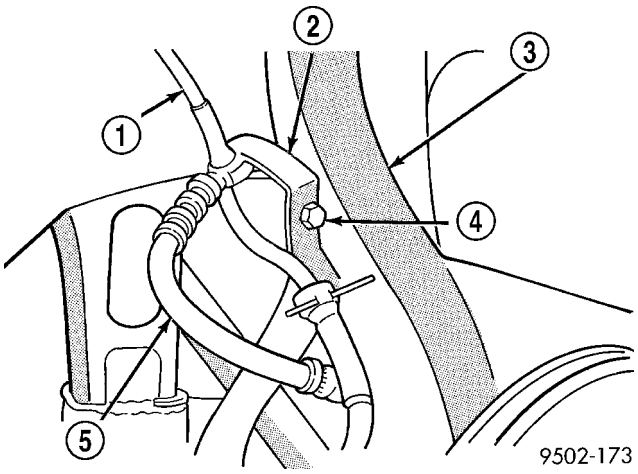


Fig. 3 Speed Sensor Cable Routing Bracket

1 - WHEEL SPEED SENSOR CABLE
2 - SPEED SENSOR CABLE ROUTING BRACKET
3 - STEERING KNUCKLE
4 - ATTACHING BOLT
5 - BRAKE CALIPER FLEX HOSE

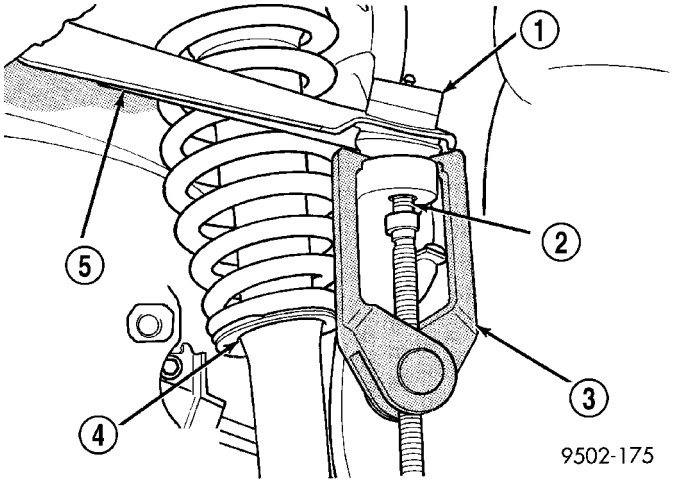


Fig. 4 Ball Joint Stud Removal From Steering Knuckle

1 - BALL JOINT
2 - BALL JOINT STUD
3 - SPECIAL TOOL C-3894-A
4 - SHOCK ABSORBER ASSEMBLY
5 - UPPER CONTROL ARM

NOTE: Care must be taken not to separate driveshaft inner C/V joint during the following steps. Do not allow driveshaft to hang by inner C/V joint; driveshaft must be supported.

(8) Separate steering knuckle (hub and bearing) from outer C/V joint by tipping top of steering knuckle outward while sliding outer C/V joint out rear of hub and bearing. Once separated, support outer end of driveshaft with wire hanger or cord to avoid damaging inner C/V joint.

(9) Remove 3 bolts attaching the hub and bearing assembly to steering knuckle (Fig. 5).

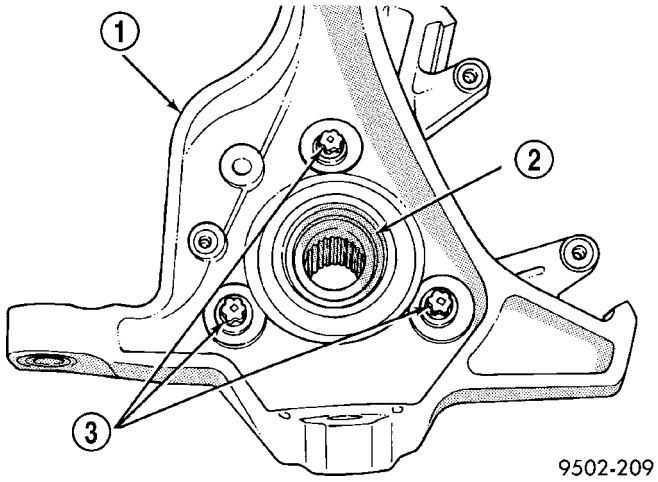


Fig. 5 Hub And Bearing Attaching Bolts

1 - STEERING KNUCKLE
2 - HUB AND BEARING ASSEMBLY
3 - ATTACHING BOLTS

(10) Remove hub and bearing assembly from front of steering knuckle.

NOTE: If bearing will not come out of steering knuckle, it can be tapped out using a soft faced hammer.

INSTALLATION

(1) Thoroughly clean all hub and bearing assembly mounting surfaces on steering knuckle.

(2) Install hub and bearing assembly in steering knuckle aligning bolt boles in bearing flange with holes in steering knuckle.

(3) Install 3 mounting bolts (Fig. 5) and tighten evenly to ensure bearing is square to face of steering knuckle. Tighten mounting bolts to 110 N·m (80 ft. lbs.) torque.

(4) Slide driveshaft outer C/V into front hub and bearing assembly.

(5) Install steering knuckle onto upper ball joint stud and install nut.

(6) Using a crow foot and torque wrench, tighten upper ball joint nut to 27 N·m (20 ft. lbs.) torque.

(7) If equipped with antilock brakes, install wheel speed sensor cable routing bracket on steering knuckle (Fig. 3). Install and tighten mounting bolt to 12 N·m (105 in. lbs.) torque.

(8) Install brake rotor, and caliper, shoes and adapter assembly. (Refer to 5 - BRAKES/HYDRAULIC/MECHANICAL/ROTOR - INSTALLATION)

(9) Clean all foreign matter from threads of outer C/V joint stub axle.

CLUTCH RELEASE BEARING AND LEVER (Continued)

