# Small Block V8 Tri-Power

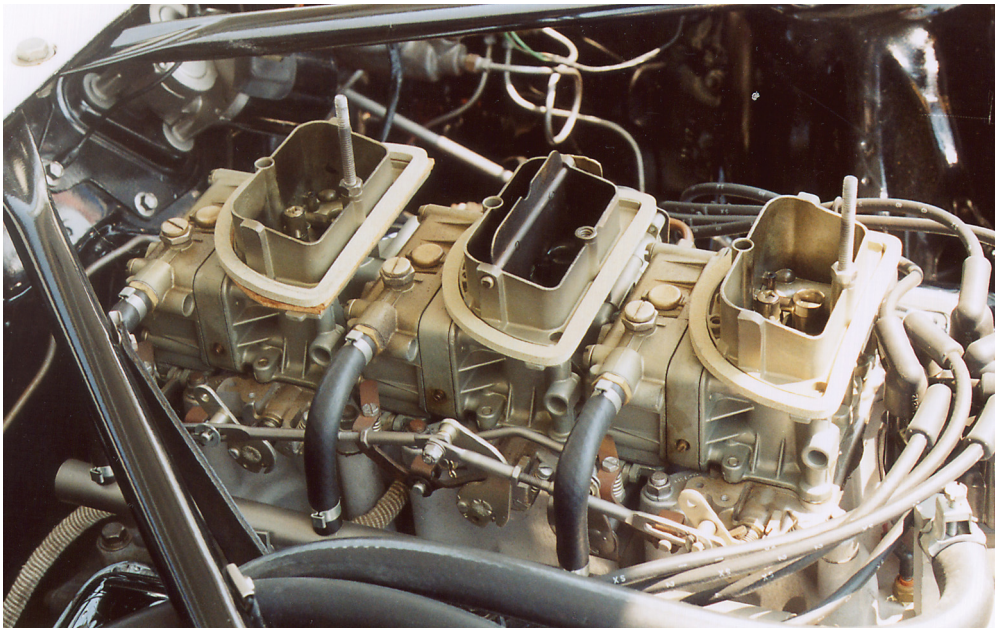
*Rare Instruction Sheets*

**by Bob Mannel**

Who can resist the idea of tri-power (3-2V)? Drive around on just two barrels until you need some serious go-power, then tap into an additional four barrels as the accelerator pedal hits the floor. Sounds good in theory, but sales just never really materialized for Ford like they did over in Brand-X.

Part of the reason was, Ford never offered the 289 tri-power from the factory. It was strictly an over-the-counter accessory. Hence the system lacked the refinements that a factory setup would have brought, along with the parts inventory to service them. Original prices for the kits in 1964 were around $200, which included the aluminum intake manifold. Cost for the accelerator kit for a particular application was under $10.

But, the scarcity and desirability of the Ford small block tri-power systems quickly pushed prices upward. Even in the 1970s, $800 to $1,000 for a complete system was common. The price has only escalated from there, with original systems costing thousands of dollars today. The good news is that reproductions using near original parts are coming back on the market. For under $2,000, you can have a new system.



At the FCA 2005 Kingsport Nationals, I saw Blane Moon's 1963 Fairlane 289 HiPo equipped with tri-power. It was a sight to behold.

Tri-power was purely a progressive linkage arrangement. This meant that as the center carburetor approached a full open throttle position, linkage rapidly pulled the throttles of the other two carburetors open as well. The two links (short one to the front carburetor and longer one to the rear) were adjusted so that all three carburetors hit the full-open position at the same time.

Holley carburetors were used in this configuration. The 260 V8 used a 200 cfm center carburetor with identical 265 cfm Holleys front and rear—a total of 730 cfm. The 289 used a larger 265 cfm center carburetor with smaller 255 cfms front and rear—775 cfm total. Other than the carburetors, the 260 and 289 systems were virtually identical.

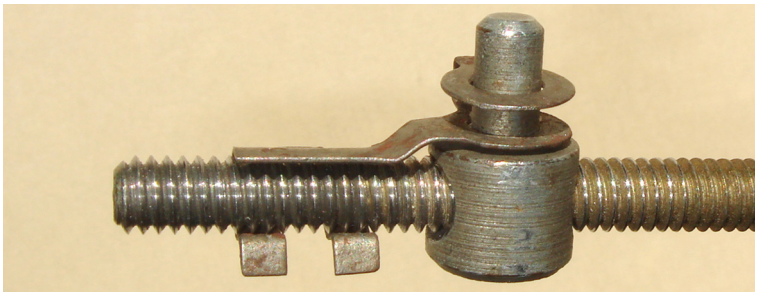
Getting the major pieces of a tri-power system is not the toughest part. There were just four kits—two for the 260 V8 and two for the 289 V8. And between the two kits for each engine, the differences were minor. The toughest part was determining what the accelerator kits looked like. There were seven of them. I have yet to see the ones used for the 1966-67 Fairlane/Comet, but we now have a good idea of what the others looked like, thanks to two instructions sheets. One is from a C4OZ-9B843-A accelerator kit, courtesy of Doug Everstine, and the other from a later C5ZZ-9B0843-B kit. Fortunately for us, the instruction sheets covered multiple accelerator kits.

Remarkably, there is not much to the Fairlane accelerator kit. The rod is very similar to the one used on the 1961-63 Ford big block tri-power, only shorter. The big block rod is in reproduction for $85 from Carl's Ford Parts (330-525-7291). And the arm looks simple enough that it can be fabricated. The critical distance for this arm is the center-to-center distance of 4 9/16" between the gas pedal slotted hole and the ball link, and the angle between the slotted hole flat sides and the ball link which is 25°.

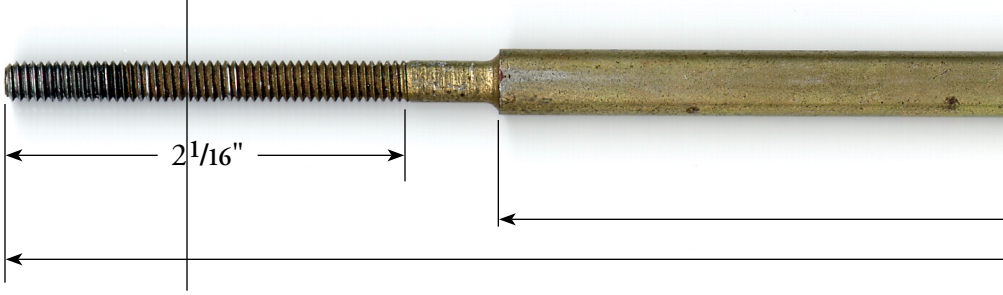
The pictures of the rod and arm at the bottom of this page and page 23 are actual scans (full size). The rod has a diameter of 11/32" (.343") diameter, then necks down to .22" for the threaded end. In addition to these two pieces and instruction sheet, the kit included a trunnion with clip, and a clip for the ball end.

I have listed the contents of the accelerator kits associated with the two instruction sheets (pages 24-27) in the chart on the facing page.

