

## TUNE-UP

### ENGINE IDENTIFICATION

The Engine Identification Number is located as follows:

**318" & 360"** — Front face of block, directly below cylinder head on left bank.

**400", 413" & 440"** — Top front of cylinder block, forward of number 2 cylinder.

The first three numerals designate engine cubic inch displacement. The premium 318"-3 engine is designated by a "3" stamped below engine number.

Application	Numerals
318" .....	318
360" .....	360
400" .....	400
413" .....	413
440" .....	440

### MODEL IDENTIFICATION

#### VEHICLE IDENTIFICATION NUMBER

Number is located on left front door lock pillar.

**A13AAOU10001**

**First & Second Digits** — Model Code.

**Third Digit** — Body Type.

**Fourth Digit** — Gross Vehicle Weight.

**Fifth Digit** — Engine Type.

**Sixth Digit** — Model Year.

**Seventh Digit** — Plant.

**Remaining Digits** — Sequence Built Number.

### TUNE-UP NOTES

► **IDLE SPEED ADJUSTMENT CAUTION** — Procedures and specifications for idle speed adjustment must be followed exactly as outlined. See "Hot (Slow) Idle RPM" under Tune-Up.

**NOTE** — For other items affecting Tune-Up, see CARBURETION Section or EMISSION CONTROL Section.

**NOTE**— For Tune-Up purposes only: Light Duty will refer to D100, W100, and "B" models except B300 Van, B300 Sportsman 15 passenger, CB300, MB300. Heavy Duty will refer to D200, D300, W200, W300, B300 Van, B300 Sportsman 15 passenger, CB300, MB300.

**NOTE**— Due to changes and corrections, always refer to Engine Tune-Up Decal in engine compartment before attempting tune-up. In the event of a conflict between specifications given in this manual and decal specifications, decal specifications prevail.

### COMPRESSION PRESSURE

With engine warm, all spark plugs removed and throttle wide open, the maximum variation between cylinders of any one engine should not exceed 40 psi.

Application	PSI
All .....	100 min.

### VALVE TAPPET CLEARANCE

All (Hydraulic) ..... Zero Lash

### VALVE ARRANGEMENT

E-I-I-E-E-I-I-E (Front to rear, both banks.)

### SPARK PLUGS

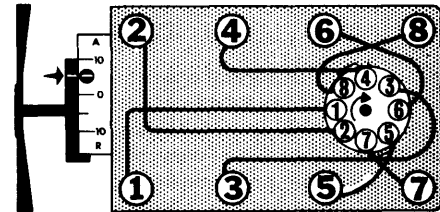
Gap .....	.035"
Torque	
14 mm .....	30 Ft. Lbs.
18 mm .....	20 Ft. Lbs.

### Spark Plug Type

Application	Champion No.
318" .....	N-11Y
318"-3 .....	F-10
360" .....	N-13Y
400" & 440" .....	J-11Y
413" .....	N-6

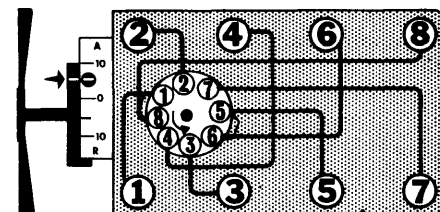
### DISTRIBUTOR

Point Gap .....	.014-.019"
Electronic Ignition Air Gap	
Go .....	.008"
No Go .....	.010"
Cam Angle .....	30-34°
Breaker Arm Spring Tension .....	17-20 ozs.
Condenser Capacity .....	.25-.285 mfd.



3DOA001A

### FIRING ORDER & TIMING MARKS 318" - 360"



3DOA001B

### FIRING ORDER & TIMING MARKS 400", 413", 440"

# 1973 Dodge V8 Tune-Up

## TUNE-UP (Cont.)

### IGNITION TIMING

Adjust timing with hot (slow) idle speed set, engine running at normal operating temperature, distributor vacuum advance line disconnected and plugged, and transmission in Neutral.