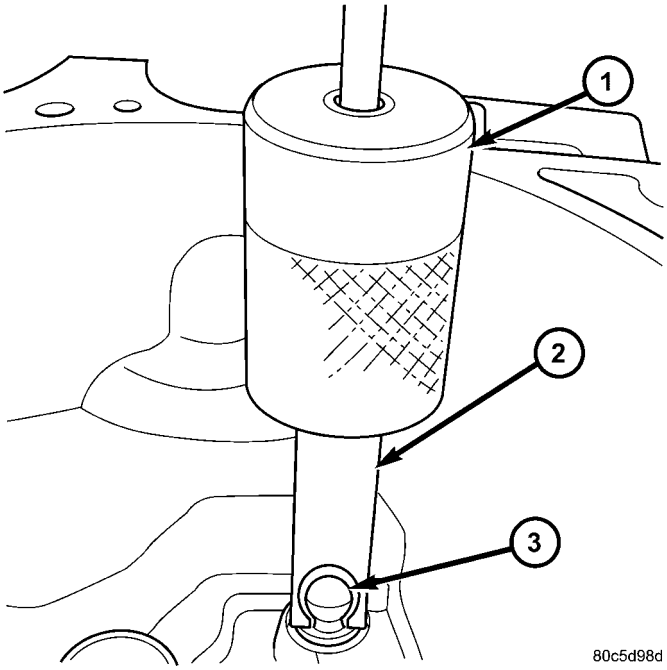


Fig. 21 Pivot Ball Removal/Installation

1 - C-3752 SLIDE HAMMER
2 - REMOVER/INSTALLER 6891
3 - PIVOT BALL

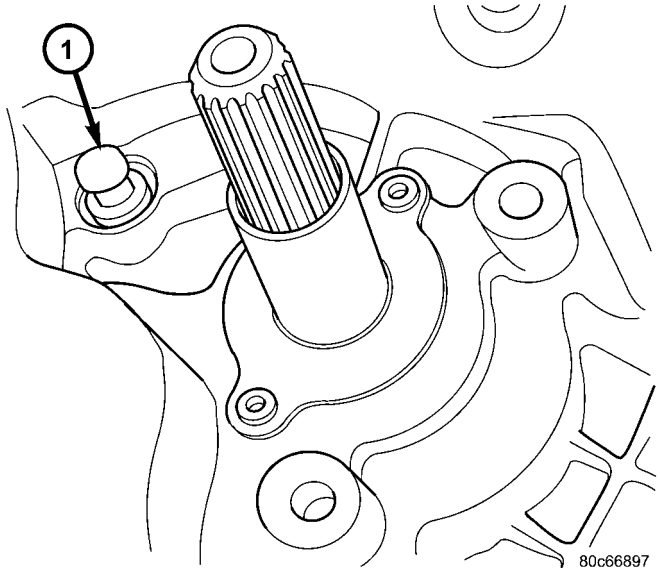


Fig. 22 Pivot Ball Position

1 - PIVOT BALL (1)

(4) Install clutch release bearing/lever assembly into position by sliding bearing onto input bearing retainer, and using moderate hand pressure to seat release lever to pivot ball (Fig. 24). A “pop” sound should be heard. Verify proper engagement by lightly pulling outward on lever at pivot ball location, and then actuating lever and bearing to ensure proper operation.

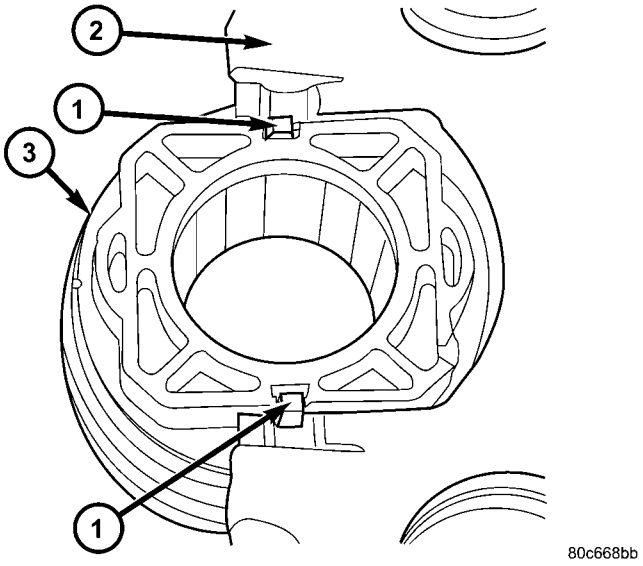


Fig. 23 Release Bearing-to-Lever

1 - RETAINER (2)
2 - RELEASE LEVER
3 - RELEASE BEARING

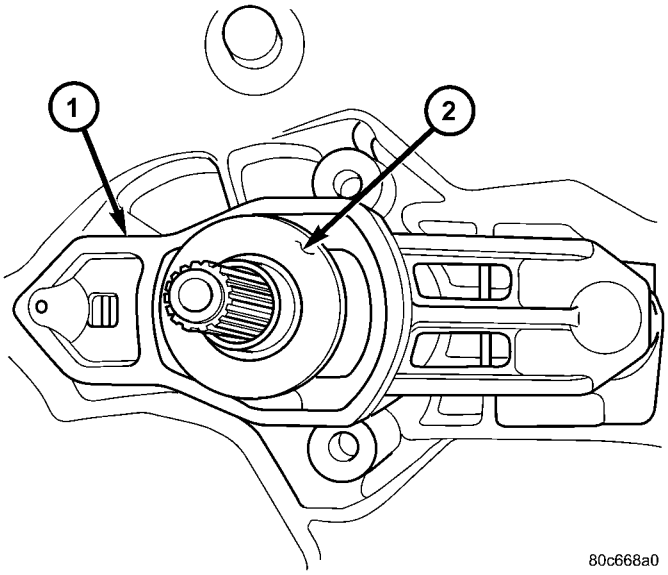


Fig. 24 Release Bearing and Lever

1 - RELEASE LEVER
2 - RELEASE BEARING

(5) Reinstall transaxle assembly (Refer to 21 - TRANSMISSION/TRANSAXLE/T 850 MANUAL - INSTALLATION)

SPEED CONTROL

TABLE OF CONTENTS

SPEED CONTROL

DESCRIPTION

DESCRIPTION

The speed control system is electronically controlled and vacuum operated. The electronic control is integrated into the Powertrain Control Module, located on the left side of the engine compartment next to the air cleaner. The controls are located on the steering wheel and consist of a single switch. The ON, OFF, RESUME, ACCEL, SET, COAST, and CANCEL, lever is located on the right of the steering wheel (Fig. 1).

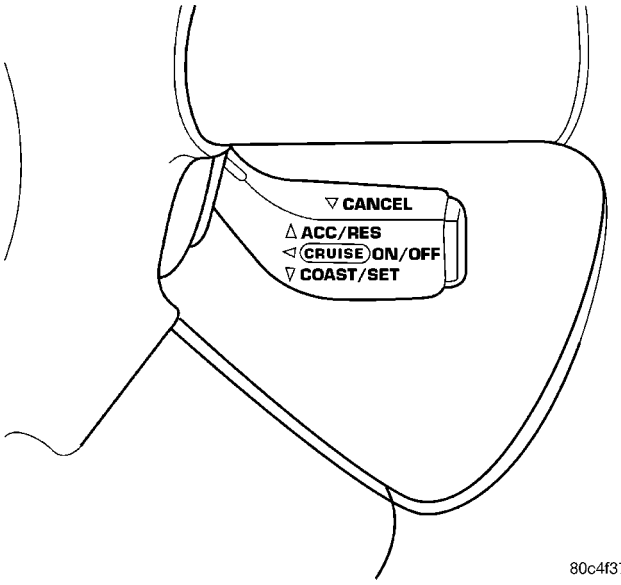


Fig. 1 Speed Control Switch

The system is designed to operate at speeds above 25 mph (40 km/h).

WARNING: THE USE OF SPEED CONTROL IS NOT RECOMMENDED WHEN DRIVING CONDITIONS DO NOT PERMIT MAINTAINING A CONSTANT SPEED, SUCH AS IN HEAVY TRAFFIC OR ON ROADS THAT ARE WINDING, ICY, SNOW COVERED, OR SLIPPERY.

