SERVICE BULLETIN

Plymouth
Fargo Trucks
CHRYSLER

Dodge
Dodge Trucks
CHRYSLER

DATE 6-12-70 NO. 1869

SUBJECT: MISCELLANEOUS
SUJET: SPECIFICATIONS AND SERVICE INFORMATION

MODELS: 1970 DODGE "CHALLENGER T/A" AND
MODÈLES: PLYMOUTH "A.A.R. CUDA"

This bulletin is issued as a supplement to the 1970 Plymouth Service Manual WM-4831 and the 1970 Dodge Service Manual WM-4832. It contains specifications and service information peculiar to the 1970 Dodge "Challenger T/A" and the 1970 Plymouth "AAR Cuda".

GROUP I - ACCESSORIES

The accessories and service procedures for the "Trans-AM" and "A.A.R." are the same as outlined in the applicable Service Manual. Cars equipped with a fiberglass hood will have the radio antenna mounted on the right rear quarter. The antenna cable will be routed down the right side sill and spot taped in place.

GROUP 3 - REAR AXLE

The standard rear axle is an 8-3/4" with a 3:55 to 1 ratio. Service procedures and specifications are the same as outlined in the Service Manual.

GROUP 5 - BRAKES

The standard brakes are power disc brakes in front and 11" diameter drum in the rear. There are no optional brake systems available. Service procedures and specifications are the same as outlined in the Service Manual.

GROUP 9 - ENGINE

The "Trans-AM" and "AAR" are available only with the 340 C.I.D. engine, This engine has been specially modified in the following areas:

Cylinder Block	- Stress relieved.
	- Additional material added in main bearing area to allow use of four (4) bolt main bearing caps when modifying for Trans-AM racing.
Cylinder Heads	- Specially machined.
Push Rods	- Longer.
Rocker Arms	- Special offset adjustable.
Tappets	- Heavier snap rings.
Rocker Shafts	- Additional lube holes.

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340 ENGINE SPECIFICATIONS

OVERSIZE AND UNDERSIZE ENGINE COMPONENT MARKINGS

Displacement	Condition	Identification	Location of Identification
340 cu. in.	.001" U/S Crankshaft	R or M M-2-3 etc. (indicating No. 2 & 3 main bearing journal) and/or R-1-4 etc. (indicating No. 1 & 4 connecting rod journal)	Milled flat on number eight crankshaft counterweight
	.010" U/S Crankshaft	RX or MX MX (indicates .010" U/S all main journals) and/or RX (indicating .010" U/S all rod journals)	Milled flat on number eight crankshaft counterweight
	.020" O/S Cylinder Bores	A	Following engine serial number
	.008" O/S Tappets	◆	3/8" diamond shaped stamp-Top pad-Front of engine and flat ground on outside surface of each O/S tappet bore.
	.005" O/S Valve Stems	X	Milled pad adjacent to two 3/8" tapped holes on end of cylinder head.

ENGINE	"340"
Type	90°V
Number of Cylinders	8
Bore	4.040"
Stroke	3.31"
Piston Displacement	340 cu. in.
Compression Ratio	10.5 to 1
Minimum Compression Pressure with Engine Warm, Spark Plugs Removed, Wide-Open Throttle	110 psi
Maximum Variation Between Cylinders (any one engine)	40 psi
Firing Order	1-8-4-3-6-5-7-2
Basic Timing	5 BTC ± 2-1/2°
CYLINDER NUMBERING (front to rear)	
Left Bank	1-3-5-7
Right Bank	2-4-6-8

CYLINDER BLOCK	
Cylinder Bore (standard)	4.040" - 4.0420"
Cylinder Bore Out-of-Round (max. allowable before reconditioning)	.005"
Cylinder Bore Taper (max. allowable before reconditioning)	.010"
Reconditioning Working limits (for taper and out-of-round)	.001"
Maximum Allowable Oversize (cylinder bore)	.040"
Tappet Bore Diameter	.9050"-.9058"
Distributor Lower Drive Shaft Bushings (press fit in block)	.0005"-.0040"
Ream to	.4865"-.4880"
Shaft to Bushing Clearance	.0007"-.0027"
PISTONS	
Type Material	Audothermic Alloy Tin Coated
Land Clearance (diametral)	.019"-.027"
Clearance at Top of Skirt	.0005"-.0015"
Weight (std. through .040" oversize)	719 gms.
Piston Length (overall)	3.545"
Ring Groove Depth	
No. 1	.210"
No. 2	.210"
No. 3	.198"
Pistons for Service	Std. .005", .020", .040" Oversize
PISTON PINS	
Type	Full Floating
Diameter	.9841"-.9843"
Length	2.990"-3.000"
Clearance in Piston (light thumb push @ 70°F)	.0000"-.0005"
End Play	.004"-.026"
Clearance in Rod	.0000"-.0005"
Pins for Service	Std. .003", .008" Oversize
PISTON RINGS	
Number of Rings per Piston	3
Compression	2
Oil	1
Oil Ring Type	3-piece steel rail chrome-face
Ring Width	
Compression	.0775"-.0780"
Oil-Steel Rails	.025"
Ring Gap	
Compression	.010"-.020"
Oil-Steel Rails	.015"-.055"
Ring Side Clearance	
Compression	.0015"-.0030"
Oil-Steel Rails	.0002"-.005"