Application	ⓐTiming
<b>Breaker Point Ignition</b>	
318"	2.5° BTDC
360"	TDC
<b>Electronic Ignition</b>	
318"	
Light Duty	
Man. Trans.	2.5° BTDC
Auto. Trans.	TDC
Heavy Duty	
Calif.	TDC
Federal	
Man. Trans.	5° BTDC
Auto. Trans.	TDC
318"-3	2.5° BTDC
360"ⓑ	TDC
400"	
Light Duty	10° BTDC
Heavy Duty	2.5° BTDC
413" (Motor Home)	5° BTDC
440"	10° BTDC

- ⓐ — Tolerance, 2.5°.
- ⓑ — With Distributor Nos. 3656780, 3755365, 3755336, 3755337, check Engine Tune-Up Decal in engine compartment for correct setting.

### HOT (SLOW) IDLE RPM

With engine running at normal operating temperature, timing checked, air cleaner installed, air conditioning off, and transmission in Neutral, connect tachometer and insert probe of exhaust gas analyzer a minimum of two feet into tail pipe. Warm up and calibrate analyzer according to manufacturer's instructions and clamp hose shut between distributor vacuum control valve (if equipped) and intake manifold. Adjust idle mixture screws 1/16 turn richer (out) and wait ten seconds before reading meter and, if necessary, adjust again until meter shows a definite increase in richness. Adjust idle mixture screws 1/16 turn at a time to obtain 14.0 to 14.4 ("D", "W" Models) or 14.2 ("B" Models) air/fuel ratio, adjusting idle speed screw, if necessary, to maintain specified RPM. If engine idles roughly, idle mixture screws may be adjusted independently so long as specified air/fuel ratio is maintained. Remove clamp from distributor vacuum valve hose. If engine speed changes materially, check and set valve. See *Distributor Vacuum Control Valve Adjustment*.

Application	Idle Speed	RPM
318"		
Man. Trans.		750
Auto. Trans.		
Light Duty		700
Heavy Duty		750
318"-3		700

### Idle Speed (Cont.)

Application	RPM
360"	
Light Duty	
Federal	700
Calif.	750
Heavy Duty	
Man. Trans.	700
Auto. Trans.	
Federal	700
Calif.	750
400"	700
413"	ⓐ
440"	700

ⓐ — See Engine Tune-Up Decal for specification.

### COLD (FAST) IDLE RPM

With engine at normal operating temperature, transmission in Neutral or Park, choke open, slow idle, timing, and Distributor Vacuum Control Valve checked, open throttle slightly and position fast idle speed adjusting screw on second highest step of fast idle cam. Start engine without touching throttle and wait for engine speed to stabilize. Adjust screw to obtain specified RPM. If more than one adjustment is necessary, move fast idle speed adjusting screw from fast idle cam and return to normal position, then position screw on second highest step of cam before making each subsequent adjustment.

#### Fast Idle Speed

Application	RPM
318"	
Light Duty	1700
Heavy Duty	
Man. Trans.	1600
Auto. Trans.	
Federal	1900
Calif.	1700
318"-3	1900
360"	
All (Exc. W/Holley Carb. No. R-6486A)	1900
W/Holley Carb. No. R-6486A	1800
400"	1800
413"	1900
440"	1700

### AUTOMATIC CHOKE SETTING

Nonadjustable. Check for free movement on pivot by moving choke rod up and down. If unit binds, install new one.

### DISTRIBUTOR VACUUM CONTROL VALVE ADJUSTMENT

Move dashpot so that stem does not contact throttle. Connect tachometer, vacuum gauge (0-30 in. Hg), and remove distributor vacuum tube at distributor and clamp tube closed. Set timing and hot (slow) idle to specifications. Reconnect vacuum tube and run engine at 2000 RPM for five seconds in Neutral. When throttle is released, distributor vacuum should increase to over 16 in. Hg for a minimum of one second and fall below six in. Hg within three seconds. Remove vacuum control cover and turn adjusting screw for adjustment. Readjust dashpot. See *Dashpot Adjustment*. Recheck valve performance. If distributor vacuum does not fall below six in. Hg within four seconds after throttle is released, readjust or replace dashpot.

