

1972 Dodge V8 Tune-Up

TUNE-UP

ENGINE IDENTIFICATION

The Engine Identification Number is located as follows:

- 318" & 360" - Left front of block below cylinder head.
- 400" - Right side of block adjacent to number 2 cylinder.
- 413" - Left side of block adjacent to front tappet rail.

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

MODEL IDENTIFICATION

VEHICLE IDENTIFICATION NUMBER

Number is located on left front door lock pillar.

A13AAOU100001

- 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 - 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

Gap035"
Torque	
14 mm	30 Ft. Lbs.
18 mm	20 Ft. Lbs.

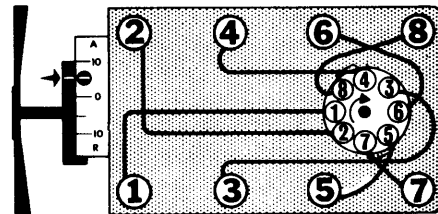
Spark Plug Type

Application	Champion No.
318"	N-11Y
318"-3 (18 mm)	F-10
360"	N-13Y
400"	J-11Y
413"	N-6

DISTRIBUTOR

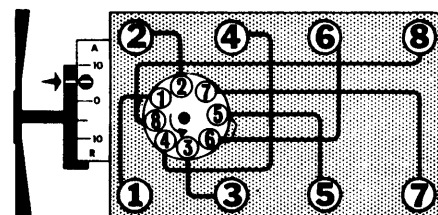
Point Gap	
All (Exc. 413")014-.019"
413"013-.018"
Electronic Ignition Air Gap	
Go008"
No Go010"
Cam Angle⓪	
318", 318"-3 (Exc. Motor Home), 360", 400"	30-34°
318"-3 Motor Home	30-35°
413"	28-32°
Breaker Arm Spring Tension	
All (Exc. 413")	17-20 ozs.
413"	17-21 ozs.
Condenser Capacity25-.285 mfd.

⓪ - With solenoid wire (if equipped) disconnected.



DOA001A

FIRING ORDER & TIMING MARKS 318" - 360"



2DOA001B

FIRING ORDER & TIMING MARKS 400" - 413"

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
Breaker Point Ignition	
318"	
W/O NOx.....	2.5° ATDC
W/NOx.....	TDC
W/Dist. No. 3656287.....	ⓐ2.5° BTDC
318"-3.....	5° BTDC
360"	
W/O NOx.....	TDC
W/NOx.....	2.5° BTDC
400"	
Light Duty.....	5° BTDC
Heavy Duty.....	2.5° BTDC
413".....	5 BTDC
Electronic Ignition	
318"	
Federal.....	5° BTDC
Calif.	TDC
318"-3.....	2.5° BTDC
360".....	TDC
413".....	5° BTDC

- ⓐ — Tolerance, ±2.5°.
- ⓑ — May be set at 5° BTDC ± 2.5° (Except in Calif.) to improve performance.

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 between distributor vacuum control valve (if equipped) and intake manifold. Adjust idle mixture screws 1/6 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 screw 1/6 turn at a time to obtain 14.0 to 14.4 air/fuel ratio, adjusting idle speed screw, if necessary, to maintain specified RPM. Remove clamp from distributor vacuum valve hose. If engine speed changes materially, check and set valve. See *Distributor Vacuum Control Valve Adjustment*.

Idle speed (RPM)

Application	RPM
318" (Exc. Man. Trans. Calif.).....	750
318" Man. Trans. Calif.	700
318"-3.....	700
360" (Exc. W/Holley Carb. Nos. R-6275A, R-6276A).....	750
360" W/Holley Carb. Nos. R-6275A, R-6276A.....	700
400".....	700
413".....	600

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 again before making each subsequent adjustment.

Fast Idle Speed

Application	RPM
318"	
Auto. Trans.	
W/NOx.....	2000
W/O NOx.....	1900
Man. Trans.	
W/NOx.....	1800
W/O NOx.....	1700
318"-3.....	1600
360".....	2000
400" (Exc. W/Holley Carb. No. R-6368A).....	2000
400" W/Holley Carb. No. R-6368A.....	1900
413".....	1900

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 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.

