

Inductive Reasoning

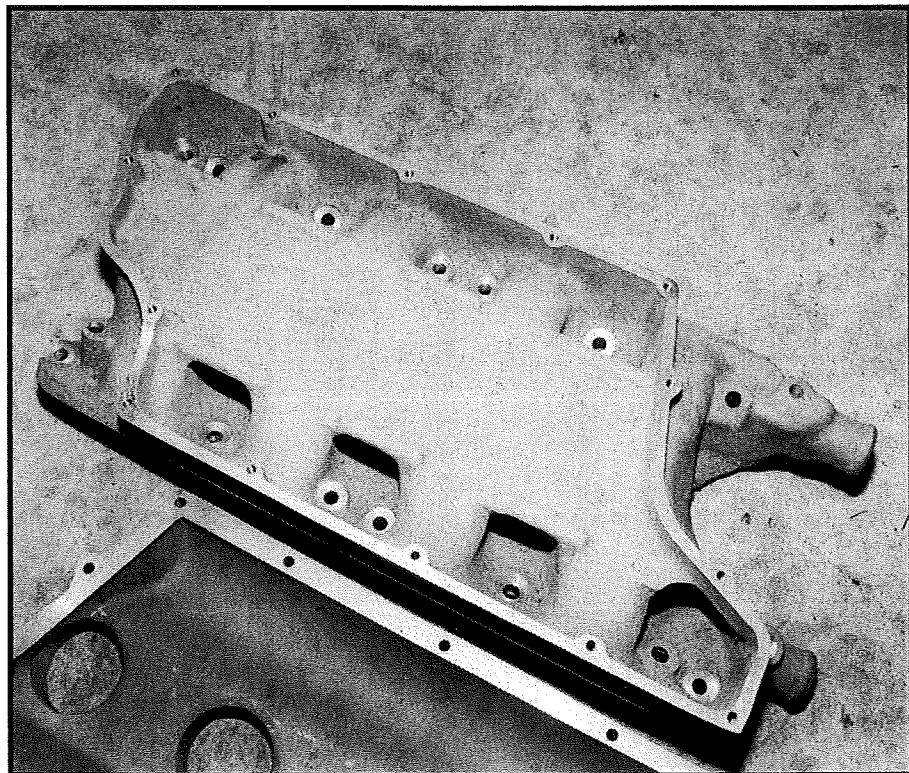
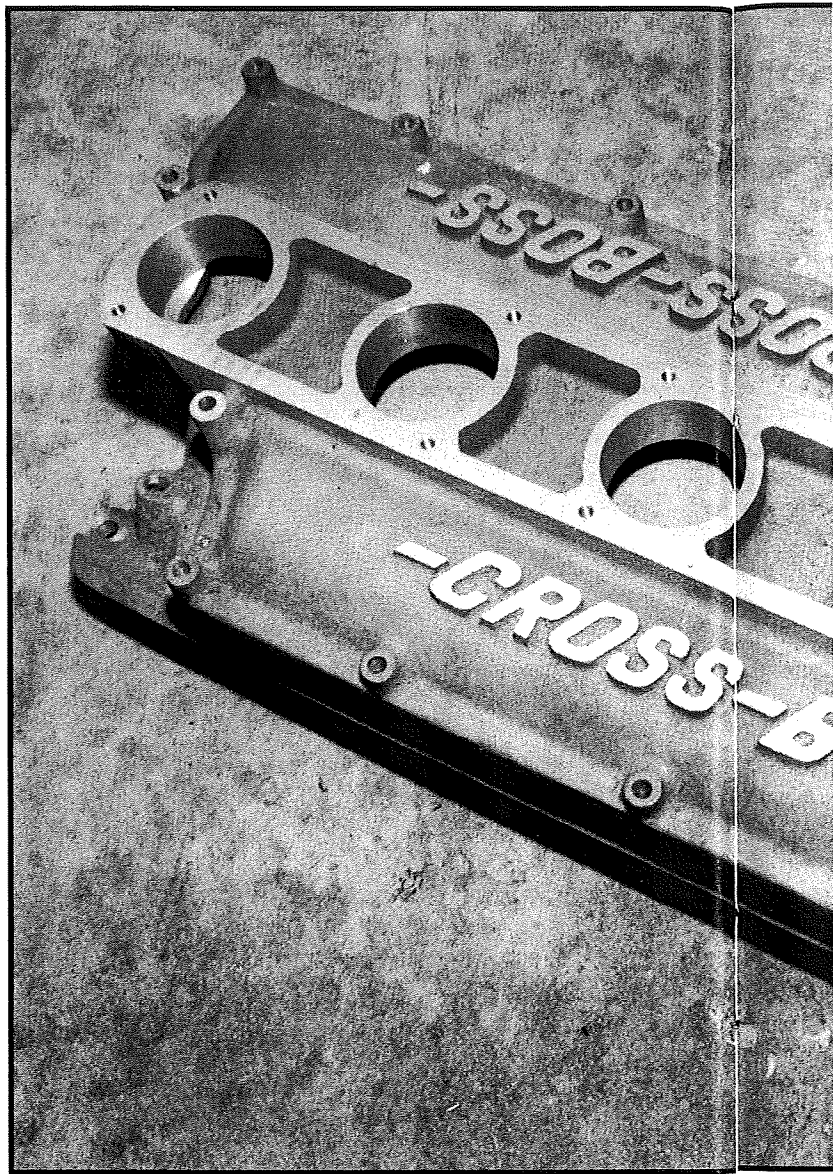
Investigating rare Boss 302 intake manifolds

