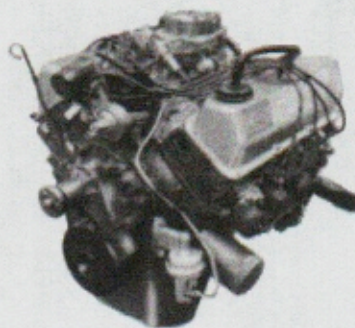


351 Cleveland Engine

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351 Cleveland History (short)

The 351 Cleveland (351C) is not related to the earlier 351 Windsor, except in cubic inches. This designation is important to avoid any form of confusion. The 351C came on the scene with 1970 model introduction topped with either 2V or 4V induction. The most important difference was the heads. Two barrel heads used "open" combustion chambers, whereas 4V heads had smaller "quench" heads to achieve a higher compression ratio. Four barrel heads also had larger valves and ports, and as you might expect, a bit hotter hydraulic cam to handle the extra breathing capability. Both of these engines were also available in 1971 models, basically unchanged. The BOSS 351 with a solid lifter cam was introduced with the 1971 models. At mid-year (May 1971), the 351C Cobra Jet (351CJ) appeared.

'71 4V/CJ Comparison Summary

The CJ hydraulic cam has more duration and overlap than the 4V. CJ blocks also feature 4-bolt main caps. CJ heads use the "open" 2V combustion chamber design, but retain the larger valves and ports of the 4V head. 4V engines used a model 4300-A Autolite carb with a standard Holley/Autolite manifold bolt pattern. CJ engines, however use a model 4300-D Autolite carb. The "D" model carburetor features small primaries and large secondaries ... and most importantly ... a larger "spread bore" manifold bolt pattern.

'72 4V/CJ Comparison Summary

In 1972, 4V and CJ engines are identical. 1971-72 CJ engines are basically the same, except for a 4-degree retard in cam valve timing specs in 1972

1971 BOSS and 1972 "R" code Comparison Summary

The major difference is in piston and cylinder head design. 1971 BOSS engines use a

"quench" combustion chamber, whereas 1972 heads are the "open" type with the 1971-size valves and ports. Both are machined for a mechanical cam valve train, (which is the chief difference between the BOSS and CJ heads that are machined for a hydraulic valve train). '72 engines use a forced flat-top piston (8.8: 1 compression ratio) while the '71 engine uses a forged pop-up piston (*11.1: 1 ratio). The '71 cam provides increased duration and overlays over the 1972 grind.

(* Some automotive literature have reported 11.3: 1 or 11.7: 1 CR)

351 CLEVELAND ENGINE COMPARISON

"The Engine of the 1970's"

	1971		1972	
	4V and CJ	BOSS 351	4V/CJ	"R" Code
Cylinder Block	4V-2 bolt main caps CJ-4 bolt main caps	4 bolt main caps selected from hardness	Same as '71 CJ	Same as '71 Boss
Cylinder Head	4V-Quench chamber - 64.6-67.6 cc -non adjustable rocker arm pedestal CJ-Open chamber -73.9-76.9 cc -induction hardened exhaust valve seats. Otherwise same as 4V	4V-Quench chamber -64.6-67.6 cc Otherwise same as '71 4V, except rocker arm pedestal machined for mechanical camshaft	Same as '71 CJ	Open chamber 73.9-76.9 cc Otherwise same as '71 Boss
Cyl. Head Gasket	4V Production composition CJ Reintz Repa comp. For 100 ft-lb torque	Reintz special comp. For 120 ft-lb torque	Same as '71 CJ	Same as '71 Boss
Intake Valve	2.19" dia head 11/32" dia solid stem Multi-grove key Sil-Chrome No. 1	2.19" dia head 11/32" dia solid stem Multi-grove key Sil-Chrome No. 1	Same as '71 CJ	Same as '71 Boss
Exhaust Valve	1.71" dia head 11/32" dia solid stem Multi-grove key 21-4N Steel	1.71" dia head 11/32" dia solid stem Multi-grove key 21-4N Steel	Same as '71 CJ	Same as '71 Boss
Rocker Arm Stud	5/16" bolt	7/16" threaded stud	Same as '71 CJ	Same as '71 Boss
Rocker Arm Fulcrum	"T" shaped-non adj.	Cylindrical-adjustable	Same as '71 CJ	Same as '71 Boss
Rocker Arm	CJ Stamped-high strength 4V production	Stamped high strength	Same as '71 CJ	Same as '71 Boss
Connecting Rod	1041-H Forged Steel 3/8" nut and bolt	1041-H Forged Steel -shot peened and - magnafluxed -improved durability 180,000 psi 3/8"	Same as '71 CJ	Same as '71 Boss