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.

FUEL PUMP PRESSURE & VOLUME

Pressure (At Idle)	
318", 360".....	5-7 psi
400".....	3.5-5 psi
413".....	7-8.5 psi
All Optional (Electric).....	4-4.75 psi
Volume (At Idle)	
All (Exc. Electric).....	1 qt. in 1 min.
Electric.....	ⓐ

- ⓐ — Not available.

MANIFOLD HEAT CONTROL VALVE

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

EMISSION CONTROL

See appropriate article in *EMISSION CONTROL Section*.

1972 Dodge V8 Tune-Up

IGNITION

DISTRIBUTOR

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

Application	Chrysler Part No.
Breaker Point Ignition	
318"	
W/O NOx.....	3656272, 3656287
W/NOx.....	3656275
318"-3.....	3656294
360"	
W/O NOx.....	3656272
W/NOx.....	3656275
400".....	3656329
413".....	3656365
Electronic Ignition	
318".....	3656672
318"-3.....	3656667
360"	
Federal.....	3755160
Calif.....	3656672
400".....	①
413"	
Federal.....	3755205
Calif.....	3656839

IGNITION COIL

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

① — Not available.

CARBURETION

CARBURETORS

Carter BBD Series 2-Bbl.

Application	Carter Part No.	
	Man. Trans.	Auto. Trans.
318"		
W/NOx.....	6151S.....	6152S
W/O NOx.....	6149S, 6221S.....	6150S, 6222S
318"-3.....	6225S.....	6225S

Holley No. 2210 2-Bbl.

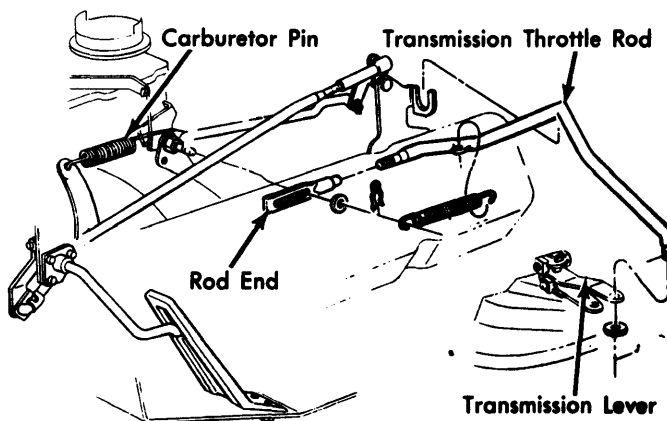
Application	Holley Part No.	
	Man. Trans.	Auto. Trans.
360"		
W/NOx.....	R-6161AAS.....	R-6162AAS
W/O NOx.....	R-6163A, R-6275A...R-6164A, R-6276A	
400"		
W/A.I.R.	①.....	R-6368A
W/O A.I.R.	R-6373A.....	R-6374A, R-6370A
413".....	①.....	②R-6231A

① — Not applicable.

② — Series 4160C 4-Bbl.

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 an assistant hold throttle rod forward firmly against its internal stop and adjust threaded rod end so rear edge of slot contacts carburetor pin. Install flat washer and clip to retain throttle rod on carburetor pin. Install spring and unblock choke.