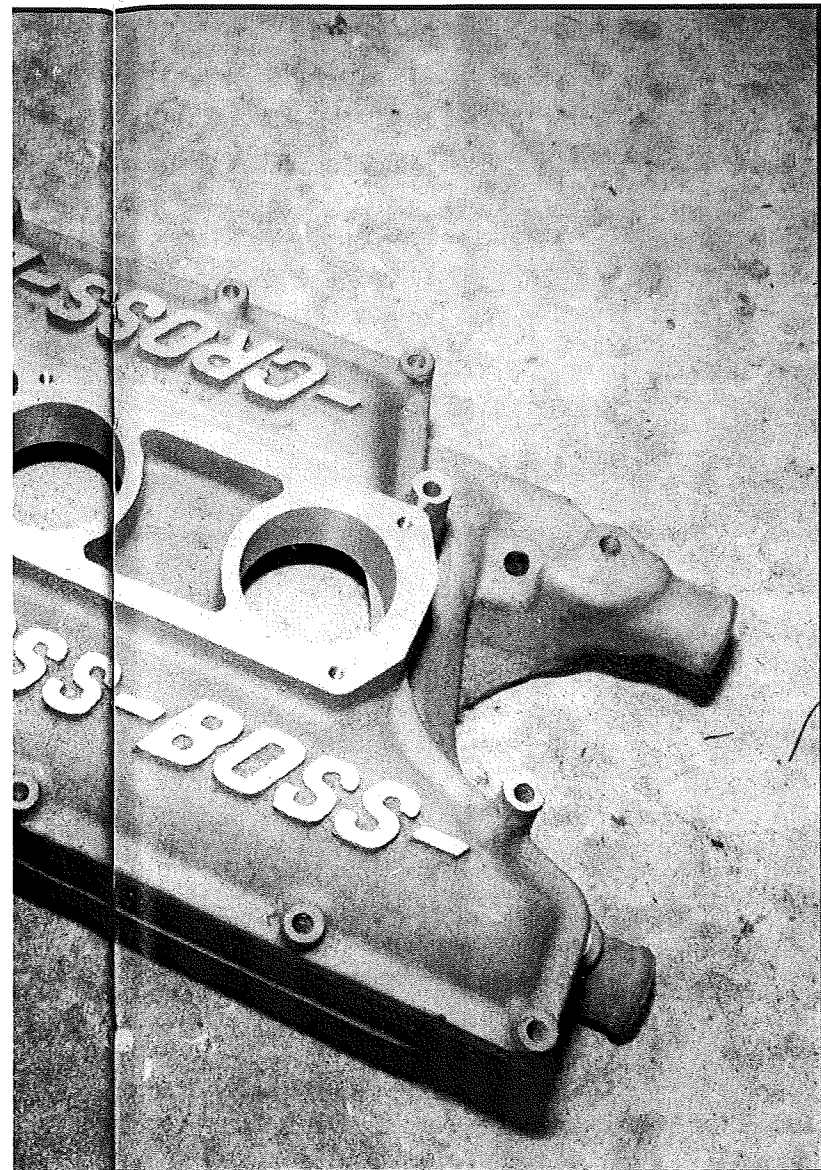
*by John Craft
photography by the author*

Myths persist. Take, for example, the flat-earthers who still insist that Columbus was wrong. How about the folks who are adamant that Elvis is alive, well and working as a short-order cook? And let's not forget those who look for giant lizards in the murky depths of certain Scottish lochs, either. Heck, some Ford enthusiasts even still believe that only one intake manifold was ever cast for the Boss 302 five-liter motor. Go figure.