INTERACTIVE SPEED CONTROL

DESCRIPTION

Interactive means that communication between the PCM and the TCM is taking place, this communication is internal to the PCM on NGC vehicles. Interactive speed control avoids unnecessary shifting for smoother, quieter operation and when downshifts are required, makes the shifts smoother.

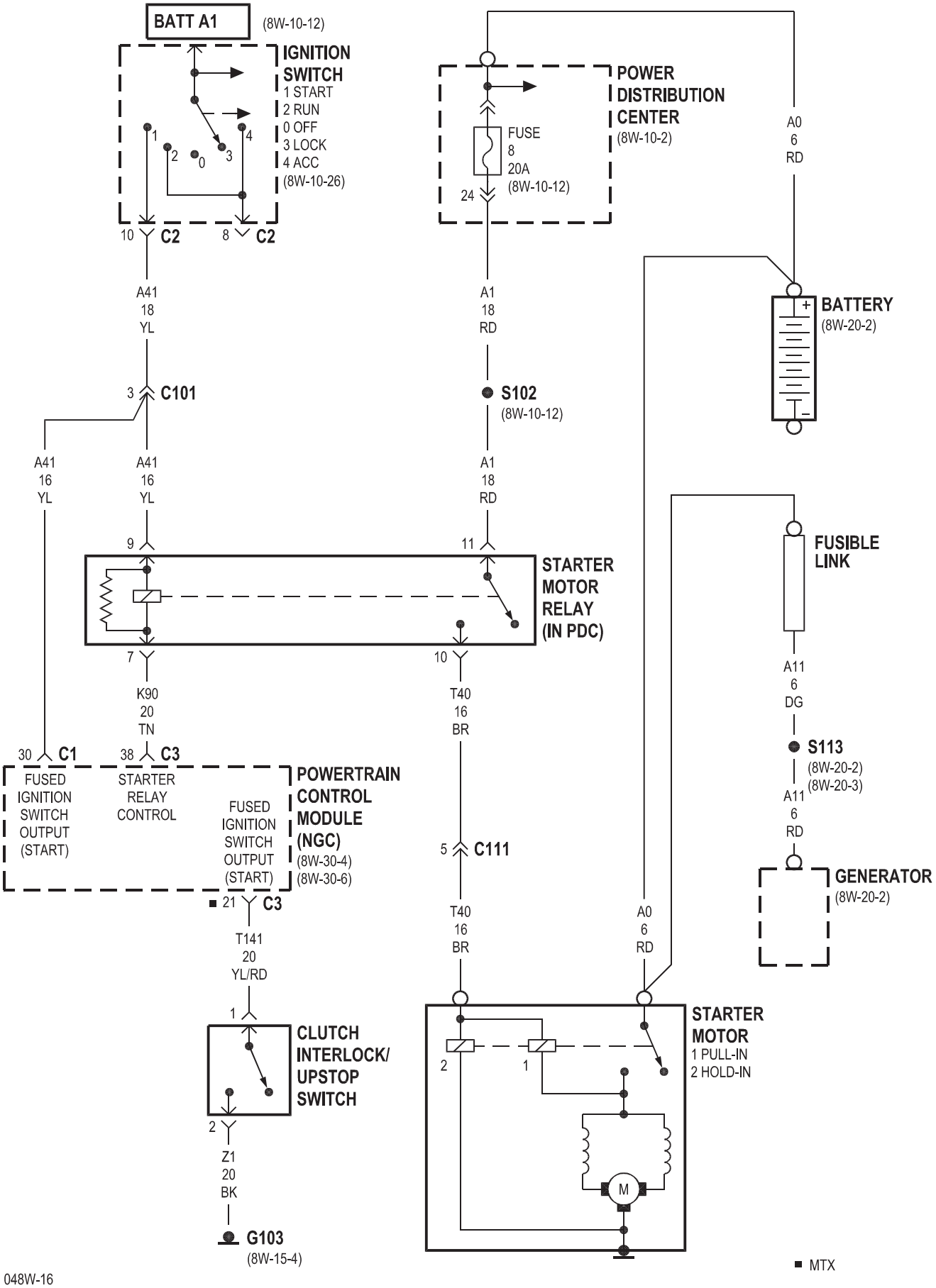
CLIMBING A GRADE

DESCRIPTION

When climbing a grade the interactive speed control tries to maintain the set speed by increasing the throttle opening, while inability/delaying downshifts.

OPERATION

If opening the throttle alone cannot maintain the set speed and the vehicle speed drops more than three mph below the set speed, the transmission will downshift. If the vehicle continues to lose speed, by more than 6 mph, the transmission will downshift again maintain the set speed. After the vehicle encounters a less-steep grade, or has crested the grade (reduced the load on the powertrain) and can maintain the set speed at a reduced throttle position, the transmission will upshift, as appropriate, until the set speed can be maintained.


BATT A1
(8W-10-12)
IGNITION SWITCH
1 START
2 RUN
0 OFF
3 LOCK
4 ACC
(8W-10-26)
10 C2
8 C2
A41 18 YL
3 C101
A41 16 YL
A41 16 YL
9
7
K90 20 TN
30 C1
38 C3
FUSED IGNITION SWITCH OUTPUT (START)
STARTER RELAY CONTROL
FUSED IGNITION SWITCH OUTPUT (START)
POWERTRAIN CONTROL MODULE (NGC)
(8W-30-4)
(8W-30-6)
■ 21 C3
T141 20 YL/RD
1
2
Z1 20 BK
G103
(8W-15-4)
CLUTCH INTERLOCK/ UPSTOP SWITCH
POWER DISTRIBUTION CENTER
(8W-10-2)
FUSE 8 20A
(8W-10-12)
24
A1 18 RD
S102
(8W-10-12)
A1 18 RD
11
10
STARTER MOTOR RELAY (IN PDC)
T40 16 BR
5 C111
T40 16 BR
A0 6 RD
A0 6 RD
BATTERY
(8W-20-2)
FUSIBLE LINK
A11 6 DG
S113
(8W-20-2)
(8W-20-3)
A11 6 RD
GENERATOR
(8W-20-2)
STARTER MOTOR
1 PULL-IN
2 HOLD-IN
2
1
M
■ MTX

CONNECTOR/GROUND/SPLICE LOCATION (Continued)

