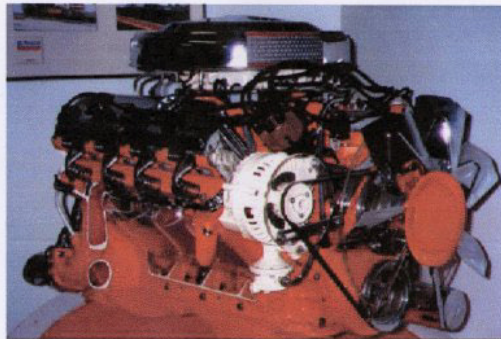
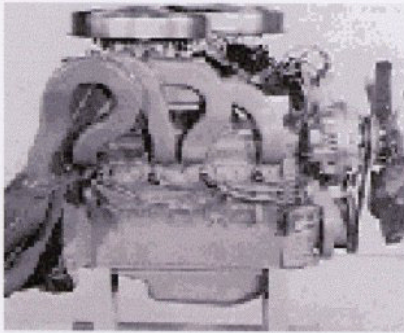


# Mopar Hemi Engines

## General Information



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300



Barracuda



Belvedere



Challenger



Charger



Coronet



Dart



Daytona



Demon



DeSota



Duster



Fury



GTX



Imperial



Post '59



Pre '60



Newport



New Yorker



Polara



Road Runner



Satellite



Super Bee



Super Bird



Trucks

# Early Hemi Engine Numbers

## Early Hemi Engine Numbers (Cars)

Eng #	Year	Name/Make	H/P	CI	Carb Comp	HP	
CE55-1001	1955	Imperial	H	331	8.5:1	250	
CE56-1001	1956	Imperial	H	354	9:1	280	
CE57	1957	Imperial	H	392	9.25:1	325	
C51-8-1001	1951	Chrysler	H	331	7.5:1	180	
C52-8-1001	1952	Chrysler	H	331	7.5:1	180	
C53-8-1001	1953	Chrysler	H	331	7.5:1	180	
C541-8-1001	1954	Chrysler	H	331	7.5:1	195	
C542-8-1001	1954	Chrysler	H	331	7.5:1	235	
D44-1001	1953	Red Ram/Dodge	H	241	7:1	140	
D50-1,2,3	1954	Dodge	H	241	7.1:1/7.5:1	140/150	
D50A-1001	1954	Red Ram		241		140	
D501	1956/7	Chrysler		354			
D55	1955	Dodge	P	270	7.6:1	240	
D500-1001	1956	Dodge/D500	H	315	9.25:1	260/295	
D553-1001	1955	Super Red Ram /Dodge	H	270	7.6:1	183/193 w/ PP	
D63-1	1956	Dodge	P	270	8:1	266	
D63-2,3	1956	Dodge	P	315	8:1	309/316	
KD500-1001	1957	Dodge/D500	H	325	9.25:1	285/310 w/ PP	
KDS	1957	Dodge	P	325	8.5:1	320/335	
L325/LD2	1958	Dodge	P	325	9:1	252/265	
LE57-1001	1957	Chrysler	P	354	9.25:1	295	
M44S-3	N/A	MARINE	H	270	N/A	N/A	
M45S-3	N/A	MARINE	H	354	N/A	N/A	
M45SP	N/A	MARINE	H	331	N/A	N/A	
M45SP-3	N/A	MARINE	H	354	N/A	N/A	
NE55-1001	1955	Chrysler	H	331	8.5:1	250	
NE56-1001	1956	Chrysler	H	354	9:1	280	
NE57-1001	1957	Chrysler	H	392	9.25:1	325/375	
P27	1955	Plymouth	P	241	7.6:1	157	
P27	1955	Plymouth	P	259	7.6:1	167/177	
P29	1956	Plymouth	P	270	8:1	180	
S16-1001	1953	DeSoto/Firedome	H	276	2	7.1:1	160
S17-1001	1952	DeSoto/Firedome	H	276	2	7.1	160
S19-1001	1954	DeSoto/Firedome	H	276	2	7.5:1	170
S21-1001	1955	DeSoto/Fireflite	H	291	4	7.5:1	200
S22-1001	1955	DeSoto/Fireflte	H	291	2	7.5:1	185
S23-1001	1956	DeSoto/Firedome	H	330	2	8.5:1	230
S24-1001	1956	DeSoto/Fireflite	H	330	4	8.5:1	255
S24A	1956	DeSoto	H	341		9.5:1	320
S25-1001	1957	DeSoto/Firedome	H	341	2	9.25:1	270
S26-1001	1957	DeSoto/Fireflite	H	341	4	9.25:1	295
S26A	1957	DeSoto	H	345		9.5:1	345
WE55-1001	1955	Chrysler	P	301		8:1	188
WE56	1956	Chrysler	P	331		8.5:1/9:1	225/250
WE56-1001	1956			331			188
WE57	1957	Chrysler	P	354		9.25:1	285/295
WE57-1001	1957			354			280

3NE55-1001	1955	Chrysler 300	H	331	8.5:1	300
3NE56-1001	1956	Chrysler 300	H	354	9:1/10:1	340/355
3NE57	1957	Chrysler 300	H	392	9.25:1	375
58C-1001	1958	Imperial	H	392	10:1	345
58N-1001	1958	Chrysler	H	392	10:1	345
58N3-1001	1958	Chrysler 300	H	392	10:1	380 w/ 2 4-bbl 390 w/ fuel inj
58S-1001	1958	Chrysler	P	354	10:1	310
58W-1001	1958	Chrysler	P	354	10:1	290

