

The Other 350s: Oldsmobile

BY MARLAN DAVIS

Photos by Marlan Davis

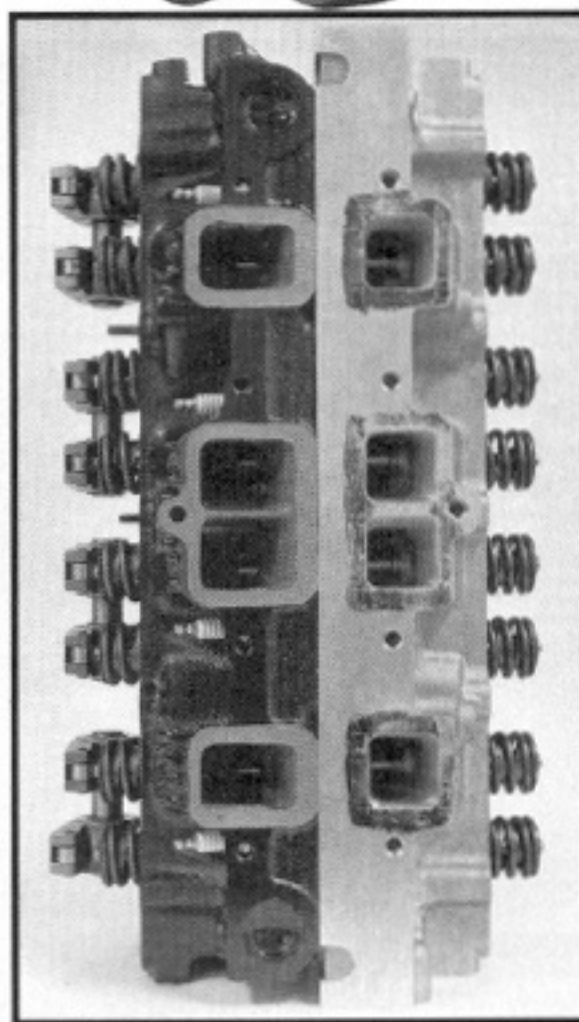
The Olds 350's design specs offer ample performance potential: Its big

4.057-inch bore and short 3.385-inch stroke yield 350.1 ci, ample room for large valves, and potential high-rpm capability; long 6-inch rods are standard and produce a favorable 1.77:1 rod/stroke ratio. All that's needed to wake up the Olds are the right cam, an adjustable valvetrain, and good cylinder heads.

Dick Miller and Mondello recommend Edelbrock Performer RPM aluminum heads (PN 6051). Although designed for the big-block Olds, they bolt on to a small-block, and the 2.072-inch intake and 1.680-inch exhaust valves have no problem clearing the bore. Deck the heads to reduce chamber volume to 70 cc and achieve 10.0:1 compression with pure flat-top pistons (Federal-Mogul PN L2320F), 9.2cc compressed-volume Fel-Pro head gaskets (PN 1155), and a 0.0025-inch piston-to-deck height.

In contrast, Dave Smith Oldsmobile prefers '68-'72 350 production heads for most street cars due to their "superior low-end velocity." They use 1.875-inch intake valves and 1.562-inch exhausts, except for the W-31 version of the No. 6 casting, which has 2.00-/1.625-inch valves. The larger W-31 valves can be added to the other heads, but to make them work you must blend in the bowl area and rework the short-side radius to smoothly transition into the new, larger valve seats. Also remove the exhaust port's EGR bump, blending the protrusion smoothly into the roof. Such basic porting is worth 40 hp over stock, but Mondello says as-delivered Edelbrock heads are a 65hp bolt-on.

Dual-purpose cars prefer hydraulic cams with 225-235 degrees duration (at 0.050-inch tappet lift). If you don't mind running a 10-inch converter and a vacuum canister, you can move up to the 235- to 245-degree-duration

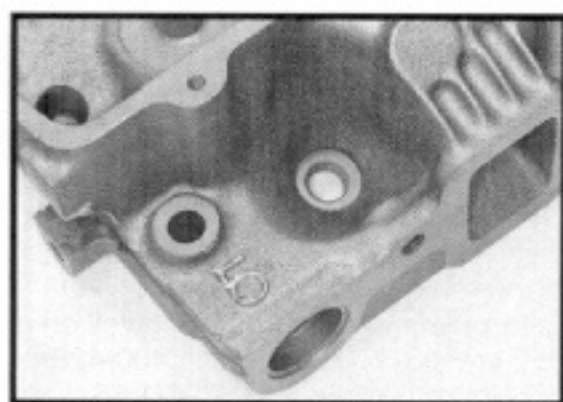


The Edelbrock heads' 106cc exhaust ports (*right*) are smaller than stock iron head ports (*left*)—but by raising the floor, Edelbrock eliminated a dead area, substantially improving flow. Adjustable, stud-mounted rockers and hardened pushrods are required for installation.