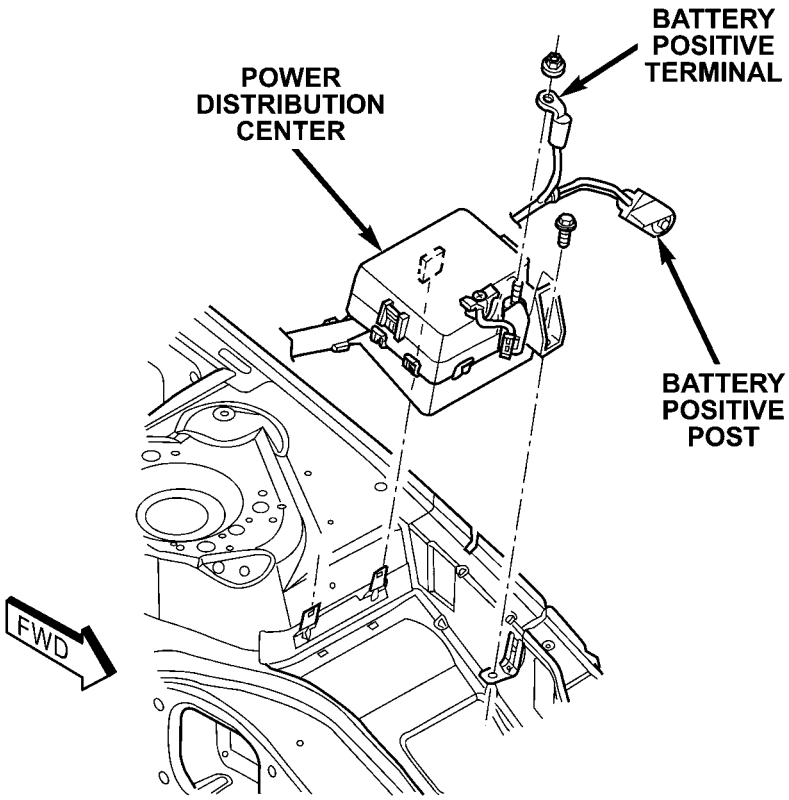


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Fig. 8 POWER DISTRIBUTION CENTER

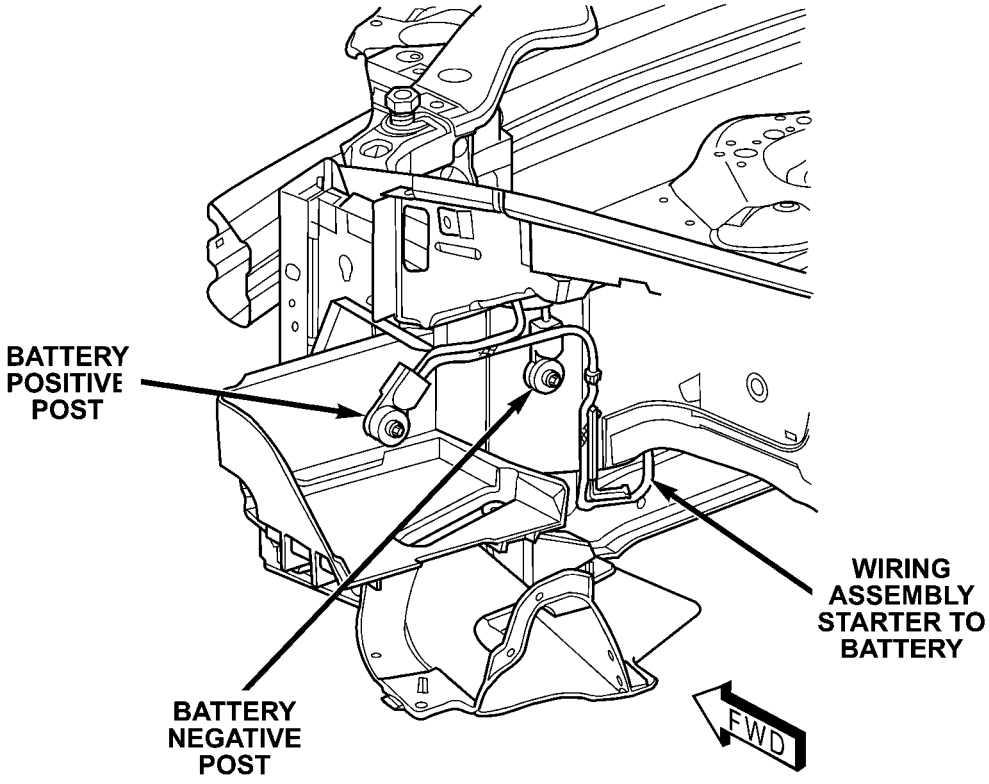

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Fig. 9 BATTERY CABLE CONNECTORS

TIMING BELT AND SPROCKET(S) (Continued)

(13) Loosen timing belt tensioner lock bolt (Fig. 105).

(14) Insert a 6 mm Allen wrench into the hexagon opening located on the top plate of the belt tensioner pulley (Fig. 105). Rotate the top plate **CLOCKWISE** until there is enough slack in timing belt to allow for removal.

(15) Remove timing belt.

CAUTION: If timing belt was damaged due to incorrect tracking (alignment), the belt tensioner pulley and bracket must be replaced as an assembly (Refer to 9 - ENGINE/VALVE TIMING/TIMING BELT TENSIONER & PULLEY - REMOVAL).

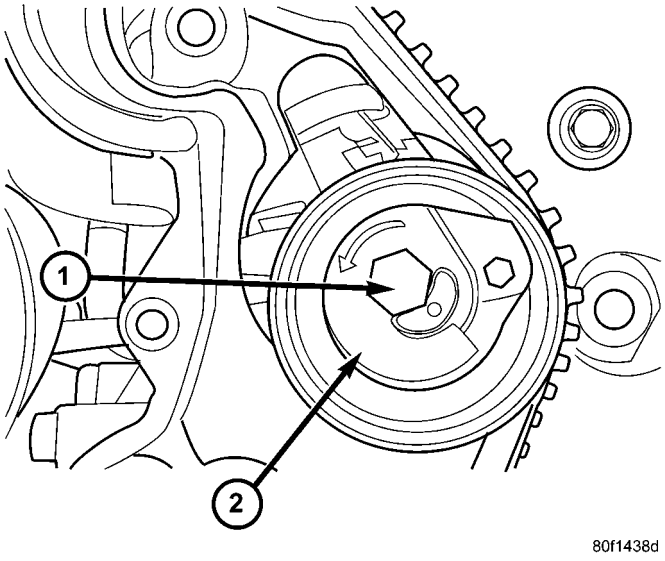

Fig. 105 Timing Belt Tensioner

1 - LOCK BOLT
2 - TOP PLATE

REMOVAL - CAMSHAFT SPROCKETS

(1) Disconnect negative battery cable.

(2) Remove timing belt (Refer to 9 - ENGINE/VALVE TIMING/TIMING BELT AND SPROCKETS - REMOVAL).

(3) Hold camshaft sprockets with Special Tool 6847 while removing center bolts (Fig. 106).

REMOVAL - CRANKSHAFT SPROCKET

(1) Disconnect negative battery cable.

(2) Remove timing belt (Refer to 9 - ENGINE/VALVE TIMING/TIMING BELT AND SPROCKETS - REMOVAL).

(3) Remove crankshaft sprocket using Special Tools 6793 and insert C-4685-C2 (Fig. 107).