### Early Hemi Engine Numbers (Trucks)

Eng #	Year	Name/Make	H/P	CI
B8, C8, D8, F8, G8	1955/1956	Dodge Truck	H	259
C5, C6, P3, P4, S4, S5, S6	1958	Dodge Truck	H	315
C7, S7, T7, T8, T9	1959	Dodge Truck	H	354
FS8, GH8, HS8,	1955/1956	Dodge Truck	H	259
I/IND 20, 20a, 24, 24a	1956	Chrysler Industrial		331
I/IND 56a	N/A	Chrysler Industrial		354
I/IND 18, 18a	N/A	Dodge Industrial	H	241
I/IND 52	N/A	Dodge Industrial	H	259
I/IND 53, 54	N/A	Dodge Industrial	H	315
I/IND 56A1	N/A	Dodge Industrial	H	325
J8, JS8, KA8, KS8	1955/1956	Dodge Truck	H	270
K8-D4, K8-D5, K8-D6	1957	Dodge Truck	H	315
K8-D7, K8-D8, C5, C6, C7	1957	Dodge Truck	H	331
K8-D9, T9	1957	Dodge Truck	H	354
K8-D7, K8-D8, C7, T7, T8	1957	Dodge Truck	H	354
L8-D1, L8-D2, L8-D3	1958	Dodge Truck	P	315
L8-D4, L8-D5, L8-D6, WS	1958	Dodge Truck	H	315
L8-D7, L8-D8, L8-D9, C7	1958	Dodge Truck	H	354
M8-D6, C6, S6	1959	Dodge Truck	H	315
M8-D7, M8-D8, M8-D9	1959	Dodge Truck	H	354
P3, P4, S7, W5, T7, T8	1957	Dodge Truck	H	331
RS, RS8, T8, V8	1955/1956	Dodge Truck	H	331
S4, S5, S6	1957	Dodge Truck	H	315
T7, T8, T9	1958	Dodge Truck	H	354
VT-334, VT-336, VT-338	1954	Dodge Truck	P	241
VT-434, VT-436, VT-438	1955/1956	Dodge Truck	P	259
VT-448	1956	Dodge Truck	H	354
VT-534, VT-536, VT-538	1957	Dodge Truck	P	315
VT-342, VT-344, VT-346	1954	Dodge Truck	H	270

### Early Hemi Head Casting Numbers

#### Chrysler

1323 333	1951-1953	331
1486 833	1953-1954	331
1556 157	1955	331
1619 823	1956	354
1735 282	1957-1958 (300D)	392
1731 528	1958	392

*Dodge/Plymouth*

1328	362	1953-1954	241
1554	132	1955	270
1734	049	1956	315
1828	129	1957	325

*Truck/Industrial*

1364	864	1954-1956	331
1733	463	1957-1958	354
1730	438	1957-1959	354
1554	132	1955	241
1554	132	1955-1956	260
1554	132	1955-1956	270
1828	129	1958	315

## Hemi Mopar Head Casting Numbers

Casting #	Chamber Vol.	Intake Valve	Exhaust Valve	Comments
3512 <b>015X</b>		2.25	1.94	426 D4
2468 <b>016</b>		2.25	1.94	1964 426 Cast K Head
2531 <b>110</b>		2.23	1.94	1965 426 Aluminum "Alcoa"
2945 <b>270</b>		2.25	1.94	426 Cast Iron D3
3614 <b>433</b>		2.25	1.94	426 Aluminum
2780 <b>559</b>		2.25	1.94	1966-71 426 Cast Iron
2531 <b>695</b>		2.23	1.94	1965 426 Aluminum "Alcoa" Rev. B
2531 <b>718</b>		2.25	1.94	426 A-148

## Big Block Mopar Head Casting Numbers

Casting #	Chamber Vol.	Intake Valve	Exhaust Valve	Comments
2406 <b>158</b>	73.5cc	2.08	1.60	1967 440
2463 <b>200</b>	73.5cc	2.08	1.74	1963 361/383/413/426
2406 <b>209</b>	81cc	2.08	1.88	1963 Max zWedge
3751 <b>213</b>		2.08	1.74	1973 400/440 motorhome
2402 <b>286</b>	81cc	2.08	1.88	1962 413 Max Wedge
2206 <b>324</b>		2.08	1.74	1961-67 361/383/413
2268 <b>341</b>				1965 426
3462 <b>346</b>	79.5cc	2.08	1.74	1971-up 383/440

3462 <b>346</b>	81.5cc	2.08	1.74	1972-73 400/440
4006 <b>452</b>	81.5cc	2.08	1.74	1976-78 400/440
3614 <b>476</b>	86+cc	2.08	1.74	Stage 4
1851 <b>509</b>	73.5cc	2.08	1.60	1959 361/383/413 HP
2406 <b>516</b>	73.5cc	2.08	1.60	1964-67 361/383/413/425 300L
2406 <b>518</b>	86cc	2.08	1.88	1964 Max Wedge
2408 <b>520</b>	73.5cc	2.08	1.60	1964 late 300K with ram intake
2128 <b>521</b>	73.5cc	2.08	1.60	1960 361/383/413 300F
2128 <b>522</b>	73.5cc	1.94	1.60	1960-61 361/383
1851 <b>524</b>				1958-71 350-413 Truck
2264 <b>547</b>				1960-71 413, 361 Truck
2402 <b>557</b>	73.5cc	2.08	1.74	1963 300J & early 300K
2202 <b>594</b>				1958-71 Truck
1737 <b>622</b>	73.5cc	1.94	1.60	1958-60 350/361/383
1737 <b>635</b>	73.5cc	1.94	1.60	1958 350/361
2466 <b>676</b>				1971-77 413, 361 Truck and Maring
1844 <b>705</b>	73.5cc	1.94	1.60	1958-59 350/361/383
1944 <b>705</b>				1958 350, 1961 361
1406 <b>740</b>		1.94	1.60	1958-59 HD 361 Truck
2406 <b>740</b>				1963-68 361, 413 Truck & Marine
2406 <b>780</b>				1965-67 383 Truck
2806 <b>887</b>				426 Marine & Industrial
2843 <b>906</b>	79.5cc	2.08	1.74	1968-71 383/440
2899 <b>913</b>				1960-71 413 Truck
2708 <b>915</b>	73.5cc	2.08	1.74	1967 440 HP
2206 <b>924</b>	73.5cc	2.08	1.74	1961-62 361/383/413, 1961 300G, 1962 413 300-H
2899 <b>943</b>				1971-77 413, 361 Truck
3769 <b>975</b>	83.1cc	2.08	1.74	1974-75 400/440

## Small Block Mopar Head Casting Numbers

Casting #	Chamber Vol.	Intake Valve	Exhaust Valve	Comments
2532 <b>080</b>		1.78	1.50	1964-65 273
2536 <b>178</b>		1.78	1.50	1966 273 Early
2658 <b>234</b>		1.78	1.50	1966 273 Late
2268 <b>341</b>		1.84	1.56	1962 318 Early; 1962-67 318 Late/CC 318
3671 <b>587</b>		1.88	1.60	1973 360 w/air pump; 1973 340; 1974 360