Next time I will see if this kit can be fabricated out of existing parts and materials. Stay tuned!…



A trunnion in conjunction with a standard link clip is used to fine-tune the length of the rod.



| Application | 63 Falcon/Comet | 64-65 Falcon/Comet | 63-65 Fairlane 63 Meteor | 65-66 Mustang (manual trans.) | 65-66 Mustang (auto. trans.) | Notes |
|---|---|---|---|---|---|---|
| Accelerator Kit Part Number | C3DZ-9B843-A | C4DZ-9B843-A | C4OZ-9B843-A | C5ZZ-9B843-A | C5ZZ-9A843-B | |
| | | | | | | |
| Rod (arm-to-carb. throttle shaft) | C3AE-9A701-A | C3AE-9A701-A | C3RA-9A701-A | C4RA-9A701-B | C4RA-9A701-B | 1 |
| Arm (accelerator shaft-to-rod) | C3AE-9A800-A | C3RA-9A800-A | C3RA-9A800-A | | | 2 |
| Trunnion (at carburetor shaft) | AB-99753-A | AB-99753-A | AB-99753-A | | | 3 |
| Clip (at rod and arm union) | 375780-S81 | 375780-S81 | 375780-S81 | | | 4 |
| Clip (at carburetor shaft. R.H.) | B7A-9825-B | B7A-9825-B | B7A-9825-B | | | 5 |
| Clip (at carburetor shaft. L.H.) | | | | B7A-9826-A | B7A-9826-A | 6 |
| Bellcrank & bracket (kickdown) | | | | | C4RA-7E024-A | 7 |

Note 1 - All Falcon/Comet rods are the same. The Fairlane is similar, but longer. The Mustang rod is similar to its stock link, except the rod is extended forward of the S-bend.

Note 2 - Arm between the 64-65 Falcon/Comet and 63-65 Fairlane are the same. The 63 Falcon/Comet is similar, but uses a clamping arrangement to attach to the gas pedal shaft. If the 63 Falcon/Comet gas pedal shaft is swapped for a 64-65 Falcon/Comet gas pedal shaft, then the 64-65 Falcon/Comet arm could be used.

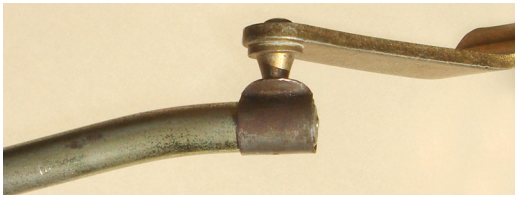
Note 3 - This trunnion can be found on the carburetor link of any 63-65 Falcon/Comet/Fairlane V8 with automatic transmission.

Note 4 - This clip is the same one used on the Galaxie with tri-power or dual quads.

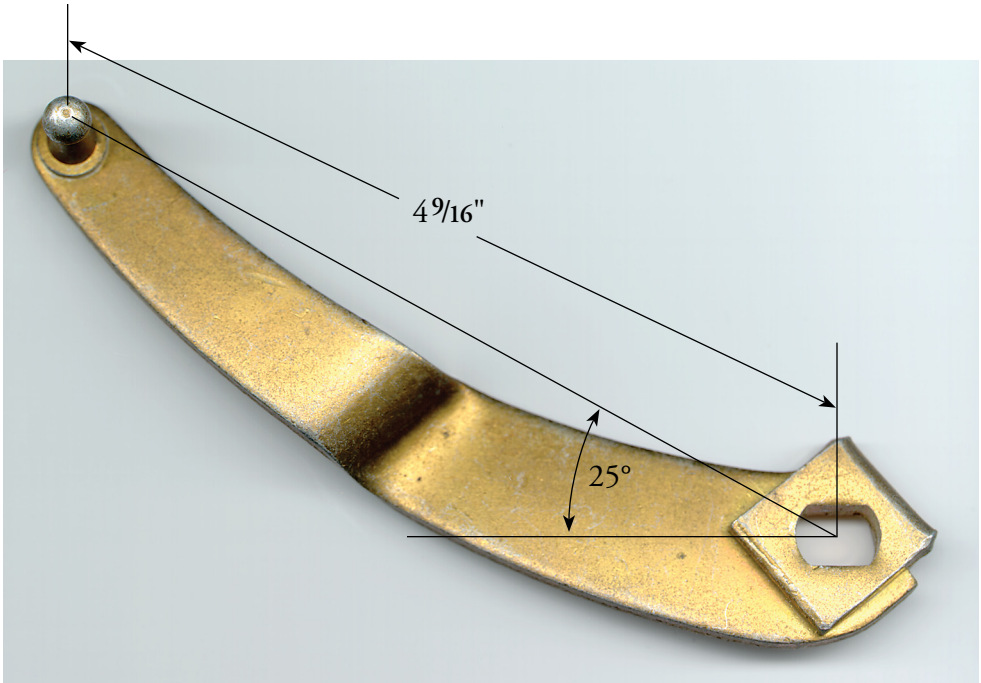
Note 5 - This is a standard clip used on the carburetor links of any 63-65 Falcon/Comet/Fairlane V8. It is considered a right-hand (R.H.) clip. Although this is the clip included in the kit, the instruction sheet actually shows the L.H. clip (See Note 6). Either can be used. It is just a matter of which way the clip will face—rearward or forward.

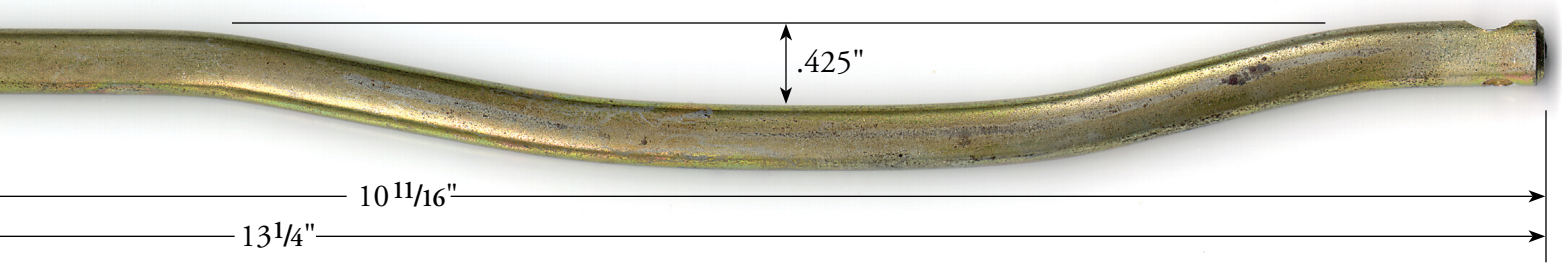
Note 6 - This is a standard clip, but considered a left-hand (L.H.) clip. It mirrors the right hand clip. These are less commonly found on Fairlanes. One place to look is at the top of a 65 Fairlane 6-cylinder kickdown rod (C4). The L.H. clip and trunnion are used there to adjust the kickdown rod length. You can also find them on the links of 61-64 Galaxies with 6-cylinders and 60-62 Galaxies with V8s.

Note 7 - Similar to stock bellcrank & bracket assembly except for changes to bolt to tri-power intake manifold.