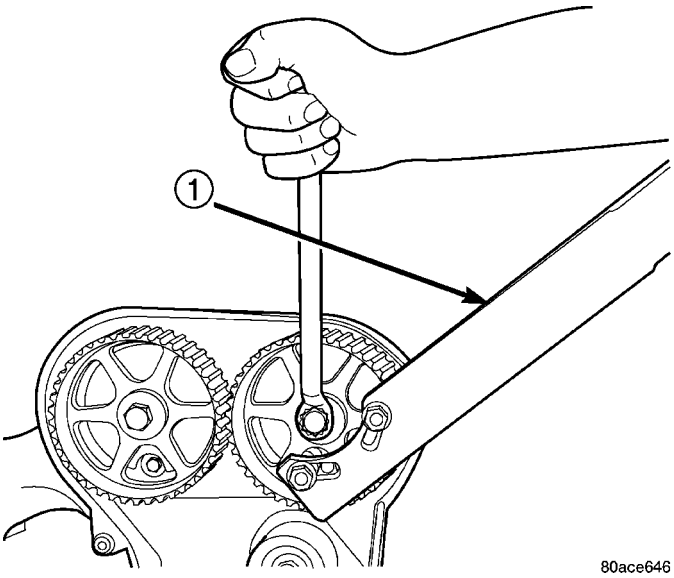

Fig. 106 Camshaft Sprocket - Removal/Installation

1 - SPECIAL TOOL 6847

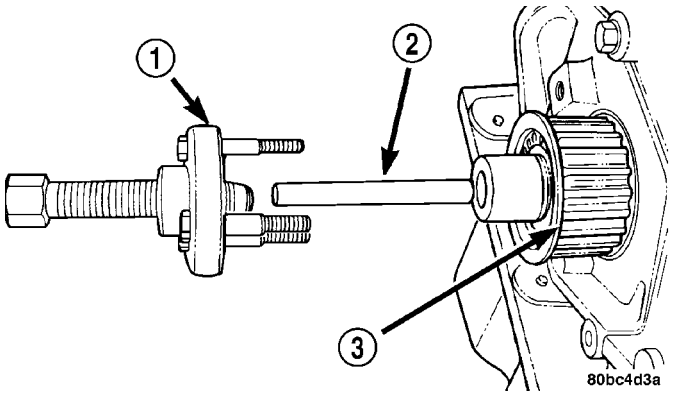

Fig. 107 Crankshaft Sprocket - Removal

1 - SPECIAL TOOL 6793
2 - SPECIAL TOOL C-4685–C2
3 - CRANKSHAFT SPROCKET

CLEANING

Do Not attempt to clean a timing belt. If contamination from oil, grease, or coolants have occurred, the timing belt should be replaced.

Clean all sprockets using a suitable solvent. Clean all sprocket grooves of any debris.

PISTON RINGS

STANDARD PROCEDURE - PISTON RING FITTING

(1) Wipe cylinder bore clean. Insert ring and push down with piston to ensure it is square in bore. The ring gap measurement must be made with the ring positioning at least 12 mm (0.50 inch.) from bottom of cylinder bore. Check gap with feeler gauge (Fig. 73). Refer to (Refer to 9 - ENGINE - SPECIFICATIONS) for clearance measurements.

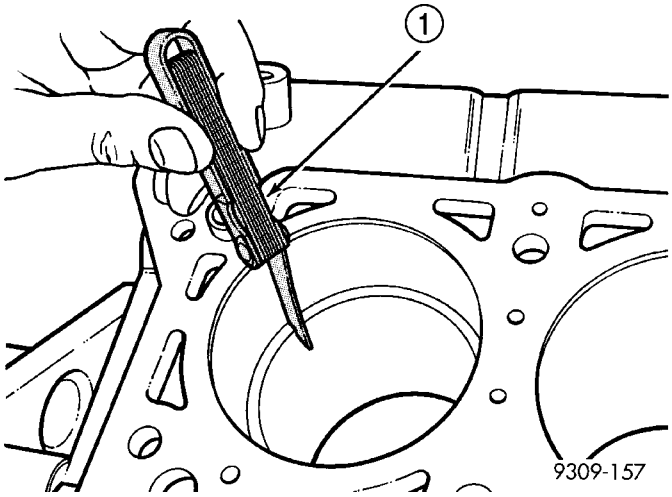

Fig. 73 CHECK GAP ON PISTON RINGS

1 - FEELER GUAGE

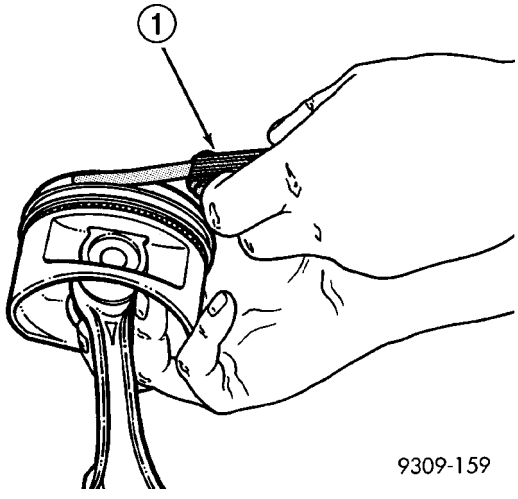

Fig. 74 Measuring Piston Ring Side Clearance

1 - FEELER GAUGE

(2) Check piston ring to groove clearance (Fig. 74). For clearance specifications (Refer to 9 - ENGINE - SPECIFICATIONS).

REMOVAL

(1) Remove piston and connecting rod. (Refer to 9 - ENGINE/ENGINE BLOCK/PISTON & CONNECTING ROD - REMOVAL)

(2) Remove No. 1 and No.2 piston rings (Fig. 76) from piston using a ring expander tool (Fig. 77).

(3) Remove upper oil ring side rail (Fig. 76).

(4) Remove lower oil ring side rail (Fig. 76).

(5) Remove oil ring expander (Fig. 76).

INSTALLATION

(1) Measure clearance of piston rings to the cylinder bore and piston. (Refer to 9 - ENGINE/ENGINE BLOCK/PISTON RINGS - STANDARD PROCEDURE)

CAUTION: Install piston rings in the following order:

- Oil ring expander.
- Upper oil ring side rail.
- Lower oil ring side rail.
- No. 2 Intermediate piston ring.
- No. 1 Upper piston ring.

(2) Install oil ring expander.

Install the side rail by placing one end between the piston ring groove and the oil ring expander. Hold end firmly and press down the portion to be installed until side rail is in position. **Do not use a piston ring expander during this step (Fig. 75).**

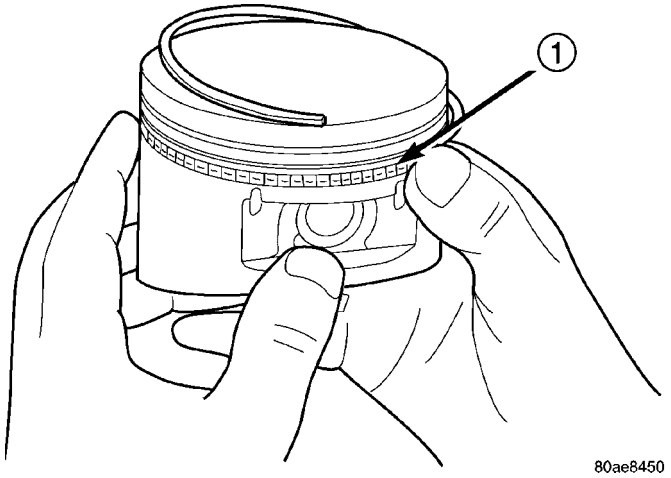

Fig. 75 SIDE RAIL - INSTALLATION

1 - SIDE RAIL END

POWER STEERING PRESSURE SWITCH

DESCRIPTION

On vehicles equipped with a 2.0L four cylinder engine, a power steering pressure switch (Fig. 16) is used to improve the vehicle's idle quality when required (Other four cylinder engine models use a virtual power steering switch (VPSS) built into the vehicle's electronics). When a demand for power assist is put on the power steering system at idle, pump pressure puts additional load on the engine, thus decreasing engine idle speed. The pressure switch improves vehicle idle quality by maintaining the required engine idle speed when the pressure rises in the power steering system.