3462 <b>598</b>				340 Trans Am
2843 <b>675</b>		1.78	1.50	1968-69 273; 1968-74 318
2531 <b>894</b>		2.02	1.60	1968-70 340
3418 <b>915</b>		1.88	1.60	1971-72 340; 1970-72 360
3418 <b>915</b>		2.02	1.60	1970 340
2658 <b>920</b>		1.88	1.50	1966 273 4-bbl
2658 <b>920</b>		1.78	1.50	1966-67 273; 1966 273 4-bbl; 1967 273-318

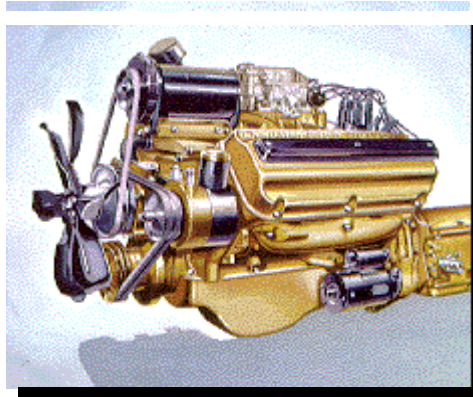
## Six Cylinder Mopar Head Casting Numbers

Casting #	Chamber Vol.	Intake Valve	Exhaust Valve	Comments
2206 <b>035</b>		1.62	1.36	1962-66 170, 225
2843 <b>169</b>		1.62	1.36	1966-69 170, 225; 1970, 71, 74 198, 225
3614 <b>850</b>		1.62	1.36	1972-73 198, 225 w/air pump
3698 <b>995</b>		1.62	1.36	1972 198, 225



# 426 Hemi®

## Early Hemi Serial Numbers



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The tables below detail the starting engine serial numbers used on the 1950s Mopar Hemi engines (often referred to as the "old style" hemi). These are easily differentiated from the new (426) Hemi motors in that the old motors had the distributors located to the rear of the carburetor, similar to the old small blocks.

The information presented below is probably not to be considered 100% complete, but it may help in identifying that mystery motor in grandpa's garage!



<b>Chrysler</b>			
<b>Serial Number</b>	<b>Year</b>	<b>CID</b>	<b>Horsepower Rating</b>
C51-8-1001	1951	331	180 hp
C52-8-1001	1952	331	180 hp
C53-8-1001	1953	331	180 hp
C541-8-1001	1954	331	235 hp
C542-8-1001	1954	331	235 hp
NE55-1001	1955	331	250 hp
CE55-1001	1955	331	250 hp
3NE56-1001	1956	331	300 hp (300 Letter Car)
WE56-1001	1956	331	250 hp
NE56-001	1956	354	280 hp
3NE56-1001	1956	354	340 hp (300 Letter Car)
WE57-1001	1957	354	280 hp
LE57-1001	1957	354	295 hp
NE57-1001	1957	392	325 hp
NE57-1001	1957	392	375 hp (300 Letter Car)
58W-1001	1958	392	290 hp
58S-1001	1958	392	310 hp
58-1001	1958	392	345 hp

58C-1001	1958	392	345hp
58N3-1001	1958	392	380 hp (w/2-4 bbl)
58N3-1001	1958	392	390 hp (w/Fuel Injection)

## Dodge


<b>Serial Number</b>	<b>Year</b>	<b>CID</b>	<b>Horsepower Rating</b>
D44-1001	1953	241	140 hp (Red Ram)
D50A-1001	1954	241	140 hp (Red Ram)
D553-1001	1955	270	183 hp
D553-1001	1955	270	193 hp (w/Power Pak)
D500-1001	1956	315	260 hp (D500)
KD500-1001	1957	325	285 hp
KD500-1001	1957	325	310 hp (w/Power Pak)

## DeSoto

<b>Serial Number</b>	<b>Year</b>	<b>CID</b>	<b>Horsepower Rating</b>
S17-1001	1952	276	160 hp FireDome
S16-1001	1953	276	160 hp FireDome
S19-1001	1954	276	170 hp FireDome
S21-1001	1955	291	185 hp FireDome
S22-1001	1955	291	200 hp FireFlite w/4b
S23-1001	1956	330	230 hp FireDome

S24-1001	1956	330	255 hp FireFlite w/4bbl
S24A-1001	1956	341	320 hp Adventurer
S25-100	1957	341	270 hp FireDome
S26-1001	1957	341	292 hp FireFlite w/4bbl
S26A-1001	1957	345	345 hp Adventurer

## Street and Strip 426 Hemi Specifications


	<table style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2" style="background-color: #cccccc; text-align: center; padding: 5px;"><b>STREET 426 HEMI</b></th> </tr> <tr> <td style="padding: 5px;"><b>Type</b></td> <td style="padding: 5px;">90 degree V</td> </tr> <tr> <td style="padding: 5px;"><b>Cylinders</b></td> <td style="padding: 5px;">8</td> </tr> <tr> <td style="padding: 5px;"><b>Bore</b></td> <td style="padding: 5px;">4.250 in</td> </tr> <tr> <td style="padding: 5px;"><b>Stroke</b></td> <td style="padding: 5px;">3.750 in</td> </tr> <tr> <td style="padding: 5px;"><b>Comp Ratio</b></td> <td style="padding: 5px;">10.25:1</td> </tr> <tr> <td style="padding: 5px;"><b>Displacement</b></td> <td style="padding: 5px;">426 ci</td> </tr> <tr> <td style="padding: 5px;"><b>Horsepower</b></td> <td style="padding: 5px;">425 hp @ 5000 rpm</td> </tr> <tr> <td style="padding: 5px;"><b>Torque</b></td> <td style="padding: 5px;">490 lb-ft @ 4000 rpm</td> </tr> <tr> <td colspan="2" style="padding: 10px 0 0 0;"> <hr style="border: 0.5px solid black;"/> </td> </tr> <tr> <td style="padding: 5px;"><b>* Horsepower</b></td> <td style="padding: 5px;">474 hp @ 6000 rpm</td> </tr> <tr> <td style="padding: 5px;"><b>* Torque</b></td> <td style="padding: 5px;">474 lb-ft @ 4400 rpm</td> </tr> </table>	<b>STREET 426 HEMI</b>		<b>Type</b>	90 degree V	<b>Cylinders</b>	8	<b>Bore</b>	4.250 in	<b>Stroke</b>	3.750 in	<b>Comp Ratio</b>	10.25:1	<b>Displacement</b>	426 ci	<b>Horsepower</b>	425 hp @ 5000 rpm	<b>Torque</b>	490 lb-ft @ 4000 rpm	<hr style="border: 0.5px solid black;"/>		<b>* Horsepower</b>	474 hp @ 6000 rpm	<b>* Torque</b>	474 lb-ft @ 4400 rpm
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\* Numbers from the original factory dyno sheets (*Mopar Action*, June 1998).