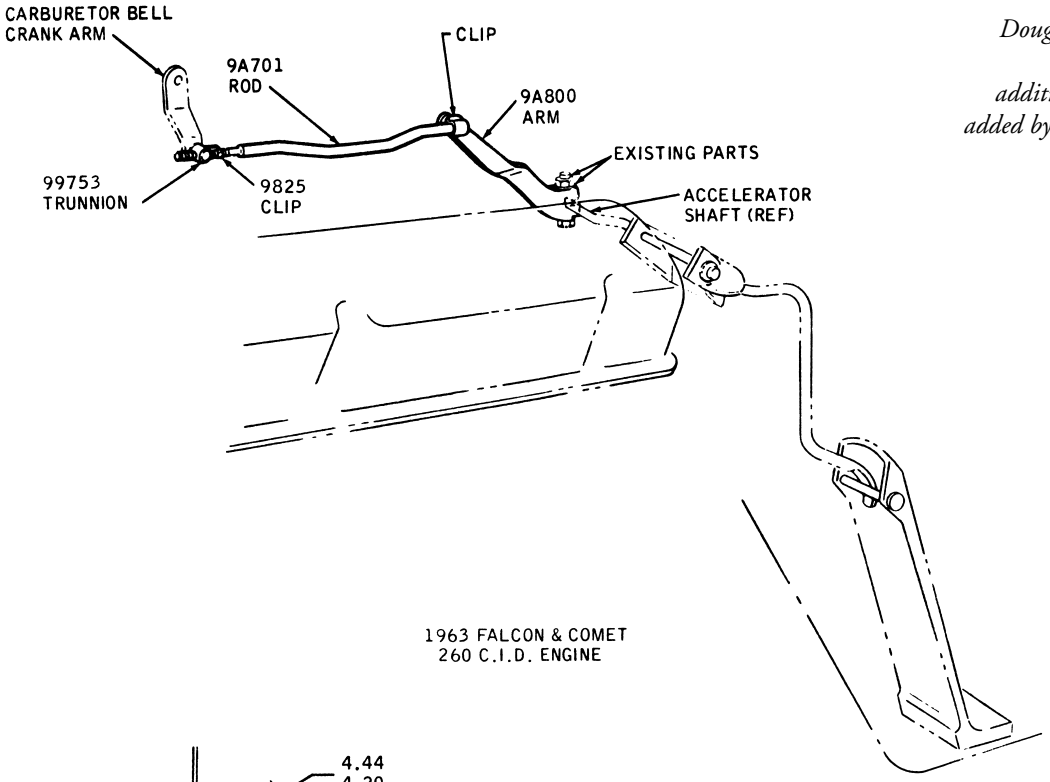


The arm and rod are connected by a ball and clip. The ball diameter measured .259" and the socket .261". The spring steel clip prevented the ball from disengaging from the socket under normal operations. The ball was secured to the arm by swaging.

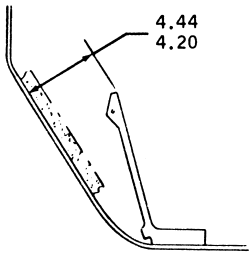


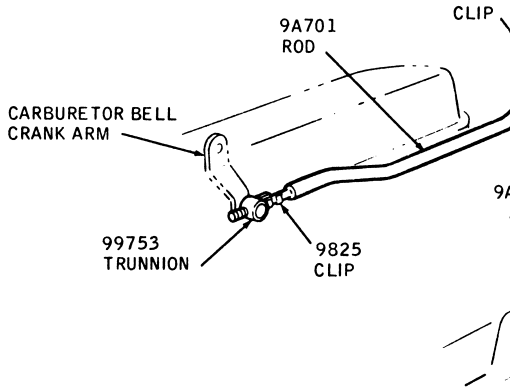
*(Instruction Sheet courtesy of Ford Motor Company & Doug Everstine with additional notes added by FCA Editor)*




1963 FALCON & COMET
260 C.I.D. ENGINE

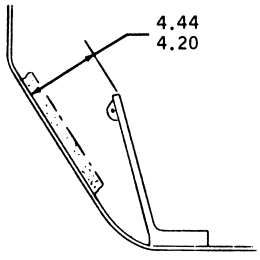



ADJUST ROD ASSY (9A701) TO
PRODUCE PEDAL HEIGHT SHOWN

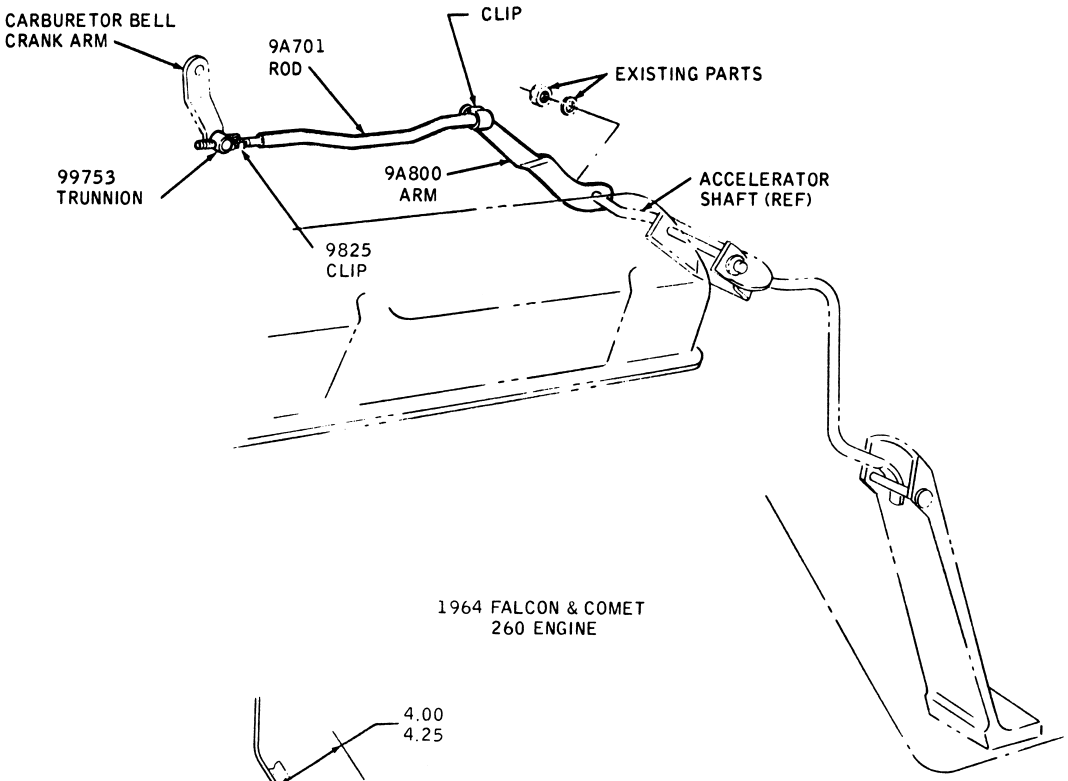



NOTE: DEPRESS ACCELERATOR FOOT PEDAL TO FLOOR & CHECK THAT THROTTLE PLATES ARE IN WIDE OPEN POSITION. ADJUST LINKAGE IF NECESSARY.

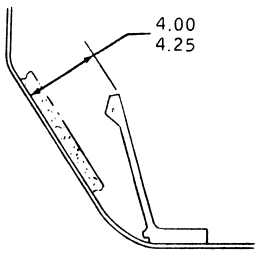
TO BE USED WITH STANDARD TRANSMISSIONS ONLY



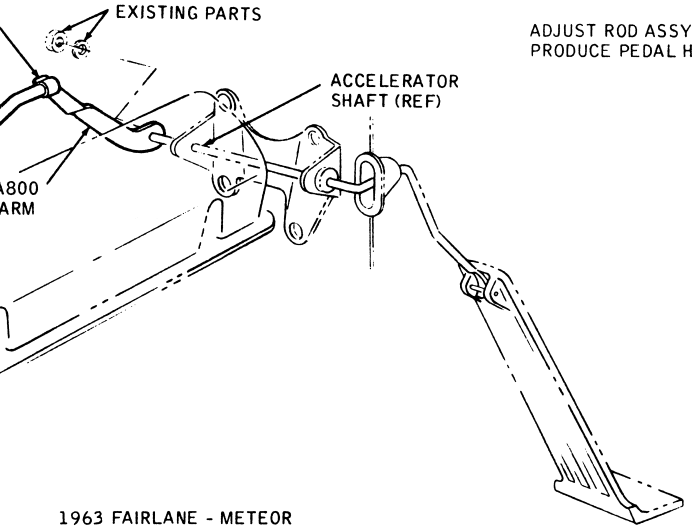

ADJUST ROD ASSY. (9A701) TO
PRODUCE PEDAL HEIGHT SHOWN




1964 FALCON & COMET
260 ENGINE




ADJUST ROD ASSY (9A701) TO
PRODUCE PEDAL HEIGHT SHOWN




1963 FAIRLANE - METEOR
1964 FAIRLANE
260 OR 289 C.I.D. ENGINE

CARBURETOR IDENTIFICATION

289 C.I.D.

PRIMARY – (1 REQD.) – LIST #2881 (C4AF-9510-U)
SECONDARY – (2 REQD.) – LIST #2882 (C4AF-9510-V)