Service Rings	
Ring Gap	
Compression	.010"-.020"
Oil-Steel Rails	.015"-.062"
Ring Side Clearance	
Compression	.0015"-.004"
Oil-Steel Rails	.0002"-.005"
CONNECTING RODS	
Length (center to center)	6.123"
Weight (less bearing shells)	758 gms.
Side Clearance (two rods)	.006"-.014"
Piston Pin Bore Diameter	1.027"-1.039"
CONNECTING ROD BUSHING	
Type	Steel Backed Bronze
CONNECTING ROD BEARINGS	
Type	Tri Metal Steel Backed
Diameter and Width	2.126" x .842"
Clearance Desired	.0005"-.0020"
Maximum Allowable	.003"
Bearings for Service	Std. .001", .002" .003",.010", .012"
CRANKSHAFT	
Type	Fully Counter-Balanced
Bearings	Steel Backed Aluminum
* #5 Steel Backed Babbitt	#1,2,3,4 & 5*
Thrust Taken By	No. 3 Main Bearing
End Play	.002"-.007"
Maximum Allowable	.010"
Diametral Clearance Desired	.0005"-.0015"
Diametral Clearance Allowed	.0025"
Finish at Rear Oil Seal Surface	Diagonal Knurling
MAIN BEARING JOURNALS	
Diameter	2.4995"- 2.5005"
Maximum Allowable Out-of-Round and/or Taper	.001"
Bearings for Service Available in Standard and the following Undersizes	.001", .002", .003" .010", .012"
CONNECTING ROD JOURNALS	
Diameter	2.124"- 2.125"
Maximum Allowable Out-of-Round and/or Taper	.001"

CAMSHAFT		
Drive		Roller Chain
Bearings		Steel Backed Babbitt
Number		5
Diametrical Clearance		.001"-.003"
Maximum Allowable before Reconditioning		.005"
Thrust Taken by		Thrust Plate
End Play		.002"-.006"
Maximum Allowable		.010"
CAMSHAFT JOURNALS		
Diameter	No. 1	1.998"-1.999"
	No. 2	1.982"-1.983"
	No. 3	1.967"-1.968"
	No. 4	1.951"-1.952"
	No. 5	1.5605"-1.5615"
CAMSHAFT BEARINGS		
Diameter	No. 1	2.000"-2.001"
	No. 2	1.984"-1.985"
	No. 3	1.969"-1.970"
	No. 4	1.953"-1.954"
	No. 5	1.5625"-1.5635"
VALVE TIMING		
Intake Opens (BTC)		22°
Intake Closes (ABC)		66°
Exhaust Opens (BBC)		74°
Exhaust Closes (ATC)		22°
Valve Overlap		44°
Intake Valve Duration		268°
Exhaust Valve Duration		276°
TIMING CHAIN		
Number of Links		68
Pitch		.375"
Width		.870"
TAPPETS		
Type		Hydraulic
Body Diameter		.9035"-.9040"
Clearance in Block		.0010"-.0023"
Service Tappets Available		Std. .001", .008", .030"
CYLINDER HEAD		
Valve Seat Run Out (maximum)		.002"
Intake Valve Seat Angle		45°
Seat Width (finish)		.060"-.085"
Exhaust Valve Seat Angle		45°
Seat Width (finish)		.040"-.060"
Cylinder Head Gasket (thickness compressed)		.030"

VALVE GUIDES	
Type	Cast in Head
Guide Bore Diameter	.374"-.375" Std.
VALVES INTAKE	
Head Diameter	2.02"
Length (to center of valve face)	4.90"
Stem Diameter (standard)	.3715"-.3725"
Stem to Guide Clearance	.0015"-.0035"
Maximum Allowable	.017"*
Face Angle	45°
Valve for Service (oversize stem diameter)	Std. .005", .015", .030"
Lift (Zero Lash)	.429"
***Clearance Between Valve Stem & Rocker Arm Pad (Engine Hot)	See Below
VALVES EXHAUST	
Head Diameter	1.60"
Length (to center of valve face)	4.90"
Stem Diameter (standard)	.3705"-.3715"
Stem to Guide Clearance	.0025"-.0045"
Maximum Allowable	.017"*
Face Angle	43°
Valve for Service (oversize stem diameter)	Std. .005", .015", .030"
Lift (Zero Lash)	.444"
***Clearance between Valve Stem & Rocker Arm Pad (Engine Hot)	See Below
VALVE SPRINGS	
Number	16
Free Length	1.94"
Load when Compressed to (valve closed with surge damper removed)	80-90 lbs. @ 1-11/16"
Load when Compressed to (valve open with surge damper removed)	235-249 lbs. @ 1-7/32"
Valve Springs I.D.	1.070"-1.090"
Maximum Allowable Out-of-Plumb	.080"
Valve Spring Installed Height (spring seat to retainer)	1-5/8"-1-11/16"
Using 1/16" Spacer to Reduce Spring Height when Over Specifications	
ENGINE LUBRICATION	
Pump Type	Rotary Full Pressure
Capacity (qts.)	3-1/4 Imperial or 4 U. S.
Pump Drive	Camshaft
Minimum Pump Pressure @ 500 rpm.	20 psi
Operating Pressure @ 1000 rpm	45-65 lbs.
Pressure Drop Resulting from Clogged Filter	7-9 lbs.
Oil Filter Type	Full-Flow