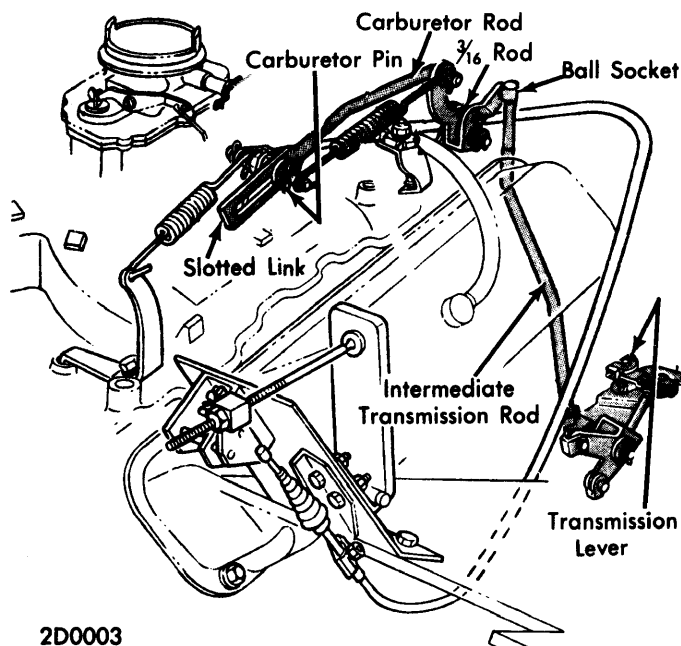


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ACCELERATOR AND DOWNSHIFT LINKAGE ADJUSTMENT "B" MODELS

CARBURETION (Cont.)

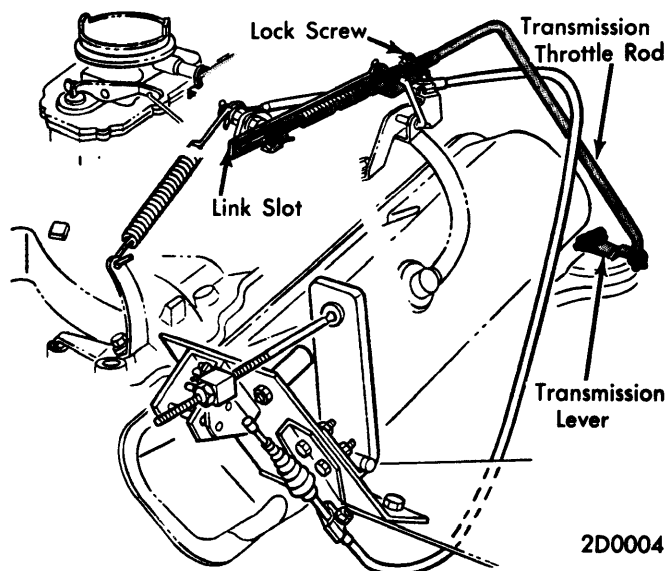
Auto. Trans. W/Three Section Throttle Rod – With linkage properly lubricated and hot (slow) idle speed set to specifications, block choke wide open. Have an assistant hold transmission throttle rod forward during the following steps. Insert a $\frac{3}{16}$ " diameter rod in holes in upper bellcrank 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 $\frac{3}{16}$ " rod. Disconnect return spring, clip, 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.



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ACCELERATOR AND DOWNSHIFT LINKAGE ADJUSTMENT W/THREE SECTION ROD

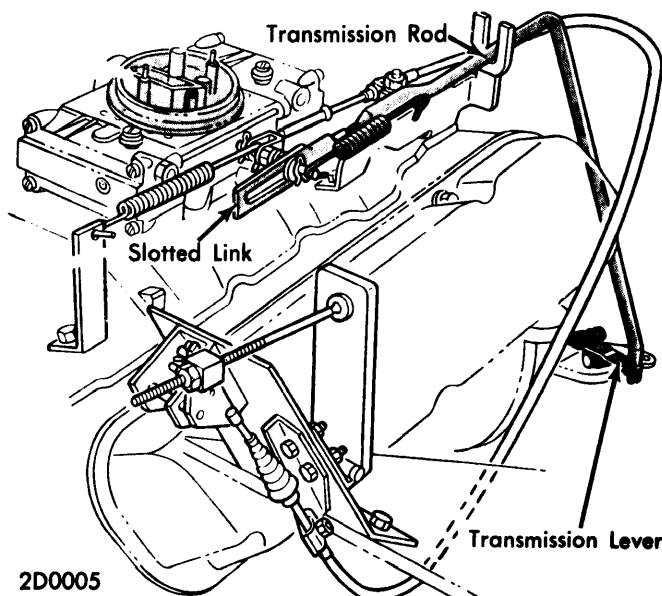
Auto. Trans. W/Single Section Throttle Rod – With linkage properly lubricated and hot (slow) idle speed set to specifications, block choke wide open. Loosen transmission throttle rod adjustment lock screw. Have an assistant hold transmission throttle lever forward against its stop and adjust the transmission rod at the carburetor by pushing forward on the retainer and rearward on the rod with a slight force to remove all backlash. Tighten transmission rod adjustment locking screw to 100 INCH lbs. The rear edge of link slot must be against the carburetor lever pin during this adjustment. Check linkage freedom of operation by moving 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.