	<b>1964-65 Track</b>	<b>1966 Track</b>	<b>1964 Drag</b>	<b>1965 Drag</b>	<b>1966 Street</b>
<b>Disp (ci)</b>	426	426-404	426	426	426
<b>Comp</b>	12.5:1	12.5-12.0:1	12.5:1	12.5:1	10.25:1
	Alum conv	Alum	Alum	Magn	Alum 2.1vl

	1-4 bbl	plenum 1-4 bbl	plenum 2-4 bbl	plenum 2-4 bbl	tand 4 bbl
<b>Headers</b>	Steel casting and tubes	Plate and tubes	Steel casting and tubes	Plate and tubes	Cast-iron manifolds
<b>Carbs</b>	Single Holley	Single Holley	Dual Carter	Dual Holley	Dual Carter
<b>Heads</b>	Cast iron	Cast iron	Cast iron	Aluminum	Cast iron

## FirePower 392 Hemi Specifications

		<b>392 FIREPOWER HEMI</b>
<b>CYLINDERS</b>		
<b>Left (front to back)</b>	1-3-5-7	
<b>Right (front to back)</b>	2-4-6-8	
<b>CRANKSHAFT</b>		
<b>Type</b>	Fully Counterbalanced	
<b>Bearings</b>	Steel Backed Babbit	


<b>Bearings</b>	Steel Backed Babbit
<b>Journal Diameter</b>	2.687 - 2.688 in
<b>Crank Pin Diameter</b>	2.374 - 2.375 in
<b>Num of Main Bearings</b>	5
<b>Diamater Clearance</b>	0.0005 - 0.0015 in
<b>Finish at Rear Seal</b>	Diagonal Knurled
<b>CONNECTING ROD AND BEARINGS</b>	
<b>Type</b>	Drop Forged I-Beam
<b>Length</b>	6.951 in
<b>Bearing Type</b>	Steel Backed Babbitt
<b>Diameter and Length</b>	2.375 x 29/32 in
<b>Diametral Clearance</b>	0.0005 - 0.0015 in
<b>Side Clearance</b>	0.006 - 0.014 in
<b>CAMSHAFT</b>	
<b>Drive</b>	Chain
<b>Bearings</b>	Steel Backed Babbitt
<b>Diametral Clearance</b>	0.001 - 0.003 in
<b>Chain Links</b>	68
<b>Chain Pitch</b>	0.375 in
<b>Chain Width</b>	1.125 in
<b>PISTONS</b>	
<b>Type</b>	Horizontal Slot with Steel Strut
<b>Material</b>	Aluminum Alloy Tin Coated
<b>Weight</b>	700 grams
<b>Piston Length (overall)</b>	4.00 in
<b>INTAKE VALVES</b>	
<b>Material</b>	Silicon-Chromium Steel
<b>Head Diameter</b>	2.00 in

<b>Length</b>	5.03125 in
<b>Stem Diameter</b>	0.372 to 0.373 in
<b>Angle of Seat</b>	45 degrees
<b>Lift</b>	0.388
<b>EXHAUST VALVES</b>	
<b>Material</b>	Nitrogen Treated Manganese Chromium-Nickel Steel
<b>Head Diameter</b>	1.750 in
<b>Length</b>	5.03125 in
<b>Stem Diameter</b>	0.371 to 0.372
<b>Angle of Seat</b>	45 degrees
<b>Lift</b>	0.388
<b>VALVE SPRINGS</b>	
<b>Number</b>	16
<b>Free Length</b>	2.00 in
<b>Compressed Load (closed)</b>	1.6875 - 78 to 88 lbs
<b>Compressed Load (open)</b>	1.3125 - 170 to 184 lbs





## Hemi FirePower Specs

	<b>1951-53</b>	<b>1954-55</b>	<b>1956</b>	<b>1578-58</b>	
	<b>Disp (ci)</b>	331	331	354	392
	<b>Bore (in)</b>	3.81	3.81		4.00
	<b>Stroke (in)</b>	3.63	3.63		3.90
	<b>C-R</b>	7.5:1	7.5:1		10.0:1
	<b>Horses</b>	180	180		390
		@ 4k	@ 4k		@ 5.2k
	<b>Torque</b>	312	312		435
	@ 2k	@ 2k		@ 3.6k	



## Mopar Crate Hemi Engines

HEMI CRATE MOTORS			
	<u><a href="#">P4876690</a></u>	<u><a href="#">P5249666</a></u>	<u><a href="#">P5249667</a></u>
<b>Disp (ci)</b>	528	472	426
<b>Bore (in)</b>	4.50	4.25	4.25
<b>Stroke (in)</b>	4.15	4.15	3.75
<b>C-R</b>	10.25:1	9.0:1	9.0:1

<b>Horses</b>	610 hp	525 hp	465 hp
<b>Torque</b>	650 ft-lb	540 ft-lb	486 ft-lb

<b>WEDGE CRATE MOTORS</b>		
	<a href="#"><u>P4876691</u></a>	<a href="#"><u>P4876692</u></a>
<b>Disp (ci)</b>	500	500
<b>Bore (in)</b>	4.38	4.38
<b>Stroke (in)</b>	4.15	4.15
<b>C-R</b>	9.0:1	10.25:1
<b>Horses</b>	505 hp	575 hp
<b>Torque</b>	590 ft-lb	625 ft-lb

### **P4876690**

Just in case 465 horsepower isn't enough, Mopar Performance Parts has developed this all-new 528 Hemi Crate Motor which pumps out 610 horsepower and 650 ft.-lbs. of torque! Features include a heavy-duty cast iron block with cross-bolted mains, aluminum heads, a 292° .524"/.543" lift hydraulic cam, forged pistons (10.25:1 compression ratio), a 4 bbl dual plane M1® intake manifold, 4.15" forged crank, 4.50" bore and double roller timing chain and sprockets. Stainless steel valves are 2.25" for the intake and 1.94" for the exhaust and include heavy-duty single spings and umbrella valve seals. Mopar logo, cast aluminum valve covers and a chrome front cover are included, as is Mopar's precise electronic distributor. Uses a basic 6-quart rear sump oil pan (1970-71 E-Body style). Mopar Performance Parts recommends that, for maximum performance, a 850/900 cfm Holley carburetor and 2" headers be used (not included).