260 C.I.D.

PRIMARY – (1 REQD.) – LIST #2867 (C4GF-9510-H)
SECONDARY – (2 REQD.) – LIST #2868 (C4GF-9510-J)

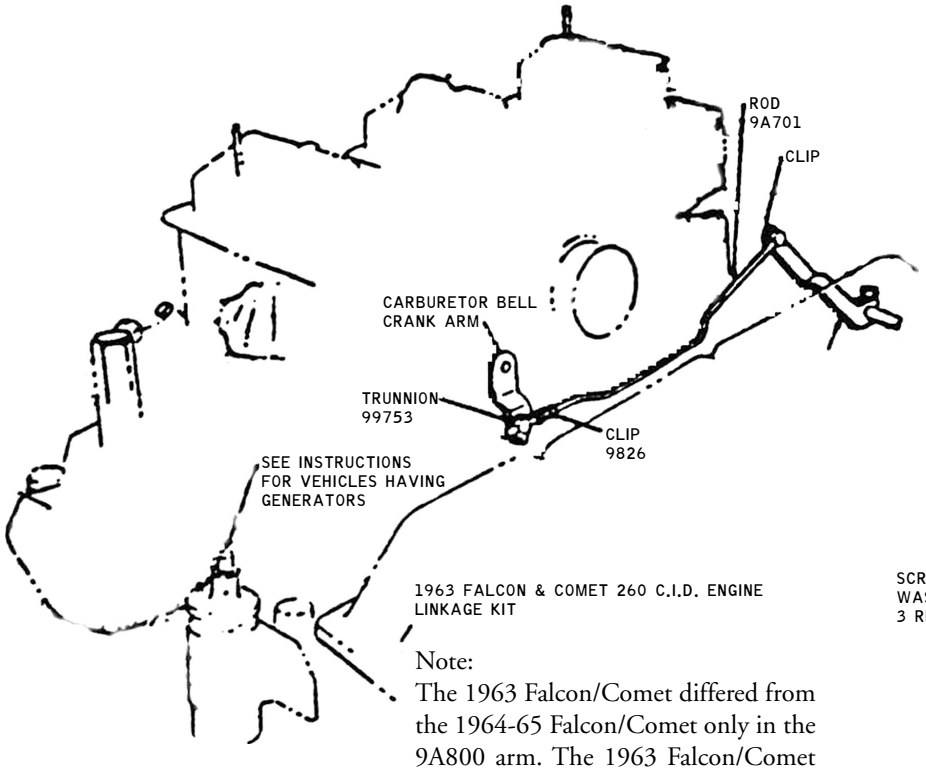
Note:
An error on the instruction sheet was corrected on this copy, which listed the C4GF-9510-J carburetor as C4GF-9510-V.



I. S. 1298

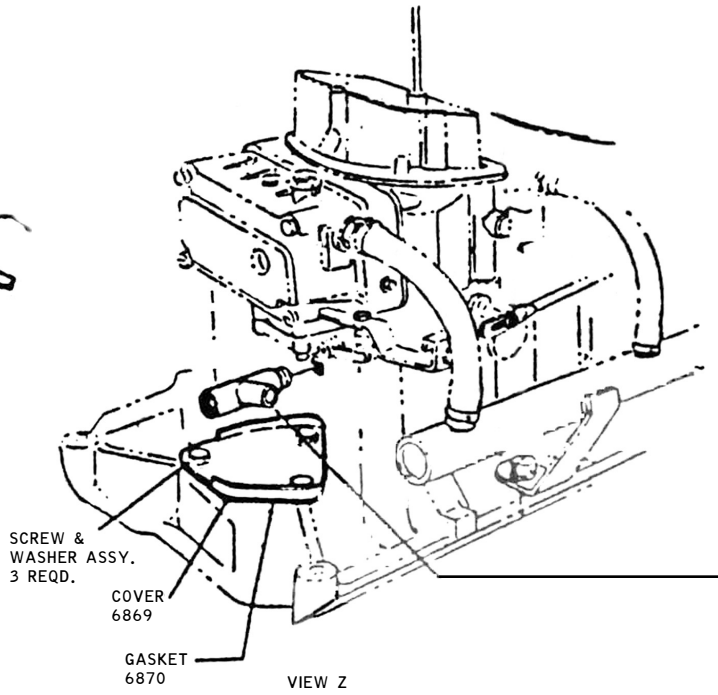
# INSTALLATION - KIT - HIGH PERFORMANCE ENGINE

FORD




1963 FALCON & COMET 260 C.I.D. ENGINE
LINKAGE KIT

Note:
The 1963 Falcon/Comet differed from the 1964-65 Falcon/Comet only in the 9A800 arm. The 1963 Falcon/Comet used an arm that clamped to the gas pedal shaft. The 1964-65 Falcon/Comet used an arm that bolted to the gas pedal shaft just like the 1963-65 Fairlane.