2D0004

ACCELERATOR AND DOWNSHIFT LINKAGE ADJUSTMENT MOTOR HOME

Auto. Trans. 413" Motor Home – 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 by turning the threaded adjustment. Rear end of slot should contact carburetor lever pin without exerting any forward force on pin when slotted adjustment link is in its normal operating position. Assemble slotted adjustment link 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.



2D0005

ACCELERATOR AND DOWNSHIFT LINKAGE ADJUSTMENT 413" MOTOR HOME

1972 Dodge V8 Tune-Up

ELECTRICAL

BATTERY

12 Volt - Negative Ground.

Application	Capacity (Amps)
Standard	
"B" Models.....	48
"D", "W" Models.....	46
Motor Homes.....	70
Optional	
"B", "D", "W" Models.....	59, 70
Motor Homes.....	90

STARTER

Application	Chrysler Part No.
All	2875560

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

ALTERNATOR

Application	Amps.	Chrysler Part No.
Std. Equip.		
W/O Air Cond.		
W/O NOx.....	50.....	3438806
W/NOx.....	50.....	3656218
W/Air Cond.....	50.....	3438809
Opt. Equip.		
W/O Air Cond.		
W/O NOx.....	60.....	3438807
W/NOx.....	60.....	3656219
W/Air Cond.....	60.....	3438813
Motor Home.....	60.....	3438846

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

ALTERNATOR REGULATOR

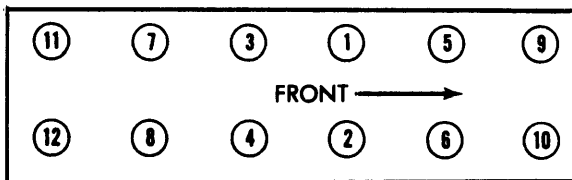
Application	Chrysler Part No.
All	3438150

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").



2D0006

INTAKE MANIFOLD TIGHTENING

BELT ADJUSTMENT

Tension (Lbs.) Using Strand Tension Gauge

Application	New Belt	⓪Used Belt
All	120 Lbs.....	70 Lbs.

⓪ - Any belt operated for 15 minutes or longer.

COOLING CAPACITIES

Application	Quantity W/Heater
318".....	17 qts.
W/Increased Cooling	
"B" Models.....	Add 1 qt.
All Others	Add 1 qt.
W/Air Conditioning	
"B" Models.....	Add 1 qt.
D100, W100.....	Add 1 pt.
D200, D300, W200, W300.....	Add 1.5 qts.
Auto. Trans. (W100 only).....	Add 1 pt.
318"-3 Motor Home.....	22 qts.
360"	
"B" Models.....	⓪17 qts.
All Others	⓪16 qts.
400".....	⓪16 qts.
413" Motor Home.....	27 qts.

⓪ - Add 1 quart if equipped with air conditioning.

⓪ - Add 1 quart if equipped with air conditioning or Increased Cooling.

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	
"D", "W" Models	Replace 10,000
Motor Homes	Replace 8,000
Disposable Canister	
"D", "W" Models	Replace 20,000
Motor Homes	Replace 24,000
Distributor Wick	
"D", "W" Models	①Oil 12,000
Motor Homes, "B" Models	①Oil 18,000

① - Use SAE 30.

② - Replace at 24,000 miles.

CAPACITIES (EXCEPT COOLING)

Application	Quantity
Crankcase	
318", 360", 400"	①5 qts.
318"-3, 413"	①6 qts.
Automatic Transmission	
All (Exc. "B" Models).....	19 pts.
"B" Models.....	18.5 pts.
Manual Transmissions	②
Front & Rear Axles & Transfer Case	②
Four Wheel Drive Knuckle Ends	②
Fuel Tank	
"B", "D", "W" Models	25 gals.
M300 (Exc. 104" Wheelbase).....	40 gals.
300 W/104" Wheelbase	25 gals.
M375	50 gals.

① - Add 1 quart with filter change.

② - Fill to bottom of filler plug hole.