## TUNE-UP (Cont.)

### DASHPOT ADJUSTMENT

With hot (slow) idle speed set to specifications, position throttle lever so that tab on lever is just touching dashpot stem but not depressing it. The engine speed on "B" models should be 2300 RPM and on all others 2500 RPM. To adjust, screw dashpot in or out as required.

### MANIFOLD HEAT CONTROL VALVE

Check valve for freedom of movement and lubricate with suitable solvent (Part No. 3419129) every 4,000 miles.

### FUEL PUMP PRESSURE & VOLUME

Pressure (At Idle)	
318", 360".....	5-7 psi
400", 413".....	3.5-5 psi
440".....	6-7.5 psi
Volume (At Idle)	
All (Exc. Electric).....	1 qt. in 1 min.
Electric.....	①
① - Not available.	

### EMISSION CONTROL

See appropriate article in EMISSION CONTROL Section.

## IGNITION

### IGNITION COIL

<b>Application</b>	<b>Chrysler Part No.</b>
All.....	2444242
<b>Resistance</b>	<b>Ohms @ 70-80°F</b>
Primary.....	1.65-1.79
Secondary.....	9,400-11,700
<b>Ballast Resistor</b>	
Breaker Point Ignition.....	5-.6
Electronic Ignition	
Coil Side.....	5-.6
Control Unit Side.....	4.75-5.75

### DISTRIBUTOR

<b>Application</b>	<b>Chrysler Part No.</b>
Breaker Point Ignition	
318".....	3656287
360".....	3656272

### DISTRIBUTOR (Cont.)

<b>Application</b>	<b>Chrysler Part No.</b>
Electronic Ignition	
318"	
Light Duty.....	3656763
Heavy Duty.....	3656672
318"-3.....	3656667
360"	
Light Duty.....	①3656780
Heavy Duty	
Federal.....	3755160
Calif. ....	3656672
400"	
Light Duty.....	3656791
Heavy Duty.....	3755150
413"	
Federal.....	3755205
Calif. ....	3636839
440".....	3755157

① - Distributor Nos. 3656780, 3755365, and 3755336 superseded this distributor in various applications.

**Other Data & Specifications** - See Tune-Up and Chrysler Distributors in ELECTRICAL Section.

## CARBURETION

### CARBURETORS

#### Carter BBD Series 2-Bbl.

	<b>Carter Part No.</b>	
<b>Application</b>	<b>Man. Trans.</b>	<b>Auto. Trans.</b>
318"		
Light Duty		
Federal.....	6316SA.....	6317SA
Calif. ....	6343SA.....	6344SA
Heavy Duty		
Federal.....	6221S.....	6222S
Calif. ....	6363S.....	6364S
318"-3.....		6365S

#### Carter Thermo-Quad 4-Bbl.

	<b>Carter Part No.</b>	
<b>Application</b>	<b>Man. Trans.</b>	<b>Auto. Trans.</b>
440".....	①.....	6446, 6518

① - Not applicable.

#### Holley No. 2210 2-Bbl.

	<b>Holley Part No.</b>	
<b>Application</b>	<b>Man. Trans.</b>	<b>Auto. Trans.</b>
360"		
Light Duty		
Federal.....	①.....	R-6452A
Calif. ....	R-6484A.....	R-6475A
Heavy Duty.....	R-6458A.....	R-6486A
400"		
Light Duty		
Federal.....	①.....	R-6454A
Calif. ....	①.....	R-6472A
Heavy Duty.....	R-6487A.....	R-6488A

① - Not applicable.

#### Holley Series 4160C 4-Bbl.

	<b>Holley Part No.</b>	
<b>Application</b>	<b>Man. Trans.</b>	<b>Auto. Trans.</b>
413".....	①.....	R-6495A

① - Not applicable.