The power steering pressure switch is mounted directly to the power steering gear (Fig. 16).

OPERATION

The pressure switch functions by signaling the powertrain control module that the power steering system is putting additional load on the engine. This type of condition exists when turning the front tires of the vehicle when the vehicle is stationary and the engine is at idle speed. When this condition is sensed by the power train control module, through a signal from the power steering pressure switch, engine idle speed will be maintained. The maintained engine idle speed compensates for the additional load, thus maintaining the require engine idle speed and idle quality.

REMOVAL

(1) Disconnect the negative cable from the battery. Be sure cable is isolated from negative post on battery.

(2) Raise vehicle.

(3) Locate power steering pressure switch on back side of power steering gear (Fig. 16).

(4) Remove the wiring harness connector from the power steering pressure switch.

(5) Using a crow foot and long extension, remove power steering pressure switch, from power steering gear.

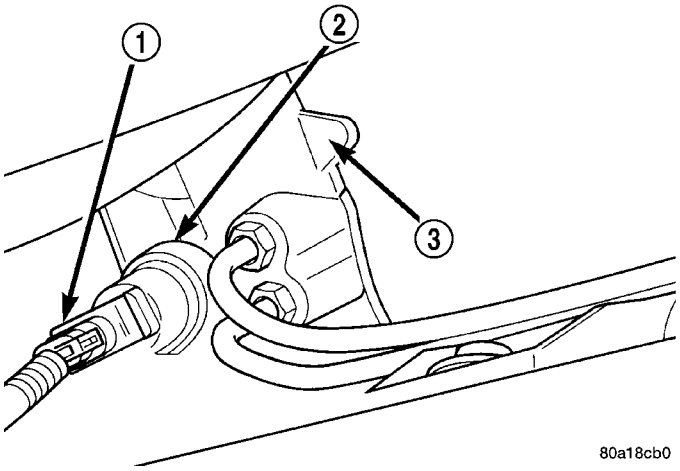

Fig. 16 Power Steering Pressure Switch Location

1 - WIRING HARNESS CONNECTOR
2 - POWER STEERING PRESSURE SWITCH
3 - POWER STEERING GEAR

INSTALLATION

CAUTION: When tightening the power steering pressure switch after installation in steering gear, do not exceed the torque specification shown in step 1 below. Over-tightening may result in stripping the threads out of the pressure switch port on the steering gear.

(1) Install power steering pressure switch into power steering gear by hand until fully seated. Then using a crow foot and extension, tighten power steering pressure switch to 16 N·m (12 ft. lbs.) torque.

(2) Install wiring harness connector on power steering pressure switch (Fig. 16). Be sure latch on wiring harness connector is fully engaged with locking tab on power steering pressure switch.

(3) Fill power steering reservoir to correct fluid level.

(4) Connect negative cable back on negative post of battery.

(5) Start engine and turn steering wheel several times from stop to stop to bleed air from fluid in system. Stop engine, check fluid level, and inspect system for leaks.

41TE AUTOMATIC TRANSAXLE (Continued)

(15) Measure input shaft end play. Place transaxle so input shaft is vertical. Set up end play set and dial indicator as shown in (Fig. 23). **Input shaft end play should be within 0.13-0.64 mm (0.005-0.025 in.)** If outside of this range, a #4 thrust plate change is required. Record indicator reading for reference upon reassembly.

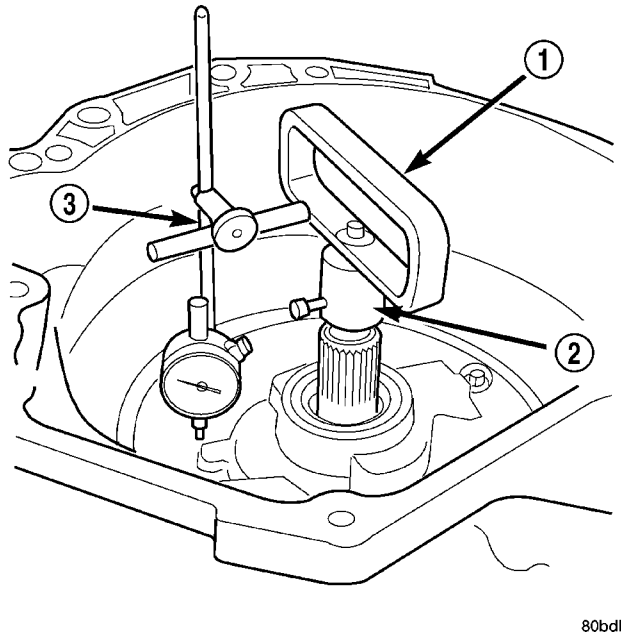

Fig. 23 Measure Input Shaft End Play Using End Play Set 8266

1 - TOOL 8266–8
2 - TOOL 8266–2
3 - TOOL C-3339

(16) Remove oil pump-to-case bolts (Fig. 24).

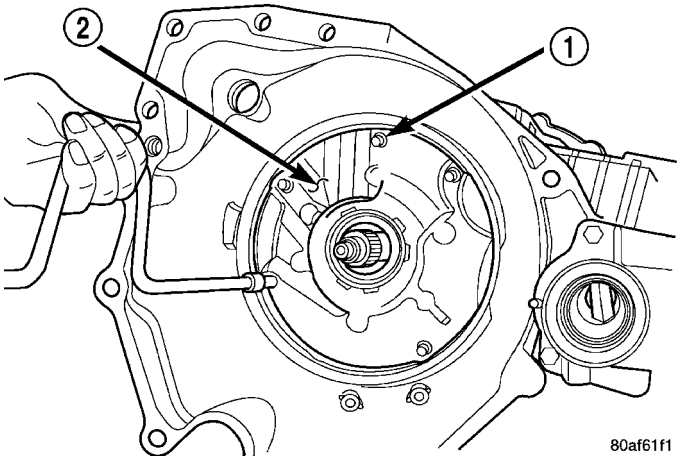

Fig. 24 Remove Pump Attaching Bolts

1 - PUMP ATTACHING BOLTS
2 - PUMP HOUSING

CAUTION: Be sure input speed sensor is removed before removing oil pump.

(17) Install pullers Tool C-3752 as shown in (Fig. 25).