* With Tools C-3973 and C-3339 using wobble method.
** When Filter element is replaced, add 1 U. S. quart or 3/4 Imperial quart.
*** With engine running, back off adjusting screw until a noticeable "tap" is heard. Tighten adjusting screw until "tap" just disappears or until Zero Lash is obtained. Tighten screw an additional 1/4 turn. This will locate the tappet plunger in a proper working position within the tappet body.

OIL PUMP-INSPECTION LIMITS FOR REPLACEMENT

	340 Cu. In. Engines
Oil Pump Cover	.0015 inch or more
Outer Rotor Length	.825 inch or less
Outer Rotor Diameter	2.469 inch or less
Inner Rotor Length	.825 inch or less
Clearance Over Rotors-Outer	.004 inch or more
-Inner	.004 inch or more
Outer Rotor Clearance	.014 inch or more
Tip Clearance Between Rotors	.010 inch or more

GROUP II - EXHAUST

The exhaust system consists of special low-restriction two-pass mufflers P/N 3466913 located forward of the rear axle. Specially designed trumpet type exhaust pipes will mount under the body side sills and exit forward of the rear wheels.

The exhaust outlet pipes, brackets, hangers and installation instructions will be shipped in the luggage compartment for installation by the dealer.

NOTE: DO NOT USE FRAME CONTACT HOIST TO RAISE A TRANS-AM OR AAR VEHICLE.

GROUP 14 - FUEL

The 340 CID engine is equipped with three (3) two-barrel Holley 2300 Series carburetors. The throttle linkage adjustments and specifications are the same as outlined in the Service Manual for the 440 six-pack.

The carburetor specifications are as follows:

HOLLEY 2300 SERIES (3 x 2) (340 CID) CARBURETOR SPECIFICATIONS

	CENTER		OUTBOARD	
	Manual	Automatic	Front	Rear
Chrysler Number	3577182	3577183	3577185	3577185
Holley Number	R-4791A	R-4792A	R-4789A	R-4790A
Engine Displacement	340	340	340	340
Throttle Bore	1-1/2"	1-1/2"	1-3/4"	1-3/4"
Main Venturi	1-3/16"	1-3/16"	1-9/16"	1-9/16"
Main Metering Jet				
Standard	62	61	--	--
1 Size Lean	61	60	--	--
2 Size Lean (5,000-10,000 ft.)	60	59	--	--
Adjustments				
Curb Idle Speed	1000-rpm	900-rpm	--	--
Fast Idle Speed (2nd Highest fast idle cam stop)	2200-rpm	1800-rpm	--	--
Bowl Vent Valve at Idle	.005/.025	.005/.025	--	--
Unloader Adjustment (Wide Open Throttle)	5/32"	5/32"	--	--
Vacumm Kick Adjustment	#28 (.140")	#50 (.070")	--	--
Fast Idle Cam Position	#53 (.059")	#53 (.059")	--	--
Float Setting Dry	With fuel bowl inverted adjust float to centre of bowl.			
Fuel Level Wet at 6 psi Fuel Pressure	9/16"	9/16"	3/4"	3/4"
	Adjust to bottom of sight plug hole ± 1/32"			
Acceleration Pump				
Cam Position (hole)	#1	#1	--	--
Override Adjustment	With throttle held in the wide open position and pump lever completely depressed adjust to .015 min. between pump lever and override screw. There should be no loose movement of the pump operating lever at idle position.		--	--
Power Valve	-65	-65	--	--
Choke				
Type	Well	Well	--	--
Control	Coil Spring	Coil Spring	--	--
Setting	2-Notches Rich	2-Notches Rich	--	--

GROUP 17 - SPRING AND SHOCK ABSORBERS

Service procedures for rear springs and shock absorbers remain the same as those published in the Service Manual. Rallye suspension with front and rear sway bar and heavy duty shocks are standard equipment. The rear spring camber has been increased to provide ground clearance for the special side outlet exhaust and G-60-15 rear tires.

GROUP 22 - WHEELS - BEARINGS - TIRES

Service procedures for wheels, bearings and tires are the same as published in the Service Manual. E-60-15 raised white letter tires are standard equipment on the front wheels. G-60-15 raised white letter tires are standard on the rear. All road wheels are 15 x 7" and collapsible spare tire is standard equipment.

PARTS AVAILABILITY

Parts listed in this bulletin will be available from the Parts Division on or about June 30, 1970.

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