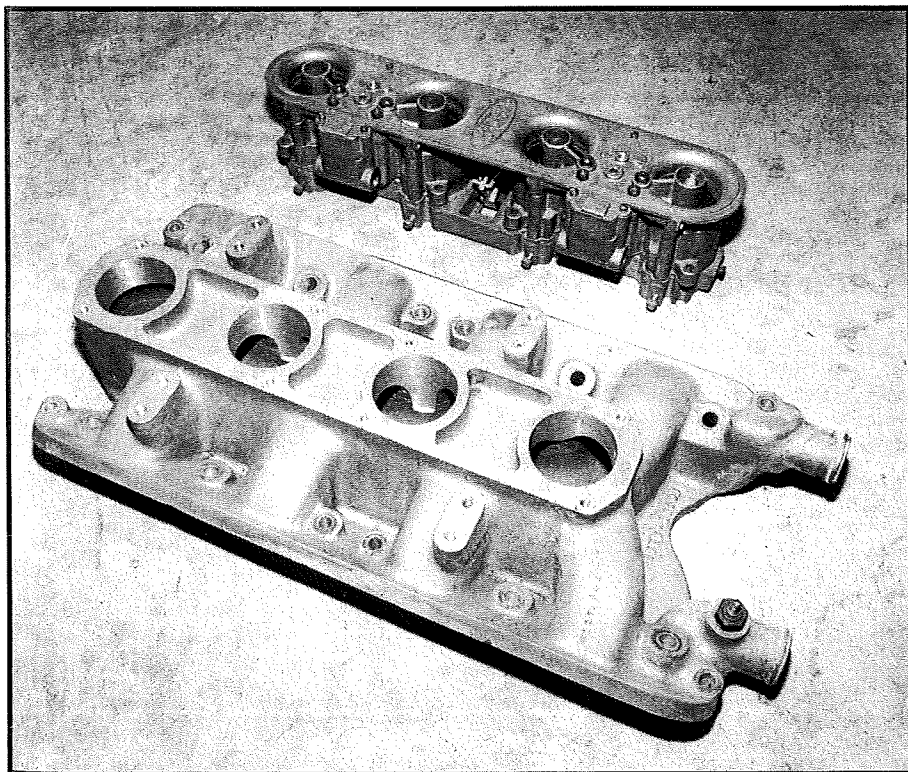
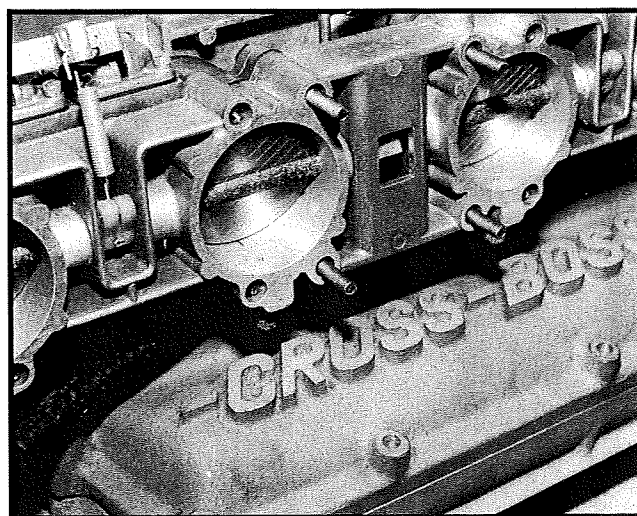
Fortunately, in comparison to the myths about Elvis and Nessie, the mistaken belief that Ford never investigated other induction systems than the familiar single four-barrel intake that graced every street-going Boss can easily be debunked. As a matter of fact, a little bit of digging turned up no fewer than a dozen different in-house and aftermarket intakes designed specifically for the Boss 302 engine. One of them might just be the ticket for setting your T/A-inspired pony off from the rest of the pack since, with few exceptions, all either originally carried Ford part numbers or at least were strongly associated with "true blue" Ford suppliers. Of course, first you'll have to find one, and you should know that some of the Boss intakes we've pictured here are extremely hard to find. The prices they command are, as a natural consequence, pretty breathtaking (read: mid-five figures for a 20-pound chunk of aluminum). Of course, if your pockets are sufficiently deep, you might already have several of these intakes in your personal collection like West Coast enthusiast and Boss-crazy Gus Tarrab. It was with his help and the assistance of Florida collector Gary Till that we were able to capture on film most (but not all) of the rare Boss 302 intakes made. Read on, and we'll introduce you to some of the oddest aluminum castings to ever come out of a mold.