VIEW Z

CARBURETOR IDENTIFICATION

289 C.I.D. ENGINE
PRIMARY — 1 REQD. — LIST #2861 C4AF-9510-U
SECONDARY — 2 REQD. — LIST #2862 C4AF-9510-V

260 C.I.D. ENGINE
PRIMARY — 1 REQD. — LIST #2861 C4GF-9510-H
SECONDARY — 2 REQD. — LIST #2862 C4GF-9510-J

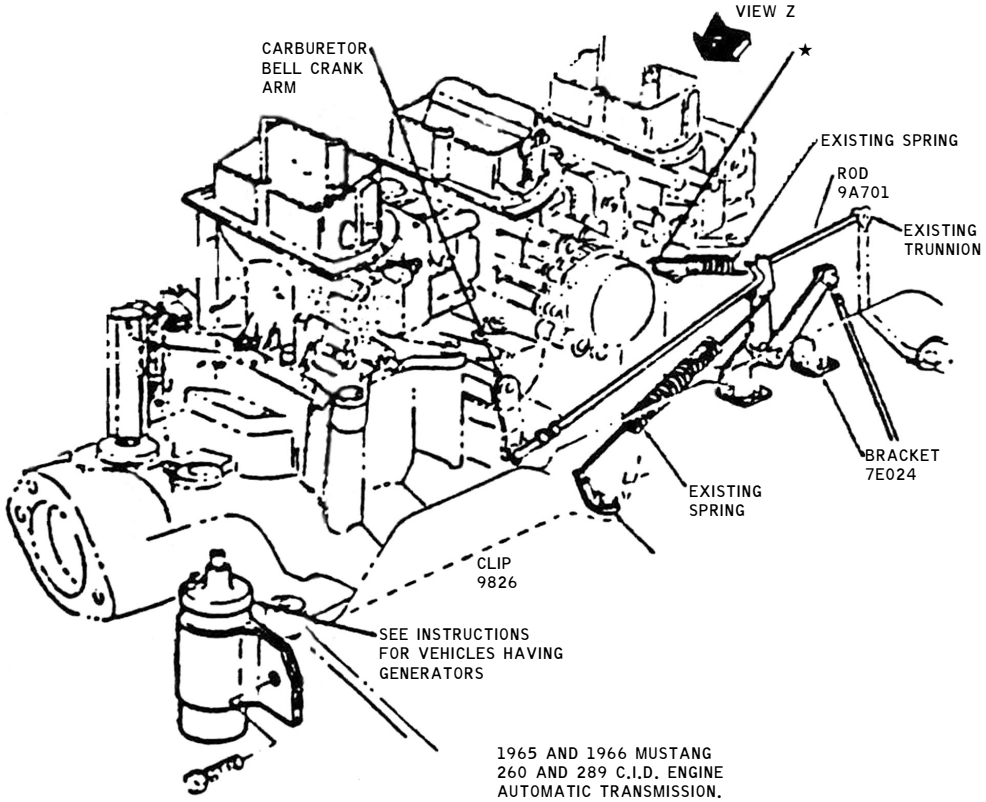
NOTE: DEPRESS ACCELERATOR FOOT PEDAL TO FLOOR AND CHECK THAT THROTTLE PLATES ARE IN WIDE OPEN POSITION. ADJUST LINKAGE AT THE CARBURETORS IF NECESSARY.

REFORM EXISTING DISTRIBUTOR VACUUM ADVANCE TUBE AND GAS LINE TO SUIT. THE GAS LINE WILL HAVE TO BE CUT AND FLARED USING THE EXISTING FLARED FITTING.

VEHICLES HAVING GENERATORS: REMOUNT THE COIL ON THE LEFT FRONT OF THE ENGINE BLOCK AS SHOWN IN THE ILLUSTRATION. IF THE VEHICLE HAS POWER STEERING, MOUNTED AT THAT POSITION, DISCARD EXISTING P/S MOUNTING BOLT AND MOUNT THE COIL WITH BOLT 3/8-16 X 1-5/8 LONG OR EQUIVALENT AND SPACER NO. 370770-S .4 I.D. X .8 O.D. X 1/2 LONG OR EQUIVALENT. IF VEHICLE DOES NOT HAVE POWER STEERING, MOUNT THE COIL DIRECTLY TO THE BLOCK WITH BOLT 3/8-16 X 1/2 LONG, OR EQUIVALENT.

★ BRACKET TO BE RELOCATED ON FRONT LEFT HAND MOUNTING BOLT OF REAR CARBURETOR.

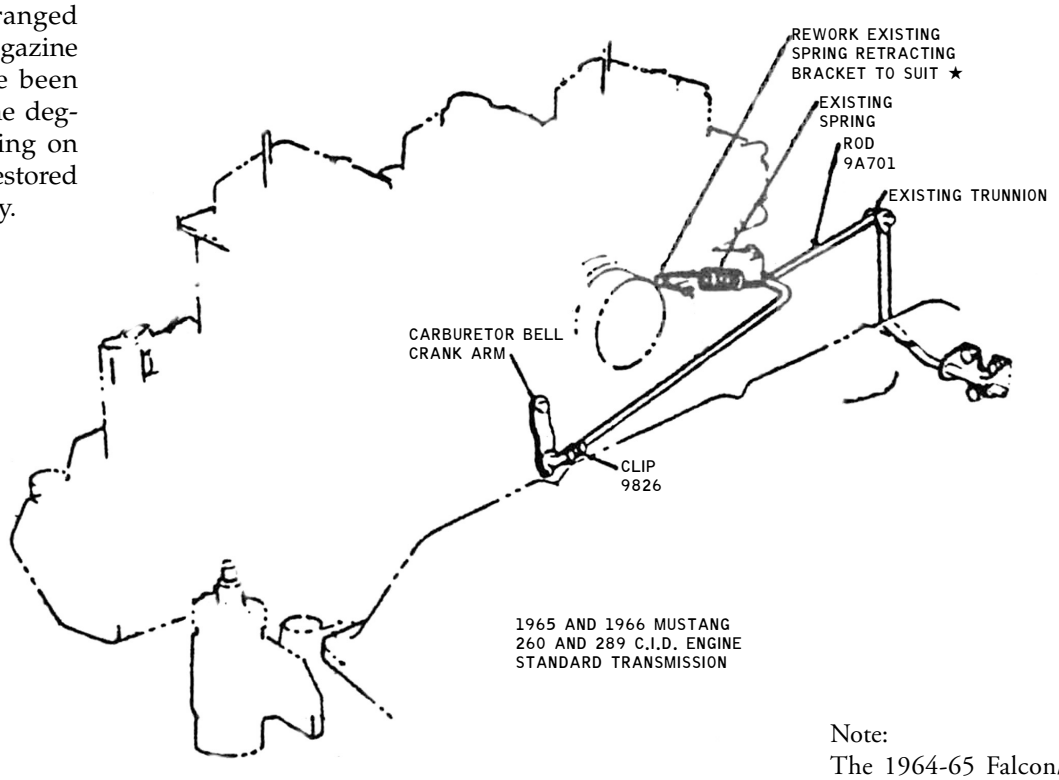
FOR CARS HAVING POWER STEERING WITH THROTTLE ADVANCE IT WILL BE NECESSARY TO DISCONNECT AND DISCARD THE THROTTLE ADVANCE TUBE AND PLUG THE REMAINING HOLE IN THE POWER STEERING PUMP WITH RETAINER NO. KD33627-A, 1"-14 N.S. x 5/8 LONG OR EQUIVALENT.




1965 AND 1966 MUSTANG
260 AND 289 C.I.D. ENGINE
AUTOMATIC TRANSMISSION.
LINKAGE KIT NO. C4RA-9B843-E
USED WITH HIGH PERFORMANCE

Note:
C4RA-9B843-E believed to be C5ZZ-9B853-A. It is shown in the upper right corner of the facing page.

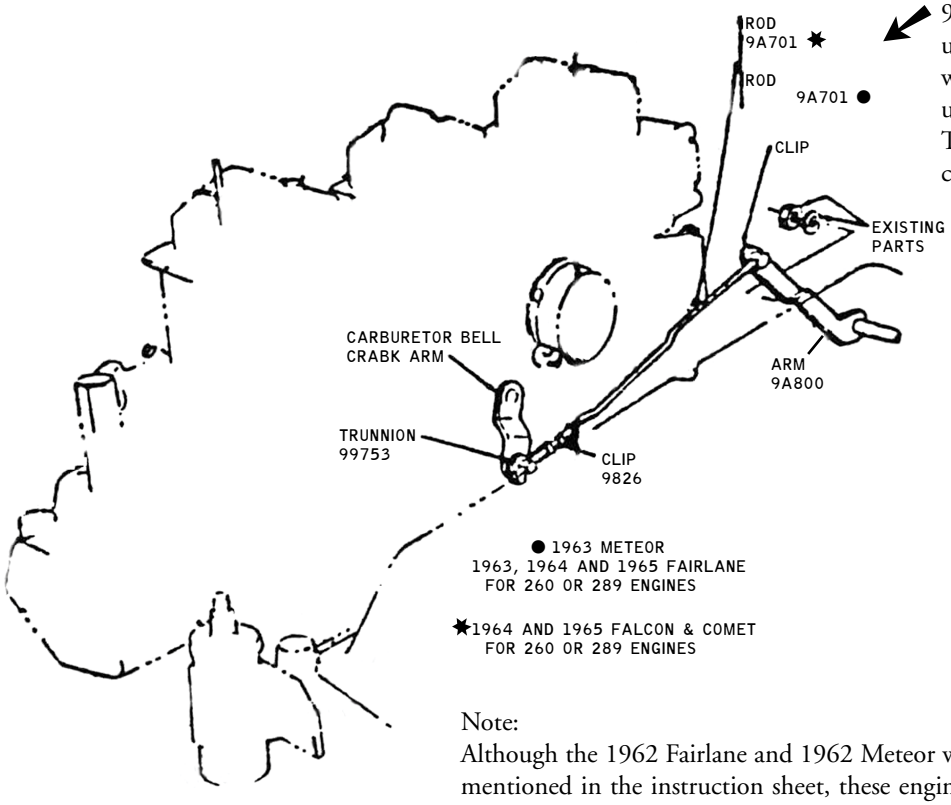
Illustrations have been rearranged slightly so as not to cross the magazine center seam. Illustrations have been digitally edited to clean up some degradation due to repeated copying on copy machines. Text has been restored electronically for good readability.