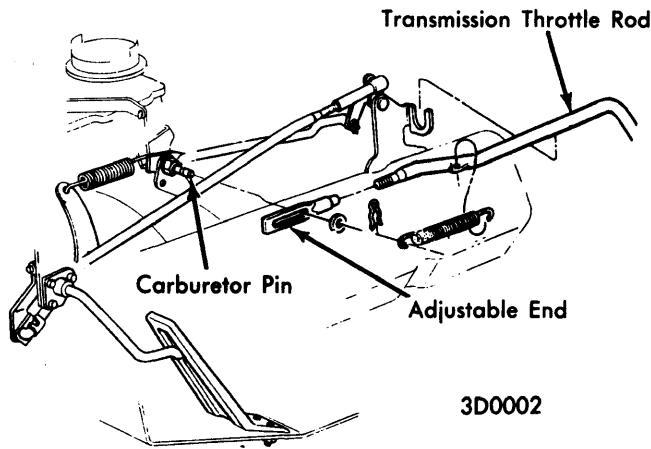
**Other Data & Specifications** - See Tune-Up and Carter or Holley Carburetors in CARBURETION Section.

# 1973 Dodge V8 Tune-Up

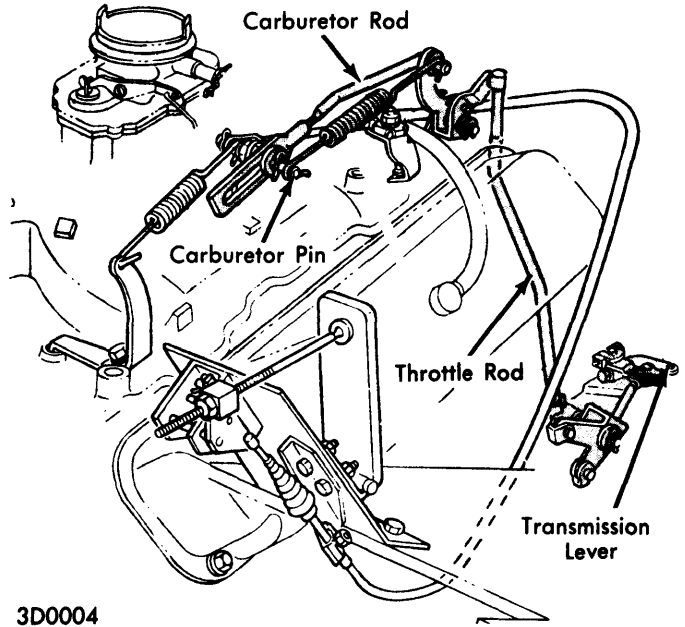
## CARBURETION (Cont.)

### ACCELERATOR AND DOWNSHIFT LINKAGE ADJUSTMENT

**Auto. Trans. "B" Models** — Adjust hot (slow) idle speed to specifications and block choke wide open. With linkage properly lubricated, remove return spring from carburetor pin and tab on transmission throttle rod. Remove clip, washer and slotted throttle rod end from carburetor pin. Have someone hold throttle rod forward firmly against its internal stop and adjust threaded rod end so that rear edge of slot contacts carburetor pin with throttle rod in the full forward position. Install flat washer and clip to retain throttle rod on carburetor pin. Install spring and unblock choke.

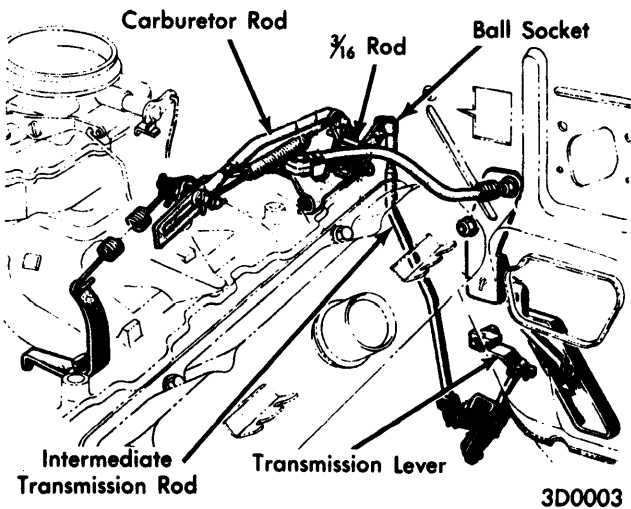


and washer and adjust length of carburetor rod so that rear of slot contacts carburetor pin with no forward force on pin. Reassemble and check freedom of operation by moving slotted link at carburetor to full rearward position, then allowing it to return slowly. It must return to full forward position. Unblock choke and check to see that transmission throttle rod begins to move simultaneously with carburetor.