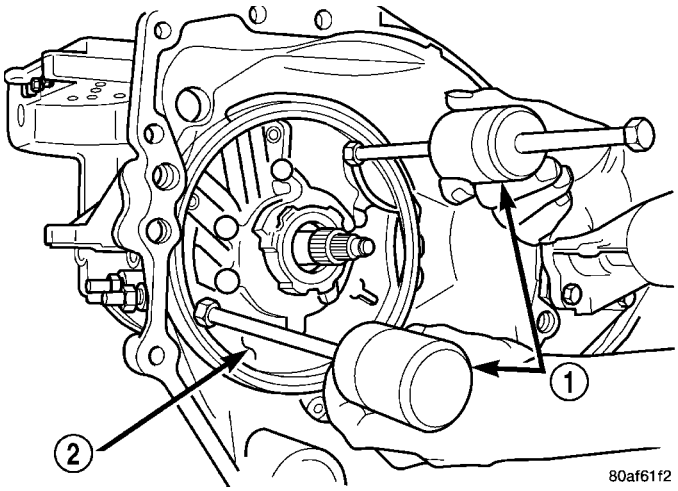

Fig. 25 Install Tool C-3752

1 - PULLERS TOOL C-3752
2 - PUMP

(18) Remove oil pump assembly (Fig. 26) (Fig. 27).

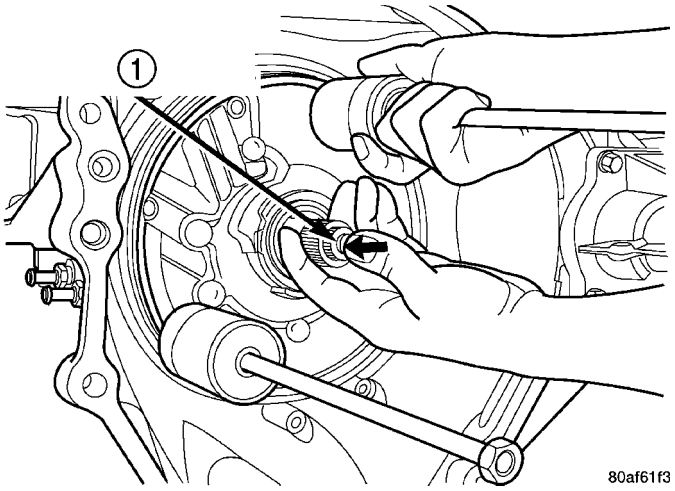

Fig. 26 Remove Oil Pump

1 - “PUSH IN” ON INPUT SHAFT WHILE REMOVING PUMP

TIRES/WHEELS

TABLE OF CONTENTS

TIRES/WHEELS

DIAGNOSIS AND TESTING - TIRE AND WHEEL VIBRATION

Tire and wheel imbalance, runout and force variation can cause vehicles to exhibit steering wheel vibration.

VISUAL INSPECTION

Visual inspection of the vehicle is recommended prior to road testing or performing any other procedure. Raise vehicle on a suitable hoist. (Refer to LUBRICATION & MAINTENANCE/HOISTING - STANDARD PROCEDURE)

Inspect for the following:

- Verify correct (OEM) wheel and tire, as well as correct wheel weights. Aluminum wheels require unique wheel weights. They are designed to fit the contour of the wheel (Fig. 1).
- Inspect tires and wheels for damage, mud packing and unusual wear; correct as necessary.
- Check and adjust tire air pressure to the pressure listed on the label attached to the rear face of the driver's door.

ROAD TEST

Road test vehicle on a smooth road for a least five miles to warm tires (remove any flat spots). Lightly place hands on steering wheel at the 10:00 and 2:00 positions while slowly sweeping up and down from 90 to 110 km/h (55 to 70 mph) where legal speed limits allow.

Observe the steering wheel for:

- Visual Nibble (oscillation: clockwise/counterclockwise, usually due to tire imbalance)
- Visual Buzziness (high frequency, rapid vibration up and down)

To rule out vibrations due to brakes or powertrain:

- Lightly apply brakes at speed; if vibration occurs or is enhanced, vibration is likely due to causes other than tire and wheel assemblies.
- Shift transmission into neutral while vibration is occurring; if vibration is eliminated, vibration is

ADJUSTABLE QUARTER GLASS JR-27 (Continued)

ADJUSTMENTS

QUARTER GLASS ADJUSTMENT

NOTE: The door glass must be properly adjusted prior to performing any quarter glass adjustments. (Refer to 23 - BODY/DOOR - FRONT/DOOR GLASS - ADJUSTMENTS)

UP-STOP ADJUSTMENTS

NOTE: Up-stop nuts are behind the quarter panel speakers, and can be accessed without removing the trim panel.

(1) Remove the speaker cover, speaker and speaker cup, if equipped. Peel back the sealing patch to access forward up-stop. (Fig. 3)

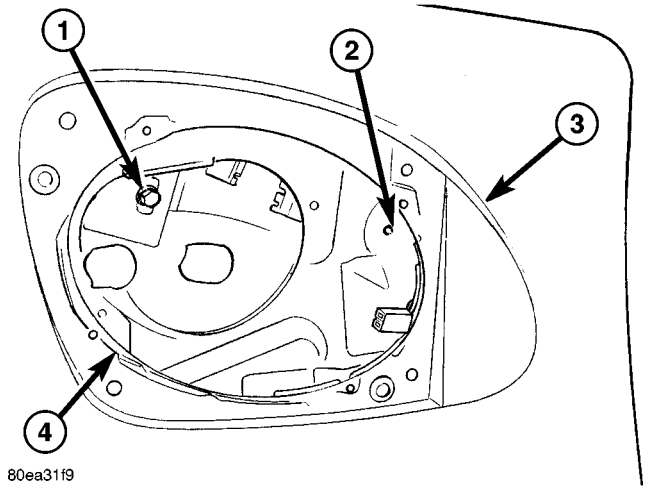

Fig. 3 UP STOP ADJUSTMENTS

1 - REAR UP STOP BOLT
2 - FRONT UP STOP BOLT
3 - QUARTER TRIM PANEL
4 - SPEAKER OPENING

(2) Remove center and rear side rail weatherstrips from side rail weatherstrip retainer channels.
(3) Loosen up-stop nuts.
(4) Raise quarter glass.
(5) Slide up-stop to achieve proper glass to weatherstrip retainer gap. (Fig. 4)
(6) Tighten all fasteners.
(7) Install center and rear side rail weatherstrips to side rail weatherstrip retainer channels.
(8) Cycle quarter glass between full up and full down positions. Verify operation and adjust as necessary.
(9) Verify that the top edge of the door glass is beneath the lip of the weatherstrip.
(10) Re-apply the sealing patch. Install the speaker cup, speaker and speaker cover.

BOTTOM OF GLASS – INBOARD/OUTBOARD ADJUSTMENTS

(1) Remove the speaker cover, speaker and speaker cup, if equipped.
(2) Using a suitable offset wrench, loosen the upper forward jack screw set nut. (Fig. 5)
(3) Using a suitable allen wrench (Fig. 6), rotate the jack-screw to achieve the proper gap between the door glass and the quarter glass seal (Fig. 4). Tighten all fasteners prior to measuring the gaps.
(4) Install speaker cup, if equipped, speaker and cover.