FOR VEHICLES HAVING EMISSION HOSE FROM RIGHT HAND ROCKER COVER, REMOVE PLUG NO. 372175-S FROM REAR MANIFOLD AND OBTAIN AND INSTALL PART NO. 380006-S AS SHOWN. ATTACH EMSSION HOSE TO TURNED DIAMETER ON FITTING. IF NO OTHER VACUUM SOURCE IS REQUIRED ASSEMBLE THE 372175-S PIPE PLUG TO THE END OF THE 380006-S FITTING.

1965 AND 1966 MUSTANG
260 AND 289 C.I.D. ENGINE
STANDARD TRANSMISSION

Note:
The 1964-65 Falcon/Comet differed from the 1963-65 Fairlane/63 Meteor only in the 9A701 rod. The Falcon/Comet used a C3AE-9A701-A rod, whereas the Fairlane/Meteor used a C3RA-9A701-A rod. The instruction sheet was confusing.




● 1963 METEOR
1963, 1964 AND 1965 FAIRLANE
FOR 260 OR 289 ENGINES

★1964 AND 1965 FALCON & COMET
FOR 260 OR 289 ENGINES

Note:
Although the 1962 Fairlane and 1962 Meteor with 260 V8s are not mentioned in the instruction sheet, these engines were no different than their 1963 counterparts, and the same parts can be used to install tri-power in these vehicles.

Ford®



I.S. 1505

INSTALLATION - KIT - LINKAGE
HIGH PERFORMANCE - 3-2V

7-14-65

# Small Block V8 Tri-Power—Part 2

*Fabrication*

**by Bob Mannel**

In the last *Fairlaner*, I showed the tri-power accelerator kit for the 1963-65 Fairlane/Meteor (also applicable to the 1962 Fairlane and Meteor). These kits are rare and currently not in reproduction. That might change, but if it doesn't, you can fabricate one for yourself. I will show you how. I am not a machinist and my fabrication was not what I would call professional. However, it shows what is possible. With more professional tools and skill there is no question you could improve upon the one I made. With the application of Eastwood Company's new golden cad system (a painting solution to mimic gold cadmium plating) you can make quite a presentable kit.

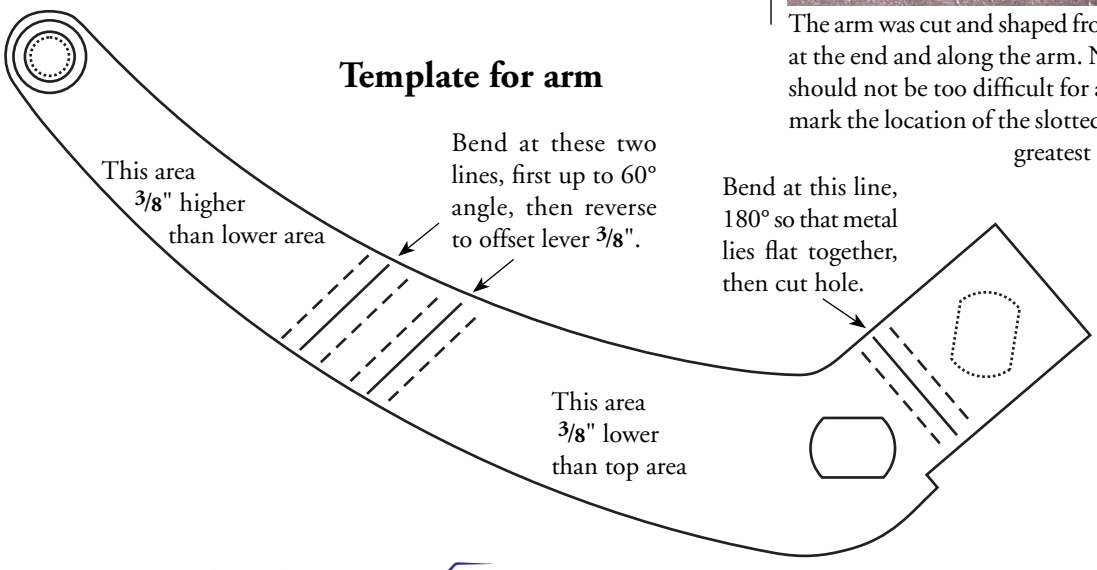
Of course, you can choose to plate the pieces instead. In exploring the plating option, I came across this little bit by Ted Mooney, P.E. on *finishing.com*. "By 'gold cadmium dichromate' I'm pretty sure you're referring to cadmium plating followed by a gold tone chromate conversion coating. Unlike in the past, today cadmium is reserved for essential uses because it is a chronic cumulative poison like mercury and lead. I don't think aesthetic authenticity is really an essential use. So for brackets and such, I'd be very surprised if the judges insist on cadmium plating. Zinc plating with gold dichromate will look very similar and should suffice."

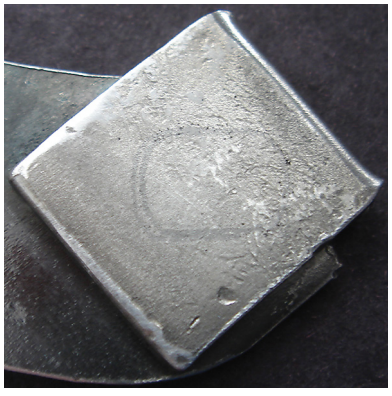
For the arm, I developed the template below so that I could cut the piece out of 11-gauge flat steel plate. This gauge steel is .120" thick, although it is said that the mills tend to be on the thin side of tolerances. The piece I used measured .116". The template was cut out and laid on top the metal plate. I used a pointed black marker to draw along the edge, then used a hand-held jig-saw for making a rough cut. Final shaping was done with a wheel grinder. It helped to have a pan of water close by to cool the piece as the grinding went on. The grinding marks were cleaned up with various files (flat, round, triangular and square).

The next job was to bend the metal. The template solid lines across the piece indicate where the bends should be made. The dashed lines gave me an idea of where the bend should start and end. To make the 180° bend, I mounted the piece in a vice and heated the area of the bend til cherry red. A large crescent wrench was used to start the bend. Then the piece was bent to 90° using a hammer. It was reheated and, using two crescent wrenches, the bend was increased to about 135°. Heating once again, the final bending was done with a hammer so that the metal was completely flattened over without an appreciable gap between the two pieces.