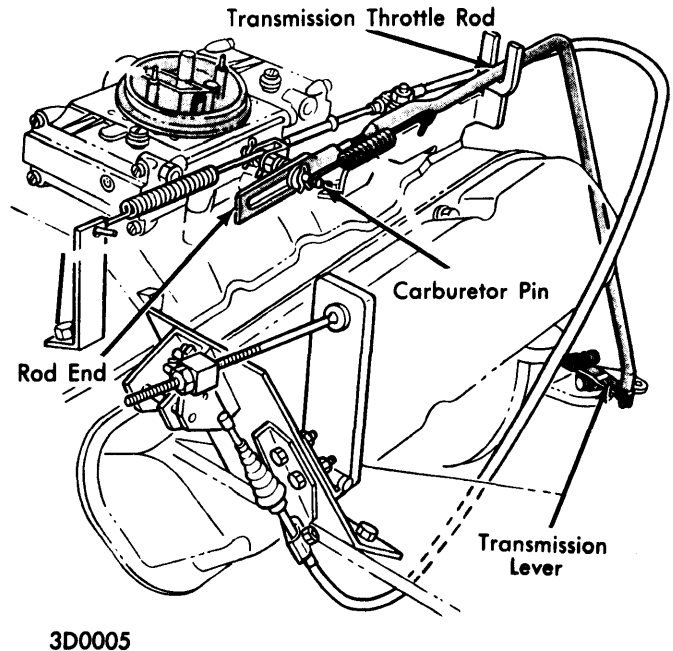


### ACCELERATOR AND DOWNSHIFT LINKAGE ADJUSTMENT "B" MODELS

**Auto. Trans. W/Three Section Throttle Rod** — With linkage properly lubricated and hot (slow) idle speed set to specifications, block choke wide open. Have someone hold transmission throttle rod forward during the following steps. Insert a 3/16" diameter rod in holes in upper bellcrank and lever. Adjust length of intermediate transmission rod by turning threaded ball socket at upper end so that ball socket lines up with ball end with a slight downward pressure on rod. Reassemble and remove 3/16" rod. Disconnect return spring, clip



### ACCELERATOR AND DOWNSHIFT LINKAGE ADJUSTMENT MOTOR HOME 318"



### ACCELERATOR AND DOWNSHIFT LINKAGE ADJUSTMENT "D", "W" MODELS

### ACCELERATOR AND DOWNSHIFT LINKAGE ADJUSTMENT MOTOR HOME (EXC. 318")

## CARBURETION (Cont.)

**Auto. Trans. 400", 413", 440" Motor Home (Exc. 318")** - With linkage properly lubricated and hot (slow) idle speed set to specifications, block choke wide open. Have someone hold transmission throttle lever forward against its stop during following procedures. Disconnect return spring, clip and washer, then adjust length of carburetor rod by pushing rearward on rod with a slight effort to remove all backlash and turning the threaded adjustment. Rear end of slot should contact carburetor lever pin without exerting any

forward force on pin when slotted adjuster link is in its normal operating position. Assemble slotted adjustment to carburetor lever pin and install washer and retainer clip. Replace return spring. Release transmission throttle lever. Check freedom of operation by moving the slotted link at carburetor to full rearward position and allowing it to return slowly. It must return to the full forward position. Unblock choke and visually check adjustment to see that transmission throttle rod begins to move simultaneously with carburetor.

## ELECTRICAL

### BATTERY

12 Volt - Negative Ground.

Application	Capacity (Amps.)
Standard	
"B", "D", "W" Models	48
Motor Homes	70
Optional	
"B", "D", "W" Models	59,70
Motor Homes	90

### STARTER

Application	Chrysler Part No.
All	3656650

**Other Data & Specifications** - See *Chrysler Starters in ELECTRICAL Section.*

### ALTERNATOR

Application	Amps.	Chrysler Part No.
Single Groove Pulley		
Standard	41	ⓐ
Optional	50	3438806
Optional	60	3438807
Double Groove Pulley		
Standard	41	ⓐ
Optional	50	3621853
Optional	60	3621861

ⓐ - Not available.