### **P5249666**

When 465 BHP isn't enough and 610 BHP is a little too much, Mopar Performance Parts offers the 472 Hemi Crate Motor. This motor utilizes a 4.15" stroke forged crankshaft to pump the horsepower up to 525 BHP and the torque up to an amazing 540 ft.-lbs. Includes all of the features from P5249667 with the following upgrades: Cast iron heads (9:1 compression ratio) with upgraded heavy-duty springs. 4.15" stoke forged crankshafts. 292°, .524"/.507" lift hydraulic camshaft. Mopar Performance Parts recommends the use of a Holley 850 cfm carburetor with vacuum secondary and a 2" exhaust header (not included).

### **P5249667**

Here's the power to move you! This all-new Hemi Crate Motor puts 465 horsepower and 486 ft.-lbs. of torque under your right foot. Features include a cast iron block with cross bolted mains, cast iron heads, a 278° .495"/.480" lift hydraulic cam, forged pistons (9:1 compression ratio), a 4 bbl dual plane M1® intake manifold, 3.75" stroke forged crankshaft, 4.25" bore and double roller timing chain and sprockets. Stainless steel valves are 2.25" intake and 1.94" exhaust and include heavy duty single valve springs and umbrella valve seals. Chrome valve covers and a chrome front cover dress up this impressive new Hemi Crate Motor. And you even get Mopar Performance Parts' precise electronic distributor for maximum performance. This new engine uses a basic 6-quart rear sump oil pan (1970-71 E-Body style). Mopar Performance Parts recommends that a 750 cfm Holley carburetor and 2" headers be used (not included).

### **P4876691**

500 cubic inches, 505 horsepower and 590 ft.-lbs. of torque. HD cast iron, thick wall, thick deck, cross-bolted block. Hi-flow cast iron Stage V heads. 292° duration .509" hydraulic cam. 4.15" stroke, forged crankshaft. 4.380" bore, 9.0:1, flat-top cast aluminum pistons. Double-roller chain and sprockets. Large 2.14" intake and 1.81" exhaust stainless steel valves. HD hi-lift single valve springs with dampers and umbrella valve seals. Cast aluminum valve covers chrome front cover. single plane MI aluminum 4 bbl intake manifold. Does not include water

pump or housing, damper, carb, distributor, spark plugs or wires. Completely assembled from intake to oil pan.

### **P4876692**

500 cubic inches and 575 horsepower and 625 ft.-lbs. of torque. HD cast iron, thick wall, thick deck, cross-bolted block. Hi-flow cast aluminum Stage VI heads. 292° duration .543" lift hydraulic cam. 4.15" stroke, forged crankshaft. 4.380" bore, 10.25:1, flat-top, cast aluminum pistons. Double-roller chain and sprockets. Large 2.14" intake and 1.81" exhaust stainless steel valves. HD hi-lift single valve springs with dampers and umbrella valve seals. Cast aluminum valve covers. Chrome front cover. Single plane MI aluminum 4 bbl intake manifold. Does not include water pump or housing, damper carb, distributor, spark plugs or wires. Completely assembled from intake to oil pan.

The above data and quotes pulled from the [Mopar Performance Parts](#) website. Information current as of 2000-10-13. Contact **Mopar** for availability.

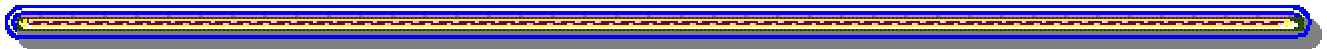
## **What Is The "Poly" Engine**

When you see a Poly Head engine for the first time you will probably ask yourself " WOW what in the world is that?"

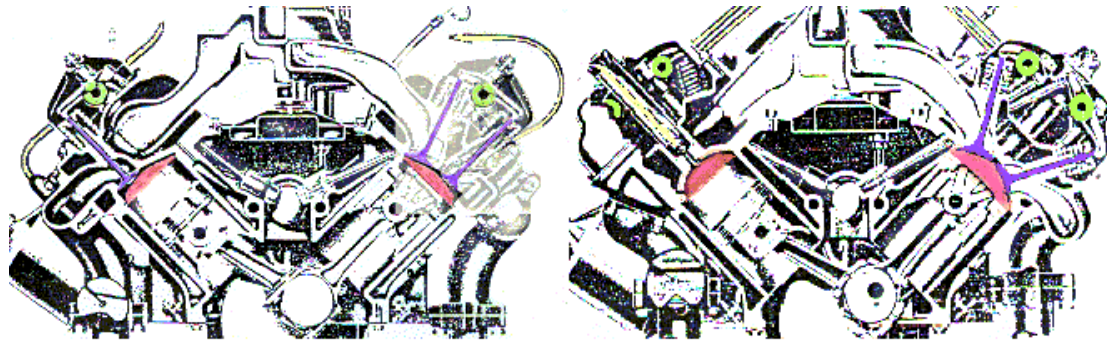
The Poly Head engine is a logical extension of the famous Hemi\* head engine of the Chrysler Corporation. Logical in the sense of cost and weight. Cost was reduced by using only one rocker shaft per head, and spark plugs were mounted outside of the valve cover, reducing the need for spark plug tubes. Another cost saving feature was that the combustion chamber was cast and not machined like the early Hemi engine. Weight was reduced by eliminating the huge casting needed to support the second rocker arm shaft.

Below is a image of a Poly cylinder head. Notice the waviness of edge of valve cover. This is the external characteristic of the Poly head. No other engine valve cover has this outline.