TOP OF GLASS – INBOARD/OUTBOARD ADJUSTMENTS

(1) Remove quarter trim panel. (Refer to 23 - BODY/INTERIOR/QUARTER PANEL TRIM - REMOVAL)

NOTE: Alternatively, the lower adjustment can be accessed through a hole at the bottom of the quarter trim panel. This hole can be located by removing the rear seat cushion. (Refer to 23 - BODY/SEATS/SEAT CUSHION - REMOVAL)

(2) Remove center and rear side rail weatherstrips from side rail weatherstrip retainer channels.
(3) Using a suitable wrench, loosen the lower jack screw jam nuts.
(4) Raise quarter glass.
(5) Using a suitable allen wrench, rotate jack-screws to achieve the proper gap between the door glass weatherstrip retainer channel. (Fig. 4)
(6) Verify that the quarter glass maintains even contact with the outer belt weatherstrip.
(7) Install center and rear side rail weatherstrips to side rail weatherstrip retainer channels.
(8) Cycle quarter glass between full up and full down positions. Verify operation and adjust as necessary.
(9) Tighten all fasteners.
(10) Verify that the top edge of the door glass is beneath the lip of the weatherstrip with glass in the full up position.
(11) Install quarter trim panel. (Refer to 23 - BODY/INTERIOR/QUARTER PANEL TRIM - INSTALLATION)

GLASS – FRONT/REAR ADJUSTMENT

(1) Remove quarter trim panel. (Refer to 23 - BODY/INTERIOR/QUARTER PANEL TRIM - REMOVAL)
(2) Remove center and rear side rail weatherstrips from side rail weatherstrip retainer channels.
(3) Loosen glass attachment bolts.

PCV VALVE (Continued)

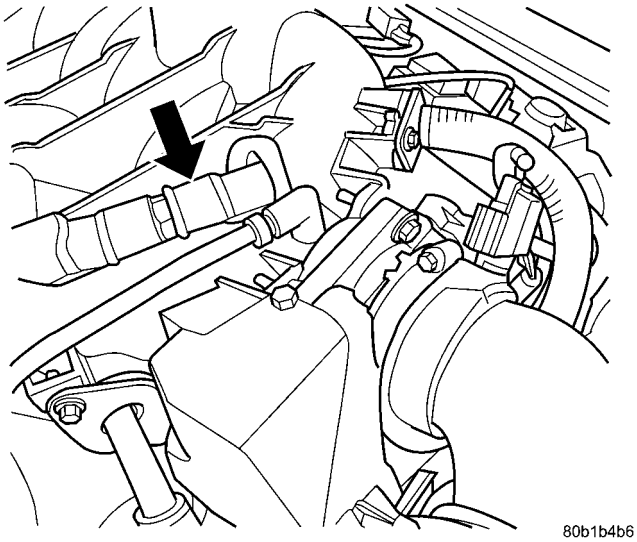

Fig. 12 POSITIVE CRANKCASE VALVE

OPERATION

When the engine is not operating or during an engine backfire, the spring forces the plunger back against the seat. This prevents vapors from flowing through the valve (Fig. 13).

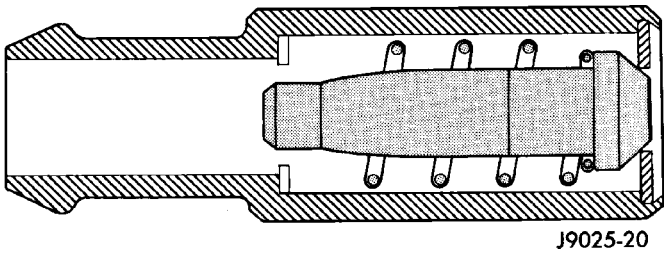

Fig. 13 Engine Off or Engine Backfire No Vapor Flow

When the engine is at idle or cruising, high manifold vacuum is present. At these times manifold vacuum is able to completely compress the spring and pull the plunger to the top of the valve (Fig. 14). In this position there is minimal vapor flow through the valve.

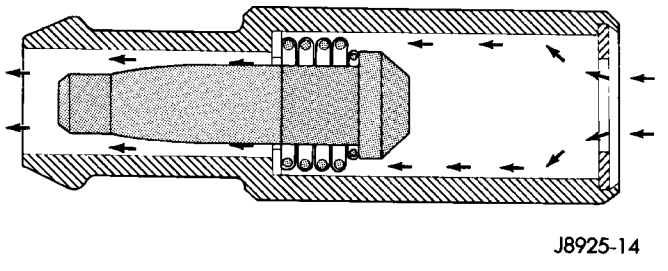

Fig. 14 High Intake Manifold Vacuum Minimal Vapor Flow

During periods of moderate intake manifold vacuum the plunger is only pulled part way back from the inlet. This results in maximum vapor flow through the valve (Fig. 15).

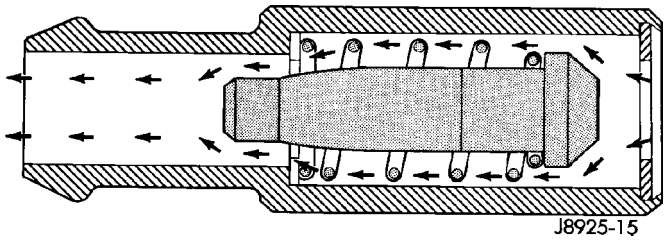

Fig. 15 Moderate Intake Manifold Vacuum Maximum Vapor Flow

DIAGNOSIS AND TESTING - PCV SYSTEM

WARNING: APPLY PARKING BRAKE AND/OR BLOCK WHEELS BEFORE PERFORMING ANY TEST OR ADJUSTMENT WITH THE ENGINE OPERATING.

(1) With engine idling, remove the hose from the PCV valve. If the valve is not plugged, a hissing noise will be heard as air passes through the valve. A strong vacuum should also be felt when a finger is placed over the valve inlet.

(2) Install hose on PCV valve. Remove the make-up air hose from the air plenum at the rear of the engine. Hold a piece of stiff paper (parts tag) loosely over the end of the make-up air hose.

(3) After allowing approximately one minute for crankcase pressure to reduce, the paper should draw up against the hose with noticeable force. If the engine does not draw the paper against the grommet after installing a new valve, replace the PCV valve hose.

(4) Turn the engine off. Remove the PCV valve from intake manifold. The valve should rattle when shaken.

(5) Replace the PCV valve and retest the system if it does not operate as described in the preceding tests. **Do not attempt to clean the old PCV valve.** If the valve rattles, apply a light coating of Loctite® Pipe Sealant With Teflon to the threads. Thread the PCV valve into the manifold plenum and tighten to 7 N·m (60 in. lbs.) torque.

VAPOR CANISTER

DESCRIPTION

The canister attaches to the bracket. The vacuum and vapor tubes connect to the top of the canister (Fig. 16). It is a charcoal canister.

OPERATION

All vehicles use a maintenance free, evaporative (EVAP) canister. Fuel tank vapors vent into the can-