With the lid of the Cross Boss removed, you can see the large plenum area designed to feed runners that run crosswise in the intake's base. This intake was originally designed to accept one single in-line carb though we've seen applications where two were mounted on a machined replacement lid.





Perhaps the most familiar of the non-production intakes for Boss 302s is the Cross Boss two-piece intake Ford offered during the early Seventies. It carries part number DOZX-9425-A for the base and DOZX-9C483-A for the lid and was designed to accept the trick in-line carburetor developed for use on the Trans-Am circuit. Unfortunately, the SCCA disallowed the carb and it consequently never received the attention (or development) it should have. The Cross Boss carried its casting number just above the driver's side water inlet. Use of this intake in a street application necessitated the fabrication of some sort of remote thermostat setup.



The carburetor the Cross Boss was designed to mount was one trick piece. It was called the Autolite In-line and was available in both a "large" and "small" version. Big in-lines (PN DOZX-9510-B) came with 2 1/4-inch throttle bores and flowed an impressive 1425 cfm. Small in-lines (PN DOZX-9510-A) had smaller 1 11/16-inch throttle bores and flowed 850 cfm. Both carburetors used the same upper body, which meant that both large and small throttle bore bases could be interchanged. Much of the hardware found on an in-line came right off of a regular Autolite four-barrel carburetor.

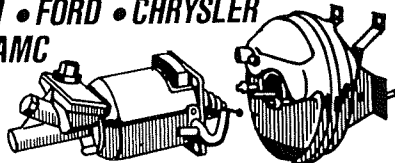
While many think that the two-piece, flat-topped in-line intake is the only version ever cast by Ford, there were actually at least two others made. One of them was this rare single-plane version designed to accept the 1425 cfm in-line. It carried casting number SVEX-1050 and featured cast water necks rather than a thermostat housing. The other version is similar but was machined for the 850 in-line carb. Both were cast in very limited numbers solely for engineering evaluation.

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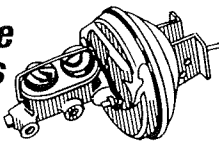


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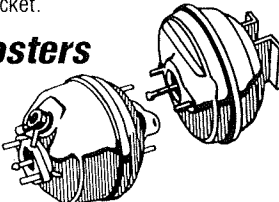
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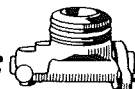
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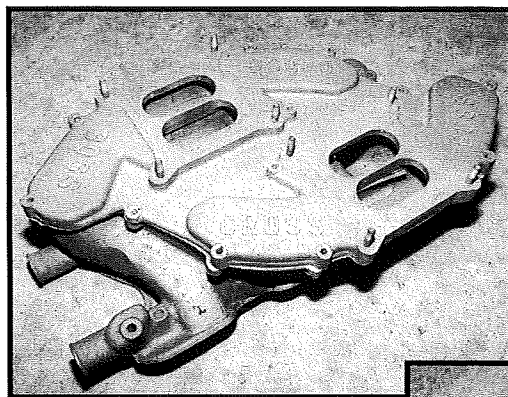
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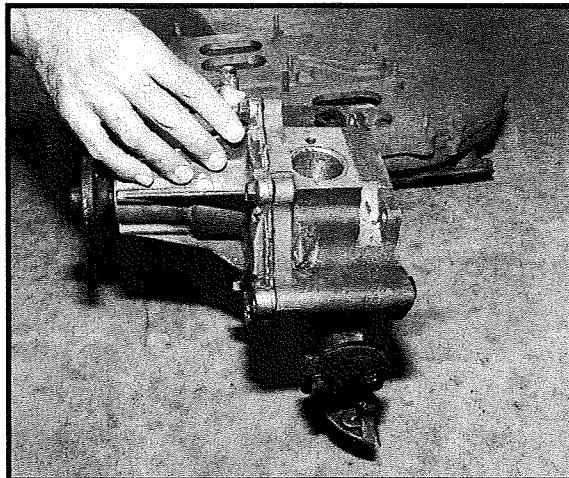
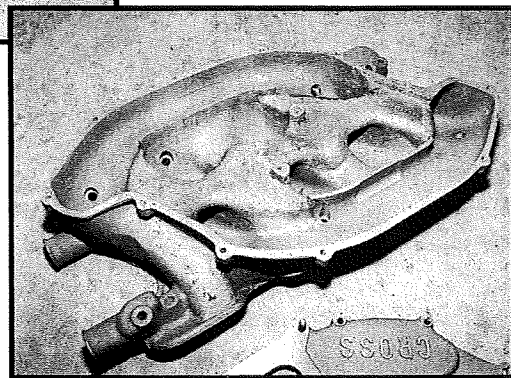
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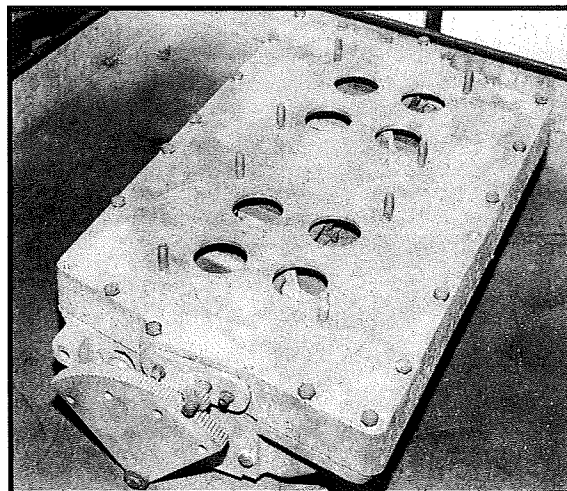
Inductive Reasoning