354 Cubic inch Poly head engine



Below are images of a cross section of the poly head, and hemi head. Notice the shape of the combustion chamber on both. Also take notice of the spark plug wire location, the rocker arm shafts, the location of the valves, and the angle between the valves.



**Poly Head**

**Hemi Head**

**Valves are in Blue    Combustion Chamber in Red  
Rocker Arm Shafts in Green    Plug wires in Yellow Green**

<b>Engine</b>	
<b>Type</b>	V 90°
<b>Number of Cylinders</b>	8
<b>Bore</b>	3.94
<b>Stroke</b>	3.63
<b>Piston Displacement</b>	354 cu. in.
<b>Compression Ratio</b>	10.0 to 1
<b>Compression Pressure at 150 rpm ( plugs removed) wide open throttle</b>	150 to 200 lb.
<b>Maxium Variation between Cylinders ( any one engine )</b>	20 lb.
<b>Firing order</b>	1-8-4-3-6-5-7-2

**Cylinder Numbering**

<b>From front of engine</b>	Left Bank 1-3-5-7 Right Bank 2-4-6-8
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**Crankshaft**

<b>Type</b>	Fully Counterbalanced
<b>Bearings</b>	Steel Backed Babbit
<b>Journal Diameter</b>	2.4995 to 2.5005
<b>Crank Pin Diameter</b>	2.249 to 2.250
<b>Maximum Out Of Round Permissible</b>	.001
<b>Number Of Main Bearings</b>	5
<b>Diameter Clearance ( desired )</b>	.0005 to .0015

<b>End Play</b>	.002 to .007
<b>Thrust Taken By</b>	#3 Main Bearing
<b>Finish at Rear Seal Surface</b>	Diagonal Knurled
<b>Interchangeability of Bearings</b>	Upper and Lower #'s 1,2,4 Upper and Lower # 3 Upper and Lower not Interchangeable # 5
<b>Main Bearing (service) All Available in Standard and the following Undersized</b>	.001 .002 .003 .010 .012

### Connecting Rods and Bearings

<b>Type</b>	Drop Forged I Beam
<b>Length (center to center)</b>	6.625
<b>Weight (less bearing)</b>	25.2oz.
<b>Bearings</b>	Steel Backed Babbitt
<b>Diameter and Length</b>	2.2507 to 2.2512 x 29/32
<b>Diametral Clearance Desired</b>	.0005 to .0015
<b>Maximum Allowable Before Reconditioning</b>	.0025
<b>Side Clearance</b>	.006 to .014
<b>Bearings for Service</b>	Standard, .001, .002, .003, .010, .012 U.S.

### Connecting Rod Bushing

<b>Type</b>	Steel Backed Bronze
<b>Number of Bearings</b>	8
<b>Diameter and Length</b>	.9843 to .9846 x 1 1/4
<b>Interchangeability</b>	All
<b>Clearance</b>	.0001 to .0004 Selective

### Camshaft

<b>Drive</b>	Chain
<b>Bearings</b>	Steel-Backed Babbitt
<b>Number</b>	5
<b>Thrust Taken By</b>	Thrust Plate
<b>End Play</b>	.002 to .006
<b>Maximum Allowable Before Reconditioning</b>	.010
<b>Diametral Clearance</b>	.001 to .003
<b>Maximum Allowable Before</b>	.005

<b>Reconditioning</b>	
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**Camshaft Bearing Journals Diameter and Length**

<b>No. 1</b>	1.998 to 1.999 x 15/16
<b>No. 2, 3, 4</b>	1.998 to 1.999 x 3/4
<b>No. 5</b>	1.4355 to 1.4365 x 29/32

**Camshaft Bearings Diameter and Length (after reaming)**

<b>No. 1</b>	2.000 to 2.001 x 15/16
<b>No. 2, 3, 4</b>	2.000 to 2.001 x 13/16
<b>No. 5</b>	1.4375 to 1.4385 x 7/8

**Camshaft Chain**

<b>Adjustment</b>	None
<b>Number of Links</b>	68
<b>Pitch</b>	.375
<b>Width</b>	1 1/8

**Tappets**

<b>Type</b>	Hydraulic
<b>Clearance in Block</b>	.0005 to .0015
<b>Body Diameter</b>	.9040 to .9045
<b>Clearance Between Valve Stem and Rocker Arm or Tappet</b>	Dry Lash .060 to .210

**Pistons**

<b>Type</b>	Horizontal Slot with Steel Strut
<b>Material</b>	Aluminum Alloy Tin Coated
<b>Land Clearance (diametral)</b>	.028 to .033
<b>Clearance at Skirt ( 1 1/2 from Bottom of Skirt)</b>	.0005 to .0015
<b>Weight (Standard through .060 oversize)</b>	646 gm.
<b>Piston Length (overall)</b>	3.99
<b>Ring Groove Depth</b>	No. 1 .200 No. 2 .200 No. 3 .194
<b>Pistons for Service</b>	Standard, .005, .020, .040, .060 o.s.

**Piston Pins**

<b>Type</b>	Full Floating
<b>Diameter and Length</b>	.9841 to .9843 x 3.140 to 3.150



<b>Clearance in Piston (thumb press at 70° F.)</b>	.0000 to .0005
<b>End Play</b>	.004 to .026
<b>Clearance in Rod (selective)</b>	.0001 to .0004
<b>Piston Pins for Service</b>	Standard, .003, .008 o.s.
<b>Direction Offset in Piston</b>	Toward Right Side of Engine

<b>Piston Rings</b>	
<b>Number of Rings per Piston</b>	3
<b>Number of Compression Rings per Piston</b>	2
<b>Number of Oil Rings per Piston</b>	1
<b>Width of Rings</b>	Compression .0775 to .0780 Oil .1860 to .1865
<b>Piston Ring Gaps</b>	.010 to .020
<b>Ring Side Clearance</b>	Compression Upper .002 to .0035 Intermediate .0020 to .0035 Oil .0010 to .0025

<b>Valves - Intake</b>	
<b>Material</b>	Silicon-Chromium Steel
<b>Head Diameter</b>	1 15/16
<b>Length (to top of valve face)</b>	4 23/32
<b>Stem Diameter</b>	.372 to .373
<b>Stem to Guide Clearance</b>	.001 to .003
<b>Maximum Allowable Before Reconditioning</b>	.004
<b>Angle of Seat</b>	45°
<b>Adjustment</b>	None
<b>Lift</b>	.388