		nut and bolt		
Piston	Cast Aluminum-flat top CJ - 9.0:1 CR 4V - 10.7:1 CR	Forged Aluminum Pop up 11.1: 1 CR	Same as '71 CJ Except 9.0: 1 CR	Forged Aluminum-flat top 9.2: 1 CR
Piston Pin	0.912" dia I.D. non-tapered	0.912" dia I.D. non-tapered	Same as '71 CJ	Same as '71 Boss
Con Rod Bearings	Over-plated copper/lead W/increased eccentricity	Same as CJ	Same as '71 CJ	Same as '71 Boss
Oil Pan assembly	Production w/welded windage baffle	Same as CJ	Same as '71 CJ	Same as '71 Boss
Oil Level Indicator	Calibrated for 5 quarts	Calibrated for 6 quarts	Same as '71 CJ	Same as '71 Boss
Intake Manifold	Cast Iron-over/under	Cast Aluminum-over/under	Same as '71 CJ	Same as '71 Boss
Carburetor	4V-Autolite Model 4300-A w/std bolt pattern CJ-Autolite Model 4300-D w/spread bore pattern	Autolite Model 4300-D w/spread bore pattern	Same as '71 CJ	Same as '71 Boss Except with different calibration
Distributor	4V-Single Point Dual diaphragm CJ-Dual Point Dual diaphragm	Same as CJ, except for calibration	Same as '71 CJ	Same as '71 Boss
Rocker Arm Covers	Stamped Steel	Cast Aluminum	Same as '71 CJ	Same as '71 Boss
Air Cleaner	Ram-air-optional	Ram air	Ram air not available	Ram air not available
Oil Fill	5 Qt. SAE 10W-30	6 Qt. SAE 40 (summer) 6 Qt. SAE 30 (winter)	Same as '71 CJ	Same as '71 Boss
Rear Oil Seal	Rope type	Split lip	Same as '71 CJ	Same as '71 Boss
Valve Spring	285 lbs @ 1.32 open	325 lbs @ 1.32 open	Same as '71 CJ	Same as '71 Boss
Valve Sp. Retainer	Compatible with multi-groove keeper	Compatible with single-groove keeper	Same as '71 CJ	Same as '71 Boss
Valve Spring Key	Multi-groove	Single-groove-hardened	Same as '71 CJ	Same as '71 Boss
Valve Stem Seal	Production 351C	Production 429 with shorter skirt for improved lubrication	Same as '71 CJ	Same as '71 Boss
Valve Spring Seat	None required	Stamped Steel	Same as '71 CJ	Same as '71 Boss
Push Rod	Production	Hardened and ground	Same as '71 CJ	Same as '71 Boss
Push Rod Guide Plate	None required	Same as Boss 302	None required	Same as '71 Boss
Camshaft	Hydraulic 4V-duration 266 degrees i/270 degrees E overlap 34 degrees lift 0.427" CJ-duration 270 degrees i/290 degrees E overlap 46 degrees lift 0.480"/0.488"	Mechanical Duration 290 degrees I and E Overlap 58% lift 0.477"	Same as '71 CJ Except valve events retarded 4 degrees	Mechanical Duration 275 degrees I and E Overlap 35 degrees lift 0.491"
Tappets	Hydraulic	Mechanical Internal metering	Same as '71 CJ	Same as '71 Boss
Crankshaft	Cast Iron	Cast iron-selected for hardness (90% nodularity)	Same as '71 CJ	Same as '71 Boss
Damper	01.10 inertia - cast iron hub -cast iron inertia ring -non-bonded elastic member -28.2 oz-in unbalance	0.14 inertia -nodular iron hub -wider cast iron inertia ring -bonded elastic member -27.3 oz-in unbalance	Same as '71 CJ	Same as '71 Boss

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Horsepower	300 @ 5400 4V 70
Base horsepower (Bhp) / rpm	285 @ 5400 4V 71
	280 @ 5800 CJ 71
	330 @ 5400 Boss 71
	266 @ 5400 4V/CJ 72
	275 @ 6000 "R" code 72
Note: '72 figures are SAE "net" Bhp	
Torque (lb-ft @ rpm)	380 @ 3400 4V 70
	370 @ 3400 4V 71
Note: '72 figures are SAE "net"	 345 @ 3800 CJ 71
	370 @ 4000 Boss 71
	301 @ 3600 4V/CJ 72
	286 @ 3800 "R" Code 72
Compression Ratio (max.)	11.0:1 4V 70
	10.7:1 4V 71
	9.0:1 CJ 71
	11.7:1 Boss 71
	9.0:1 4V/CJ 72
	9.2:1 "R" code 72
Bore	4.00
Stroke	3.50
Bore spacing	4.38
Head Volume (c.c)	61.3-64.3 4V 70
	64.6-67.6 4V & Boss 71