Here's the original 2x4 Cross Boss 302 intake. Though the name has long been associated solely with the in-line version that carried the same name, the first Cross Boss intake cast was similar to the cross ram 8V intake used by Chevrolet on its Z28 302s. Like the in-line, the earlier intake was cast in two pieces. With the lid removed, you can see the labyrinth of passages. We couldn't find any casting numbers on the 8V Cross Boss, but the other parts of the package were marked with XE engineering numbers. This is probably the only 8V intake ever cast.

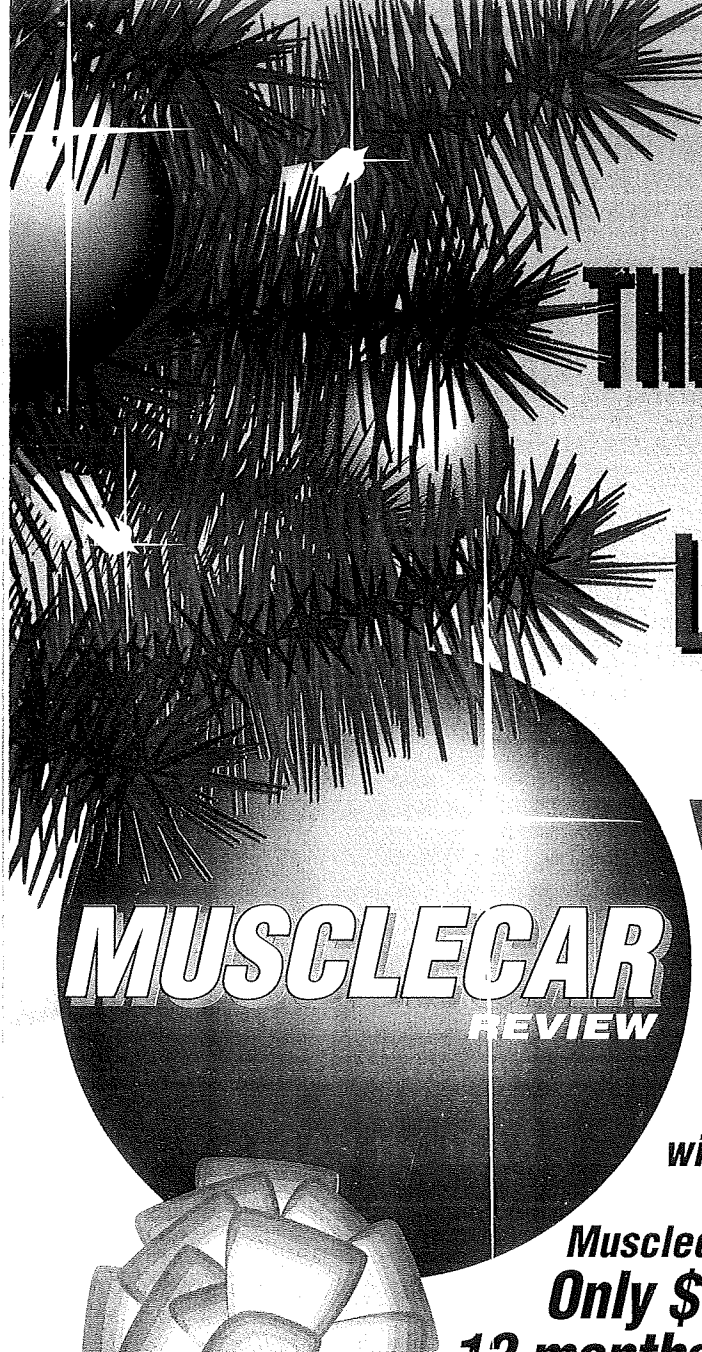


The 8V Cross Boss would have been very difficult to adapt to a street engine as its carburetor placement made it impossible to mount a stock distributor. Ford's early solution to this problem involved using a thicker timing cover that moved the distributor about four inches forward. The new distributor was then driven by a special extension that mounted the front of the camshaft. It was complicated and would have made use in a street Mustang difficult due to radiator interference.



Another engineering "one off" developed for the Boss 302 was this variable runner, ram box intake. Smokey Yunick developed it during his brief tenure with Ford in the late Sixties. Built to mount two four-barrel carbs, Smokey's intake featured gear-driven bronze slides inside the plenum that pulled back under low-vacuum conditions to reveal more of the intake port below. High-vacuum conditions had the opposite effect (in theory), creating an intake that was tuned for both high and low rpm. We say in theory because according to Smokey, the intake never lived up to his expectations, which probably explains why it, too, is the only one ever made.