With its oversquare design, the 350 Olds has the potential to run with just about anything...and large engines can be built up from converted 350 diesel blocks. Among the gas engines, '68-'72 blocks had the thickest main webs.

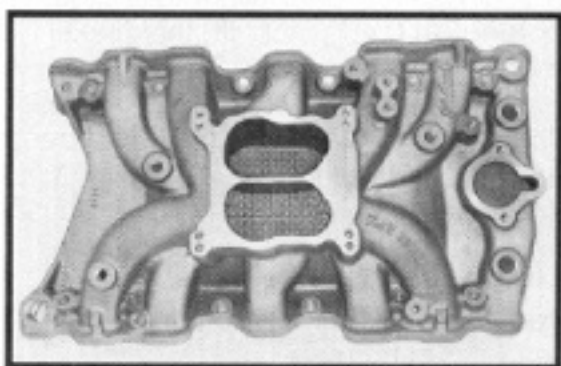


Edelbrock heads won't clear a small-block Olds mechanical fuel pump (*arrow*). Don't try to clearance the head—you'll hit water. Run an electric fuel pump instead.

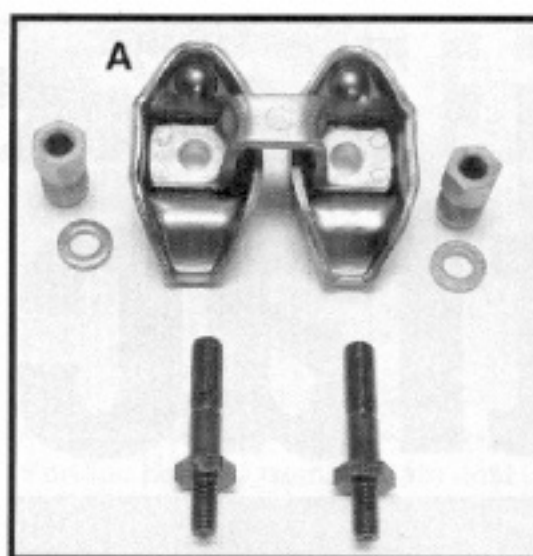


Small-block Olds heads have an identification number on the left end of the heads' exhaust side. Big-block Olds heads have a letter in the same place. The best stock small-block 350 heads are the '68-'72 design with 68-70cc chambers (ID Nos. 5, 6, or 7). Later big chamber heads have less flow potential.

range. The best factory exhaust manifolds were marked X, Y, or Z; however, this motor really needs headers with 1½- to 1¾-inch primaries and 3- to 3½-inch collectors. The ubiquitous HEI is the distributor of choice, but this 6,500-rpm-potential engine could use the extra spike provided by an MSD-6. Of the non-Chevy 350s, the big-

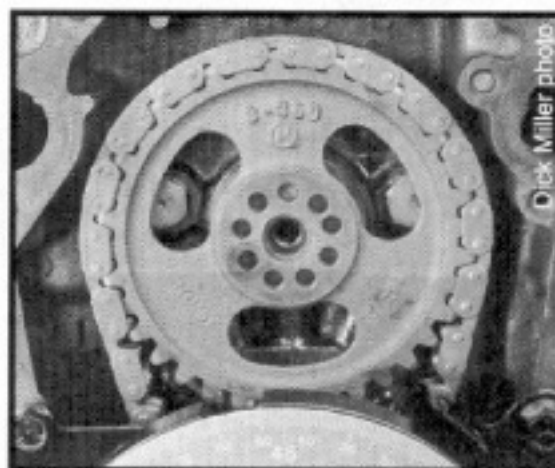


With a 1,500- to 6,500-rpm power range, Edelbrock's Performer RPM (PN 7111) is the best intake for small-block Olds performance use. It's also the only manifold with enough material to allow port-matching to the Edelbrock heads' taller runners. The 350 Olds engines like 750-cfm carbs.