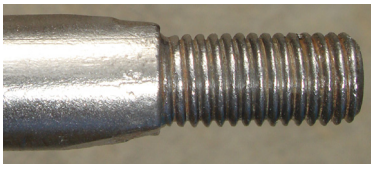
The next two bends were for the S-shape in the arm. I have to confess that it took three tries before the S-shape was acceptable. The bends are fairly tight and close. The idea is to displace the arm tip 3/8". I did this without heat, using a vice as a holding fixture. I placed a 1"x 1/4" stock steel rod against the arm to use as a driver and smacked it with a hammer several times to bend the metal over about 60°. As I said, I am no machinist. (Wish I was.) The arm was remounted and the second 60° bend was made. The difficulty was getting the 3/8" offset. Twice I had to flatten the metal and start over again because I overshot the offset. Not particularly good for the metal, but this was just a feasibility study to see if the piece could be made from the template. The third time I met with better success, although I groaned at my metalworking shortcomings. (It would not the the last time I groaned, either.)

The arm was cut and shaped from 11-gauge flat steel plate. Bends were made at the end and along the arm. Not exactly up to professional standards, but should not be too difficult for a machinist to do. The template was used to mark the location of the slotted hole. Cutting the slotted hole was to be my greatest challenge, although it shouldn't have been.



Now I needed to cut the hole for the gas pedal rod. All I can say is, go slow here. I drilled a series of close holes, then knocked the center piece out. In retrospect, I would start with a 1/4" hole and file or die grind the rest out. It took a couple of hours and I was not particularly happy with the hole. I made it a little larger than I wanted as a result of having to correct an error (ugh) while trying to get the hole's angle just right. It will work, but I should have done better. The danger of the hole being too big is that the nut on the gas pedal rod could bottom out before the arm wedges tightly on the pedal rod. Having a gas pedal rod nearby is helpful.



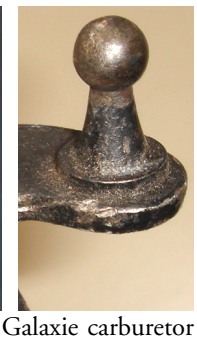
The slotted hole must engage the gas pedal rod, but not deeply enough to bottom out the washer and nut.

Next was the hole for the ball at the other end. But, before that could be done, I had to have a ball to install. There are several options. You can remove a ball from a 1965 or later Galaxie carburetor throttle shaft. These cars used a cable throttle and the ball will work just fine. There are some balls which have a threaded post for a nut. Club member Michael Plunkett let me know that these threaded balls are currently available from Club Car under the part number 1010954 and sell for about $1.68. Seems these are used on G&E golf carts. All these balls have a head diameter of 1/4" (0.250") and will work. But, I had noticed that the ball on the original kit looked just like the ball used on the 1964-65 Falcon/Comet bellcrank assembly. This ball was lightly welded or brazed on. So, I thought I would try this option.

Pete Girard of the Comet East Club had a scrap piece of an original 1965 Comet bellcrank assembly with a good ball and graciously donated the piece for this project. I used a Dremel grinder equipped with a thin grind wheel to grind the weld down around where I thought the ball's center post would be (it was not where the weld made it seem to be—see picture below). Next I used a drift to tap the post and crack any remaining weld. After a few whacks, the ball shot off the lever. I measured the hole left behind and found it to be 0.195"-0.200" in diameter. So I decided I would drill the hole in my arm a little smaller and see if I could wedge the ball's post into my new hole.

Attachment of the ball on the 65 Comet bellcrank shown above left. The dimple does not mark the center of the post. It appeared to be the impression left by the welding or brazing operation. The true center is more toward the left (centered on the extension). The weld material around the ball post was ground down, then the ball was driven free.

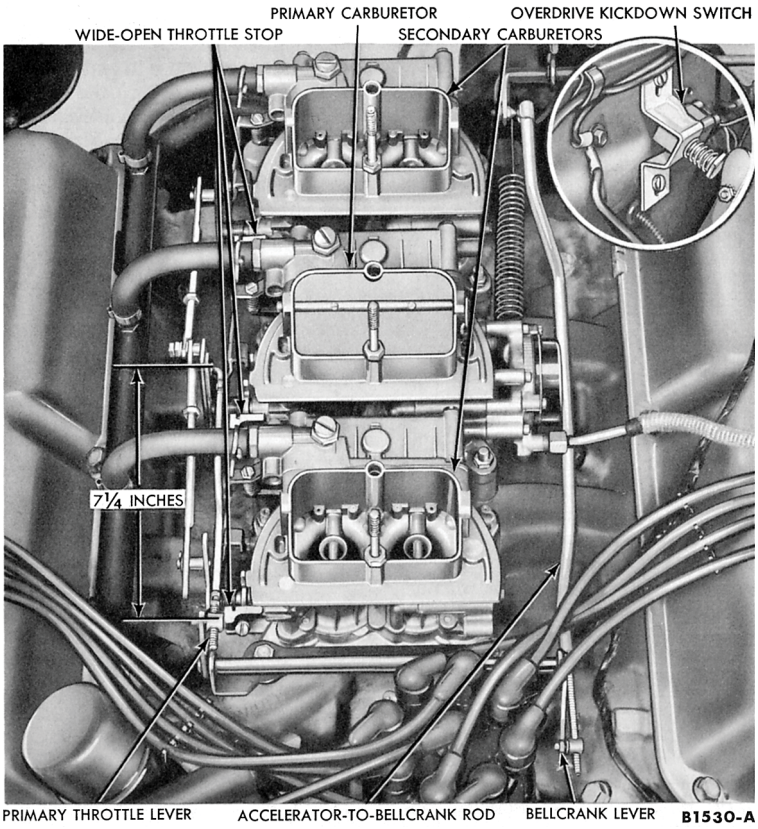
I used the template to locate the position of the hole's center on my new arm. As a double check for proper position, you can lay your calipers between the center of the slotted hole and the center of the hole on the opposite end. The distance should measure 4.55". I drilled the hole on a drill press using a 3/16" drill bit. This gave a diameter of about 0.188". I next used a reamer to enlarge the hole slightly on the ball side. Then I pressed the ball onto the arm using a vice. The rear of the arm had to be supported with a receiver socket as the ball's post extended slightly beyond the back of the arm. The ball was well wedged into the arm hole. However, I could further secure it by swaging, or brazing.



Possible ball sources, from left to right: 65 and later Galaxie carburetor throttle shaft or other cable-operated carburetors, threaded stud available in aftermarket, 64-65 Falcon/Comet link between the gas pedal rod and vertical link connecting to the accelerator bellcrank assembly, and 64-65 Falcon/Comet accelerator bellcrank assembly (the one used in this project).

The 65 Comet ball has been pressed into the slightly tapered hole for a forced fit. The bottom of the post protruded from the back of the arm by about a sixteenth of an inch. The post could be swaged to spread the metal more tightly into the hole, or it could be brazed to the arm. In this case, brazing would give a better appearance.

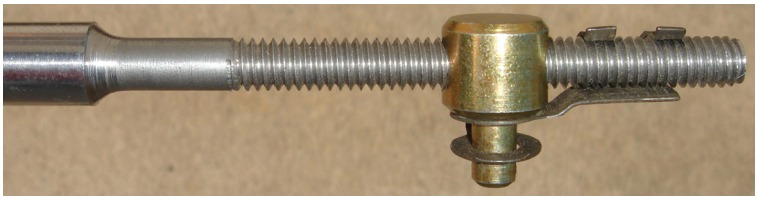
This completed the arm. Next was the rod. I noted that in the shop manual for the Galaxie, the big-block with tri-power used a rod that looked very similar to the one in the Fairlane kit, only



This illustration is from the 1962 Galaxie shop manual. I noted that the rod to the carburetor looked similar to the Fairlane rod, but much longer.