continued on page 54



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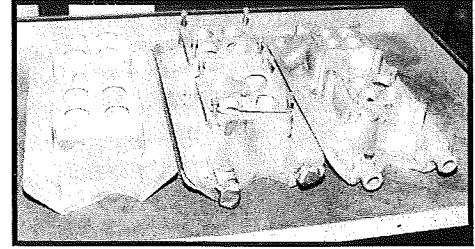
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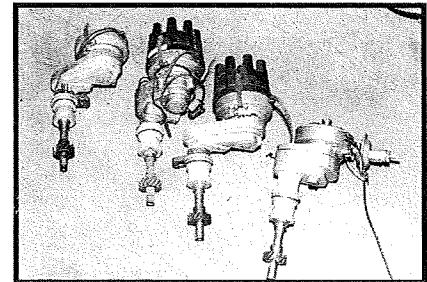
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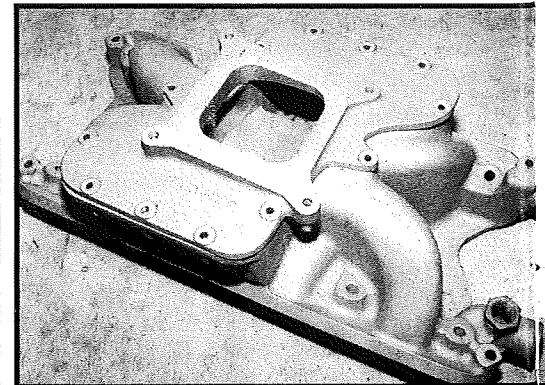
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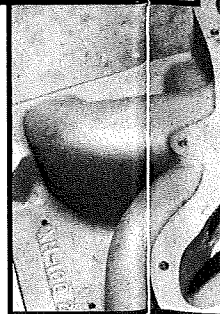
Two types of 8V intakes were used during the 1969 Trans-Am season, and a third was cast for evaluation. Before the introduction of the Ford-backed "Dominator" carburetor, a conventional intake flanged for two regular Holleys was used (right). The racy nature of this intake is revealed by its two water necks and parallel mounting pads (relative to the crank centerline). Street 8V intakes usually place the rear carburetor higher than the front. When the mammoth Dominators came on line, a new single-plane 8V was introduced to mount them (center, PN XE 14964). Essentially an individual runner intake, each of the eight carburetor throttle bores fed just one intake port. Total cfm for this setup was 2200. A second waterjacketless twin Dominator was at least considered because we found this unmachined one (left) in Yunick's shop.



As with the 8V Cross Boss, carburetor placement on the twin Dominator intake interfered with the front-mounted distributor. Ford's solution was to develop an offset distributor. At least three types were tried. The most common version uses a small rubber gilmer belt to spin the breaker (or CDI) plate. At least one gear-driven "offset" distributor was developed for the twin Dominator intake as well. Whichever one you find, be prepared to pay about \$1,000 for it.