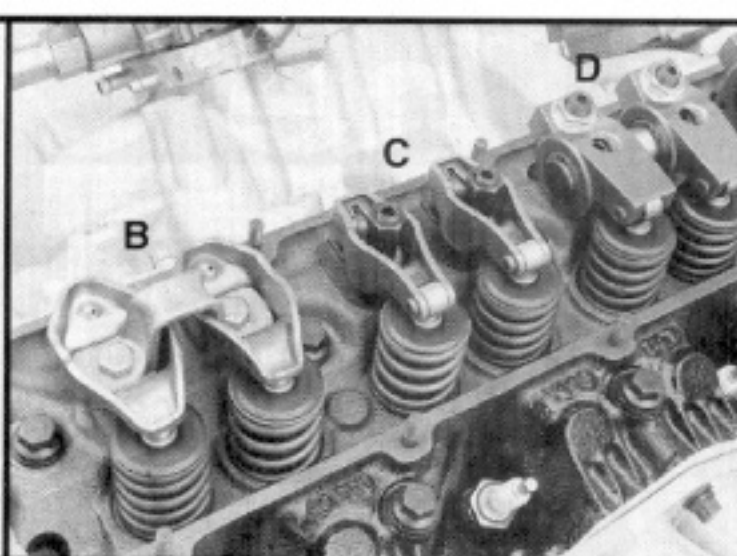


Olds adjustable valvetrain solutions begin with a low-buck Dave Smith kit (PN DS 4123, A) that utilizes stock rocker arms and is good through 0.520-inch lift; note the studs and polyloks that replace the stock hold-down screws (B). The next step is Mondello's affordable roller-tip rockers (PN SAR 460, C). Ultimately there are needle-bearing aluminum roller rockers (D). By reducing the high friction inherent in the Olds' pedestal-mounted rocker-arm design, roller rockers can be worth 25 hp.

bore Olds is the only one that's worth rebuilding from scratch. Although off-the-shelf piston availability isn't great, the '68-'76 blocks can be bored to



Dick Miller sells this affordable Melling ½-inch-pitch, all-steel timing chain set with drilled multiple dowel pin holes that allow advancing or retarding cams 2, 4, 6, or 8 degrees. Use it with a two-piece front cover (PN GMC-22525282-S) to allow quick and easy timing changes.



4.155 inches (0.098-over) to permit using 0.030-oversize 425 big-block Olds pistons (Federal-Mogul PN L2214N-30) that have the same compression height as an Olds 350. Although '77-'80 350 gas blocks have siamesed cylinder walls, the walls are thinner overall; don't bore them more than 0.067-inch oversize. There are also really thick-wall 350 diesel blocks, for which Olds specialists offer gas conversion kits and stroker cranks. With a converted diesel block bored to 4.185 inches, a 425 Olds crank reworked with big-block Chevy rod journals and a 4.0-inch stroke, and modified big-block Chevy con rods, you're looking at a 440ci small-block Olds street engine! **CC**

Oldsmobile 350 Hydraulic Cam Recommendations

Olds niche specialists offer a wide variety of performance cams and complimentary valvetrain components. Their recommendations for a hot street bolt-on buildup are listed here.

Source	Grind and Part No.	Claimed Power Range (Rpm)	Duration		Valve Lift w/ 1.60:1 Rockers (Int./Exh.)	Lobe Center-line (Int./Exh.)	Lobe Displacement Angle	Valve-spring Part No.*	Retainer Part No.*
			Advertised (Int./Exh.)	0.050-inch (Int./Exh.)					
Dave Smith	Cam PN DS 4008 Kit PN DS 4044	2,000-6,000	276°/286°	226°/232°	0.500"/0.510"	106°/114°	110°	Included with kit	
Dick Miller	Lunati Bracket Master II (PN LUN-00083)	2,500-5,500	290°/300°	224°/234°	0.496"/0.520"	108°/116°	112°	LUN-73126	LUN-75702
Mondello	JM 22-25-10	1,400-6,000	274°/280°	230°/236°	0.512"/0.523"	108°/112°	110°	SK-247-SP	CR-320

*Listed springs and retainers fit recommended Olds production heads with ID numbers 5, 6, or 7; other Olds heads may require different components. Edelbrock heads come assembled with proprietary springs and retainers that support up to 0.575-inch lift.