**Other Data & Specifications** - See *Chrysler Alternators in ELECTRICAL Section.*

### ALTERNATOR REGULATOR

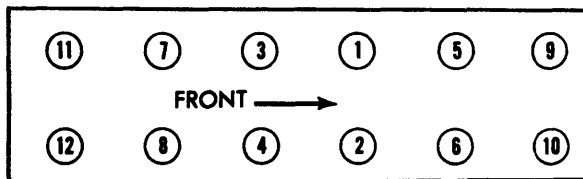
Application	Chrysler Part No.
All	3438150

**Other Data & Specifications** - See *Chrysler Alternator Regulators in ELECTRICAL Section.*

## ENGINE

### INTAKE MANIFOLD TIGHTENING

Tighten bolts in sequence shown in diagram to 35 ft. lbs. (318" & 360") or to 40 ft. lbs. (400", 413", 440").



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### INTAKE MANIFOLD TIGHTENING

### BELT ADJUSTMENT

**Belt Tension Gauge Method Using Strand Tension Gauge**

Application	New Belt	ⓐ Used Belt
All	120 Lbs.	70 Lbs.

ⓐ - Any belt operated for 15 minutes or longer.

### COOLING CAPACITIES

Application	Quantity W/Heater
"B", "D", "W" Models	
318"	
D100, W100	17 qts.
D200, D300, W200, W300	ⓐ 17 qts.
"B" Models	ⓑ 17 qts.
360"	ⓐ 16 qts.
400"	
All (Exc. D300)	ⓐ 16 qts.
D300	ⓐ 17 qts.
440"ⓐ	
D100	ⓐ 16 qts.
D200, D300	ⓐ 17 qts.
Motor Homes (W/O Heater)	
318"-3	ⓐ 22 qts.
413"	ⓐ 27 qts.

- ⓐ - Add 1½ quarts if equipped with Air Conditioning.
- ⓑ - Add 1 quart if equipped with Air Conditioning.
- ⓒ - Add 1 quart if equipped with Air Conditioning and/or Increased Cooling.
- ⓓ - Add 1 quart if equipped with Coolant Reserve System.

# 1973 Dodge V8 Tune-Up

## ENGINE (Cont.)

### FILTERS & CLEANERS

Filter or Cleaner	Service Interval (Miles)
Oil Filter.....	Replace 8,000
Air Cleaner	
Oil Bath.....	①Clean 12,000
Paper Element.....	②Clean 8,000
Crankcase Inlet Air Cleaner.....	①Clean 12,000
Fuel Vapor Storage Canister Filter.....	Replace 12,000
Fuel Filter	
Paper Element.....	Replace 10,000
Disposable Canister	
All (Exc. "W" Models).....	Replace 24,000
"W" Models.....	Replace 20,000
Distributor Wick③.....	Oil 18,000

- ① — Use SAE 30.
- ② — Replace at 24,000 miles.
- ③ — Electronic Ignition Distributors need no periodic lubrication.

### CAPACITIES

#### (EXCEPT COOLING)

Application	Quantity
Crankcase	
All (Exc. Motor Home).....	①5 qts.
Motor Home.....	①6 qts.
Automatic Transmission	
All (Exc. "B" Models).....	19 pts.
"B" Model.....	18.5 pts.
Manual Transmissions.....	②
Front & Rear Axles & Transfer Case.....	②
Four Wheel Drive Knuckle Ends.....	②
Fuel Tank	
"D", "W" Models.....	23 gals.
"B" Model.....	25 gals.
RM300	
All (Exc. 104" Wheelbase).....	40 gals.
104" Wheelbase.....	25 gals.
RM350, RM400.....	50 gals.

- ① — Add quart with filter change.
- ② — Fill to bottom of filler plug hole.