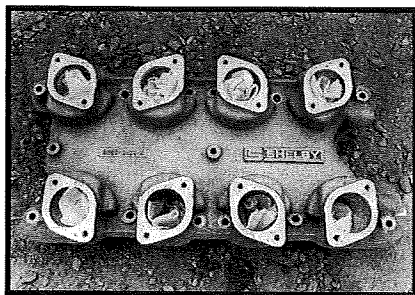


After 1969, SCCA rule changes eliminated the use of 8V induction. Ford countered with what's come to be called the "Bud Moore" Mini-Plenum. The new intake (PN XH-100-22) was of a two-piece design and mounted a single 850 cfm carburetor. The open plenum beneath the top plate (PN XH-1002-3) fed eight large-diameter runners. Using this intake on the street is possible with the right camshaft and rear gear. No provision for a thermostat is present, however.

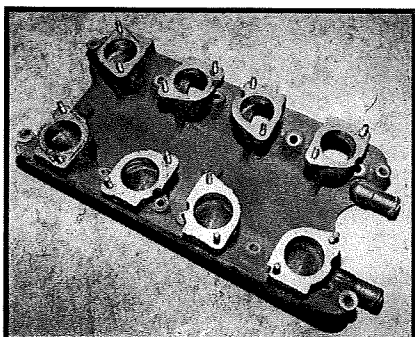


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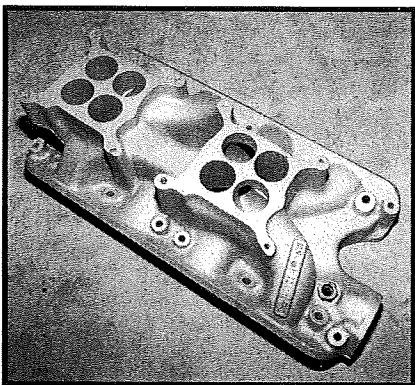
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In addition to the Boss 302 intakes cast by Ford, several aftermarket Ford-related companies have also offered manifolds for T/A five-liter engines. Carroll Shelby, for example, marketed this intake that mounted four 48 IDA Weber carbs. It even carried a Ford-like part number—BOSD 9425-C. List price, circa 1971, was \$170.



Falconer and Dunn also offered a Boss 302 Weber intake that could be run with or without provision for intake water necks.



Shelby's Weber intake was not the only casting he sold for Boss 302s as this dual-plane 8V manifold attests. The intake carried Shelby PN BOSK-9424-A and retailed for \$135. Two Holley 600 cfm carbs to complete the package retailed for \$65 apiece.

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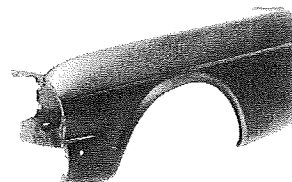
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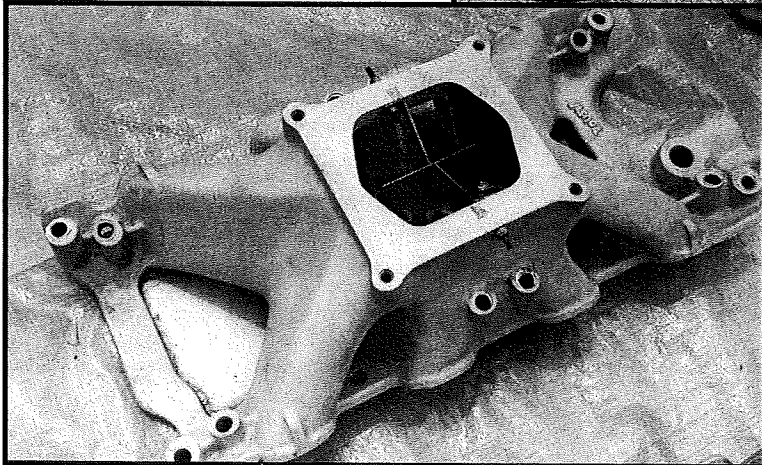
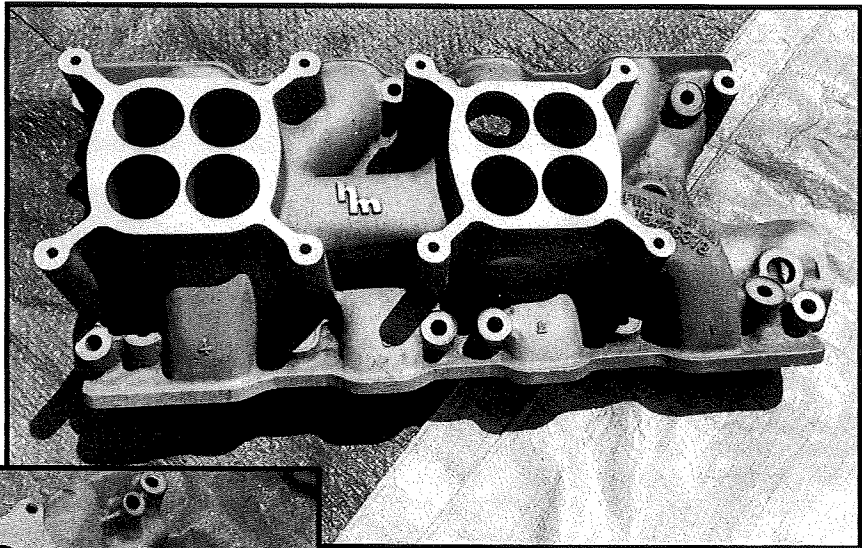