<b>Valves - Exhaust</b>	
<b>Material</b>	Nitrogen Treated Manganese Chromium-Nickel Steel
<b>Head Diameter</b>	1 1/2
<b>Length (to top of valve face)</b>	4 3/4
<b>Stem Diameter</b>	.371 to .372
<b>Stem to Guide Clearance</b>	.002 to .004
<b>Maximum Allowable Before Reconditioning</b>	.006
<b>Angle of Seat</b>	45°

<b>Adjustment</b>	None
<b>Lift</b>	.388

<b>Valve Springs</b>	
<b>Number</b>	16
<b>Free Length</b>	2
<b>Load When Compressed to (valve closed)</b>	1 11/16 - 78 to 88 lbs.
<b>Load When Compressed to (valve open)</b>	1 5/16 - 170 to 184 lbs.
<b>Valve Spring ID</b>	1.010 to 1.030

<b>Cylinder Head</b>	
<b>Number Used</b>	2
<b>Combustion Chamber</b>	Polyspherical
<b>Valve Seat Run-out (maximum)</b>	.002
<b>Intake Valve Seat Angle</b>	45°
<b>Seat Width (finished)</b>	.060 to .085
<b>Exhaust Valve Seat Angle</b>	45°
<b>Seat Width (finished)</b>	.040 to .060
<b>Cylinder Head Gasket (thickness)</b>	.027

<b>Engine Lubrication</b>	
<b>Pump Type</b>	Rotary, Full Pressure
<b>Capacity (qt.) - When Filter Element is Replaced add 1 qt.</b>	4
<b>Pump Drive</b>	Camshaft
<b>Operating Pressure at 40 to 50 MPH</b>	40 to 65 lb.
<b>Pressure Drop Resulting from Clogged Filter</b>	15 to 20 lb.



# 1958 Red Ram and D500 Engine Specifications

## Specifications for 1958 Coronet , Royal and Custom Royal

### Red Ram (325) and Super Red Ram (350, 360\*) Engines

	Red Ram	Super Red Ram
Type	90 deg V8	90 deg V8
Valve Arrangement	In Head Single Rocker Shaft	In Head Single Rocker Shaft
Bore	3.69"	4.0625" (4.125"-D500)
Stroke	3.80"	3.375"
Piston Displacement (cu. Inch)	325.0 Cu	350.Cu (360-D500)
Taxable Horsepower (ama)	43.9	52.81
Compression Ratio	8.5 to 1	10 to 1
Compression Pressure (speed minimum 150 rpm, plugs removed, wide open throttle)	90 (min)	150 (min)
	155 (max)	180 (max)
Maximum Variation Between Cylinders	15 lbs	25 lbs
Firing order	1-8-4-3-6-5-7-2	1-8-4-3-6-5-7-2
Cylinder numbering (from drivers (LHD) seat front to rear)		
Left Bank	1-3-5-7	1-3-5-7
Right Bank	2-4-6-8	2-4-6-8
<b>Engine Lubrication</b>		
Pump Type	Rotary Full Pressure	Rotary Full Pressure
Crankcase Capacity (qts)	5	4
Pump Drive	Camshaft	Camshaft

Minimum Pump Pressure at 500 rpm	15 psi	15 psi
Operating Pressure at 40 to 50 mph 1500 RPM	50-65 lbs	45-70 lbs
Oil Filter:		
Type	Shunt	Full Flow
Replaceable Element	Yes	Assembly
<b>Cylinder Block</b>		
Cylinder Bore (std)	3.6875-3.6895"	4.0625-4.0845"
Cylinder Bore Out-of Round (max. allowable before reconditioning)	.005"	.005"
Cylinder Bore taper (max. allowable before reconditioning)	.020"	.010"
Max allowable over bore	.060"	.040"
<b>Camshaft</b>		
Drive	Chain	Chain
End Paly	.002-.006"	002-.006"
Max allowable	.010"	.010"
Radial Clearance	.001-.003"	.001-.003"
Max allowable	.010"	.005"
Camshaft chain		
Number of links	68	50
Pitch	.375"	.50"
Width	1 1/8"	.88"
<b>Camshaft Journals</b>		
Diameter and Length	No.1 1.998-1.99 x 7/8"	
	No.2 1.982-1.983 x 3/4"	
	No.3 1.967-1.968 x 3/4"	
	No.4 1.951-1.952 x 3/4"	

	No.5 1.4355-1.4365 x 15/16"	
<b>Crankshaft</b>		
Type	Fully Counter Balanced	
Bearings	Steel Backed Babbitt	
Thrust taken by	No.3 main bearing	
End Play	.002-.007"	
Max allowable	.010"	
Radial Clearance	.0005-.0015"	
Max allowable	.0025"	
Finish at rear Oil Seal Surface	Diagonal Knurling	
<b>Main bearing Size</b>		
Diameter and length	No.1 2.50 x.73"	
	No.2 2.50 x.73"	
	No.3 2.50 x.72"	
	No.4 2.50 x.73"	
	No.5 2.50 x 1.19"	
<b>Main bearing Journals</b>		
Diameter	2.5	2.625
Max Allowable Out of round	.001"	.001"
Max Allowable Taper	.001"	.001"
Center Bearing Run-Out (total indicator reading) When supported at front and rear main bearing	.002"	.002"
<b>Crankpin Journals</b>		
Diameter	2.2495-2.2505"	2.2495-2.2505"
Max Allowable Out of round	.001"	.001"
Max Allowable Taper	.001"	.001"