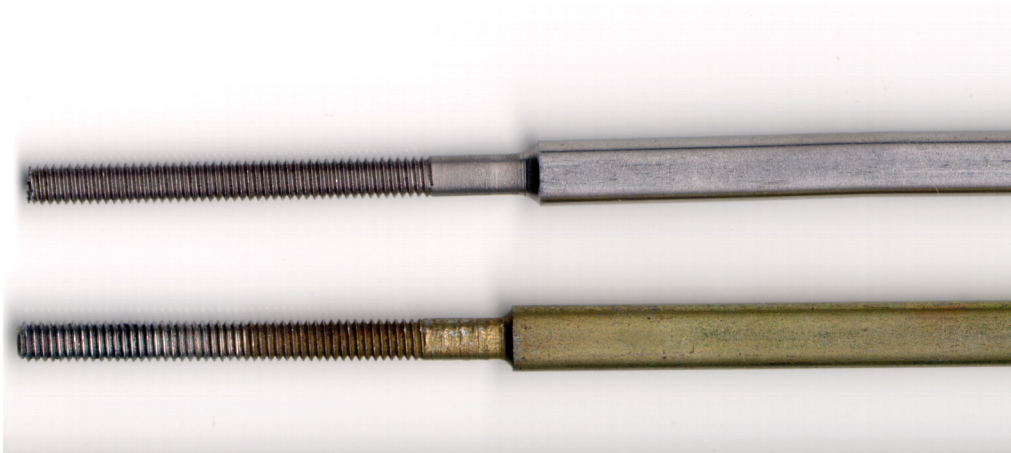
it was longer. Better yet, the Galaxie tri-power rod was available in reproduction from Carl's Ford Parts (*www.carlsfordparts.com*). He has it listed under Linkage, 390-406, "3x2 Accelerator Rod" for $85. It included the trunnion and clip that held the ball. My thought was that perhaps this rod could be modified for use as a 289 rod. It actually worked out rather well.

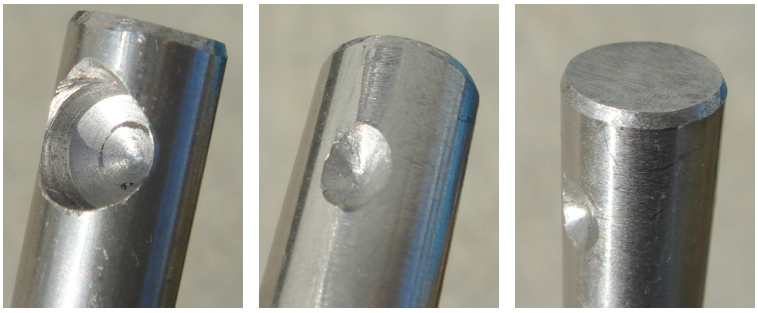
I kept the threaded machined end and took out the first bend


Threaded end of reproduction Galaxie rod. Trunnion clip has been added.

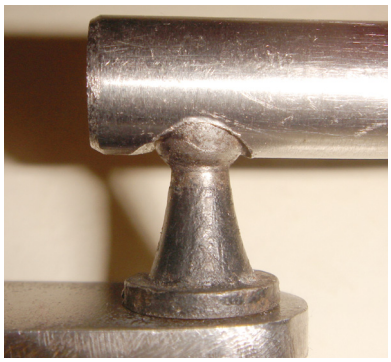
in the rod. I kept the second bend but took some of the bend out. Then I put the rod in a vice and made the remaining bends to match the Fairlane rod. Bending was either by hand, or with the assitance of a wood block and large hammer. After about an hour's work, I had a shape reasonably close to matching the Fairlane rod.

At right are actual full-size scans of the modified Galaxie rod above the actual Fairlane rod. It shows that it would not be very difficult to reproduce the Fairlane rod.




The socket hole must be sized according to the ball diameter. A dimple on the opposite indexes the clip (right). A file was used to get a flat end and beveled edge.

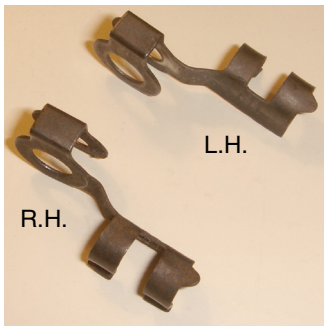
I then cut the rod 13½" from the threaded end (to be further trimmed later) and center punched the ball socket 12 15/16" from the threaded end. A good deep indentation with the center punch was necessary to provide a good bite for the drill bit. Too small of a punch, as I would find out, would allow the drill bit to track out of the hole. I knew I would have to keep everything very steady to drill this hole. There was not much room for sloppy positioning and the hole needed to be straight and true. I used a drill press and fixture which was actually a small vice used with a drill press platform. I anchored this vice to the drill press platform with a couple of heavy-duty C-clamps. With everything steady, the drilling went more smoothly than I expected. I used a ¼" drill bit since the ball I was using measured 0.249"-0.251" in diameter. (The Fairlane kit ball was actually about 0.259" and socket 0.260".) I regularly checked the depth of the hole by inserting the ball. The ball should be exposed from the hole just enough so that the clip will make contact with it.

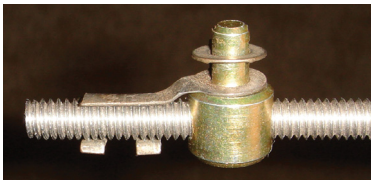

This is about the right depth for the ball to engage the socket.

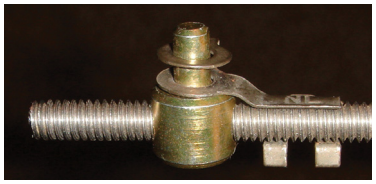
Once the hole was finished, the rod was turned over. A center punch was made directly behind the ball socket hole where a slight dimple was then made with the ¼" drill bit. This dimple helps retain the clip, which includes a depression just for this purpose. I installed the clip and used it to precisely mark the end of the rod. The rod extends beyond the clip 0.03"-0.05". I then cut the rod

with a hacksaw and dressed the cut with a file to give it a finished look. The edges were then beveled to eliminate the sharpness.

The final item to discuss is the clip that holds the trunnion to the crossunder linkage. There are two clips. One is called a right hand (R.H.) Rod End Clip (B7A-9825-B, marked 4R), and the other is a left hand (L.H.) Rod End Clip (B7A-9826-A, marked NL). They mirror one another. The kit includes the R.H. clip. To use this clip, it must clip forward. The L.H. clip can also be used, but must latch aft. The R.H. clips are quite easy to find as all the 1962-65 Fairlane V8s used them. The L.H. clips can be found on the top of the 1965 Fairlane 6-cylinder kickdown rod (for C4), on the accelerator linkage of 1960-62 Galaxies with V8s, or 1961-64 Galaxies with 6-cylinders. The use of one clip over the other might depend on where your trunnion is positioned on the threads when final adjustments are made, so best to have one of each.





The R.H. clip attached forward on the rod (left), while the L.H. clip can also be used if attached aft.The open part of the clip must face upward to mate with the tri-power crossunder linkage.

So, there you have it—a solution to installing tri-power on your early Fairlane V8. Hopefully, some enterprising machinist might reproduce these pieces with much higher quality that I could achieve. But, in the meantime, if you want to install tri-power and need an accelerator kit now, you can make it yourself with a piece of flat steel, Carl's Ford Parts' big-block tri-power rod, and some original Ford pieces—and lots of patience!.