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Shelby's wasn't the only dual four-barrel intake cast for the Boss 302. We came across this Holman & Moody lettered 8V Boss intake at a swap meet. The H&M manifold carried no casting numbers, but it was cast by Buddy Barr as indicated by that company's logo on its base. Interestingly, the Shelby 8V and the H&M piece appear to be completely different castings.



This rare Boss intake was cast by Jack Roush in the days before he became Ford's top performance subcontractor. It is a single-plane, single four manifold featuring short, straight runners obviously intended for high rpm work.

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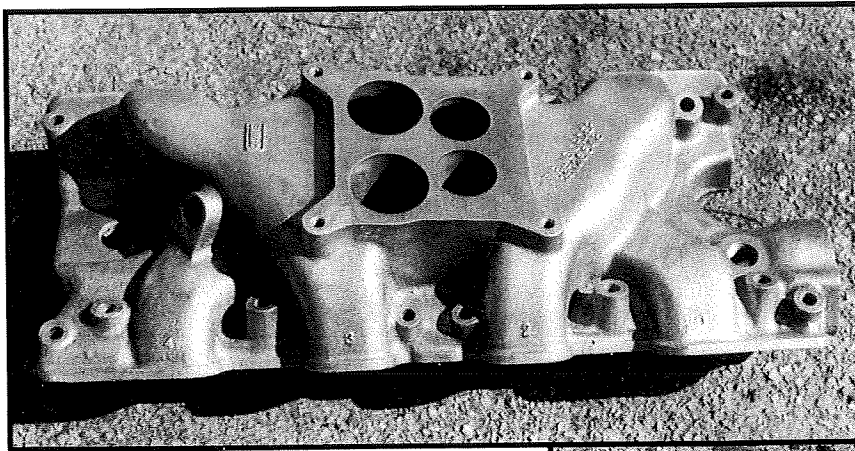
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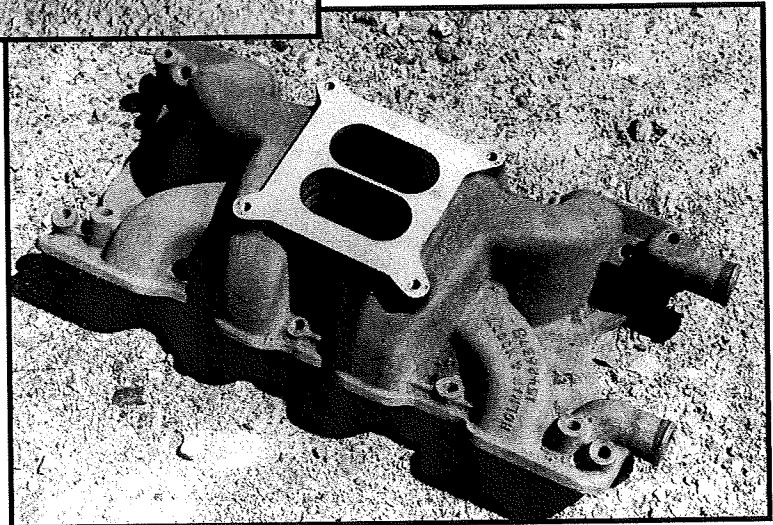




Another Boss 320 oddity is this OEM-looking spread bore casting. Though no casting numbers are present to confirm the suspicion, it's entirely possible that this intake was intended for use in the 1971 Boss 302 program that was killed before going into production.

Holman & Moody also made up at least a few single four, dual plane intake manifolds for Boss 302s. This casting carries part number XH 10032. It features runners that are somewhat revised over stock and Trans-Am style water necks.

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