<b>Connecting Rods</b>		
Length (center to center)	6.62	6.358
Weight (less bearing shell)	22.5	28.6
Bearings	Steel Backed Babbitt	Steel Backed Babbitt
Diameter and Length	2 1/4 x 13 /16"	2.375 x .927"
Clearance	.0005-.0015"	.0002-.0022"
Max allowable	.0025"	.0025"
Side Clearance	.009-.017"	.009-.017"
<b>Connecting Rod Bushing</b>		
Type	Steel Backed Bronze	none
Diameter and Length	1.110-1.125-.9217-.9220	_____
<b>Pistons</b>		
Type	Conformatic with Steel Strut / Horizontal Slot with Steel Band	
Material	Aluminum alloy tin coated	Aluminum alloy tin coated
Land Clearance (in Bore)	.027-.033"	.042-.047"
Clearance (top of Skirt)	.0005-.0015"	.0005-.0015"
Weight (Standard through all oversize)	18.6 oz	705 gram
Ring Groove Width (upper)	.032"	.032"
(intermediate)	.0790-.0800"	.0790-.0800"
(lower)	.1875-.1890"	.1875-.1890"
<b>Valves (intake)</b>		
Head Diameter	1.84"	1.95"
Length (overall)	4.31"	4.81"
Stem Diameter	.37"	.37"
Stem to Guide Clearance	.002"	.002"
Max. allowable	.004"	.004"



Face angle	45 deg	45 deg
<b>Valves (Exhaust)</b>		
Head Diameter	1.47"	1.60"
Length (overall)	4.31"	4.81"
Stem Diameter	.37"	.37"
Stem to Guide Clearance	.003"	.003"
Max. allowable	.006"	.006"
Face angle	45 deg	45 deg
<b>Valve guides</b>		
Type	Cast in Head	Cast in head
Size	.374"	.374"
<b>Valve Springs</b>		
Pressure when compressed (Valve Closed)	1.69"-72 lbs	1.86"-75 to 85 lbs
Pressure when compressed (Valve Open)	1.31"-166lbs	1.47"-173 to 187 lbs
Valve spring installed height (spring seat to retainer)	1 5/8 - 1 11/16"	1 55/64"

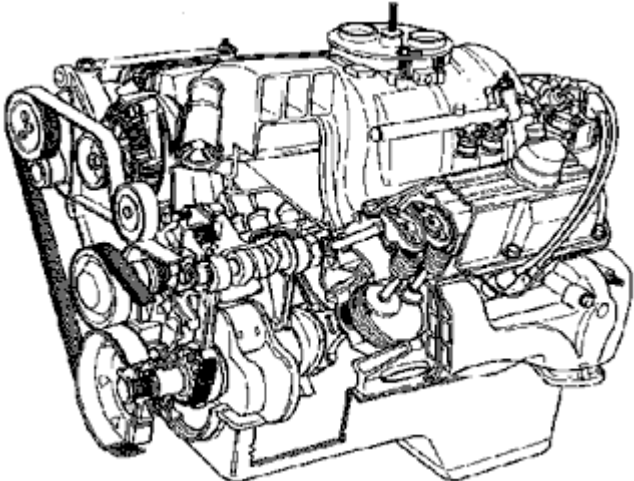
## ***D500 Option***

The D500 option was one of two options for the Super Red Ram engine. The D500 was commonly known as a 361 V8 with a 4 barrel carburetor, a very similar engine to the 350. The Dodge workshop manual refers to this engine as a 360 but it is very different from the [360](#) we know from the 70s.

The D500 came with a Dual Contact distributor to complement the larger carburetor, and was said to produce 300 horse power. I do know that the majority of 58 and 59 Facel Vegas, the French produced cars with the Dodge running gear were D500 optioned engines and boosted a top speed of 175 mph.

The most impressive and elusive option was twin 4 barrel setup of the D500, I had never seen or even heard of this option before I got the workshop manual. So if you have a Custom Royal with this option email me and let me know how much you want for it !

<b>Distributor for 8 Cylinder Red Ram</b>	
Model	IBP-4002
Rotation	Clockwise
Advance Control	Automatic
Point Gap	.015 to .018"
Breaker Arm Spring Tension	17 to 20
Contact Dwell (degrees)	29 to 32 deg
<b>Automatic Advance curve (Distributor speed)</b>	
290 to 410	0 Deg
410	0 to 2 Deg
650	4 to 6 Deg
1650	8 to 10 Deg
<b>Vacuum Advance Curve</b>	
Manifold vacuum in inches of mercury	
6.1 to 7.3	0 Deg
10	4.6 to 6.6 Deg
14	10 to 12 deg
Condenser Capacity (Microfarads)	.25 to .285
Timing Mark location (marks 2 deg apart)	Fan Drive Pulley
Engine Idle Speed (RPM)	475 to 500
Firing Order	1-8-4-3-6-5-7-2
<b>Distributor For 8 Cylinder SUPER RED RAM</b>	
Model	IBP-4005
Rotation	Counter Clockwise
Advance Control	Automatic



### The 318 (5.2 Liter V-8) - Poly, Magnum, etc.

Chrysler actually made three basic versions of the 318: the first, polyspherical-head version in the 1960s - the second, LA family in the late 1960s and through to the late 1980s/early 1990s - and the final Magnum family, which is still in production for light trucks and Jeeps. The 318 may be discontinued as the first completely new Mopar V-8s since the 1950s are introduced.

The 318 came as the standard V-8 for many years, and was the optional V-8 on Valiants and other small cars in its earlier years, when the 273 was still around. It was used as a police engine, mainly in the M-bodies (Diplomats and Gran Furys), and was often the largest engine available in Valiants and their descendents, the Volare/ Aspens and Diplomat/Gran Furies.

From its introduction in 1967 through its conversion to EFI, the 318 was generally treated as a two-barrel workhorse. With the 340 and 360 around, the 318 kept its "economy carb" from 1968 through 1978, when it got a four-barrel option. Despite its "economy engine" status through many years, the 318 started out as a performance option and ended as one in Chrysler's final police cars, the M-body Diplomat and Gran Fury. (Unfortunately, without rear-wheel-drive sedans to put them in, the Magnum treatment never made it into the police force).

Though the 318's performance came between the GM 305 and 350, it never seemed to have the oil-burning and smoke-producing qualities of those engines. Like the slant six, the 318 has shown itself capable of great abuse at the hands of those non-oil-or-air-filter-changing bozos who so often end up behind the wheels of Mopar cars and light trucks.

Rather than coming to the same (performance-oriented) end as the 305/350, though, the 318 was destined to be phased out of cars entirely, and to be used in pickups and Jeeps. Though the modern version has been raised to its potential, with sufficient fuel making its way into the cylinders and more efficient burning, the 318 was rarely really fully appreciated by Chrysler (the pre-1972 340 years are a major exception).

