Crosley Hop Up

RETROFITTING AN AUSTIN HEALEY SPRITE CLUTCH IN A CROSLEY

BY GLEN BRYNSVOLD

This subject was originally addressed in TBT Vol 1, No 1, Winter 1986 by Dr. Bob Graham, C.E.S. (Crosley Engine Surgeon). Dave Brodsky pointed out this very helpful article to me and referred me to Mini Mania in Nevada City, CA for purchase of clutch parts. I purchased CLUTCH KIT 948 INLINE, item number COM701-KIT, which included clutch plate, pressure plate, and throwout bearing. This kit purchase was a better price than the clutch plate and pressure plate as separate parts.

Glen Brynsvold's Crosley-powered Skorpion

Since my recently installed Sprite clutch made my Crosley such a pleasure to drive, Rick Alexander and Tim Foster encouraged me to submit a brief tech article for the TBT. That suggestion has merit for two reasons; 1) the first article was in the first TBT (1986) and is not readily known or available to all current Crosley Club members, and, 2) I have reason to believe minor changes have been made to the current Sprite clutch parts which now have to be dealt with when using them in a Crosley. Below is the updated amendment, which covers these changes. Bob Graham's 1986 article is copied on the next page and it displays a broader base of Crosley parts knowledge than I could cover with my one-time Crosley clutch job, and is therefore beneficial to retain in its entirety. The pages following the article reprint contain the photos and descriptions to illustrate what is covered in the amendment.

Glen Brynsvold's Update Amendment

When Rick Alexander and Tim Foster requested a tech article with photos, I had already completed my clutch job—sorry, I didn't think of taking pictures as I installed the clutch. However, their nudge got me back under the car for a few shots of the installed clutch that may be helpful. These can be viewed on the page following Bob's original article. Just a note: I use the term flywheel housing while Bob Graham's uses the term "cover" (as in "3. Cover - no change.")

Trial fit-up of parts revealed interference between the flywheel housing, and the hold down nuts for the clutch fingers. The interference region of the flywheel housing was the two thickened sections where the throwout fork hinge pin is mounted. To assure adequate clearance, you must grind away the interference region to allow for the clutch finger hold down nuts which move farthest from the flywheel when the clutch is disengaged (clutch petal fully depressed). See photos 1 through 3. Bob Graham's item, "5. Sprite pressure plate" — regarding clutch finger groove as a bench mark for clutch finger shortening."

The three clutch finger tips need only minimal grinding (shortening) to clear the transmission nose piece that the throwout bearing rides on. Grinding back to leave only 1/8 inch groove would shorten the fingers too much and result in unfavorable interface of the clutch finger with the throwout bearing (jamming the throwout bearing into the finger tip). See photos 3 and 4.

By Dr. Bob Graham, C.E.S.
(Crosley Engine Surgeon)

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Modifications to install a Sprite clutch

If you are tired of the marginal Crosley clutch, substitute the superior Austin Healy Sprite clutch from the bugeye or Mark II model. The following modifications are required:

1. Crosley throwout bearing- machine the step flush to get enough freeplay (drawing #1)

2. Transmission- no change

3. Cover- no change

4. Throwout fork- Grind both side pieces and center piece on the end facing pressure plate (drawing #2) in order to miss the spring towers on the pressure plate and the hold down nuts for the clutch finger

5. Sprite pressure plate (stock six-spring type)- remove the ring and springs for the carbon throwout bearing. Grind the fingers back so that only 1/8th inch is left of the groove (drawing #3) and smooth out corners

6. Sprite clutch plate- the Crosley clutch plate can be used but the Sprite is recommended because of the torque springs in the plate. No modifications to clutch plate required

7. Flywheel- take pressure plate and flywheel to a good machine shop and get the holes drilled and tapped in the flywheel and the two locating dowel pins installed (these insure that the pressure plate will be properly centered

Some flywheels are not counterbored for the flywheel to crankshaft mounting bolts. Add the counterbore if required, and counterbore .750 diameter by .125 deep the three holes in the flywheel.

Grind down the heads of the flywheel to crankshaft bolts so they will clear the torque springs in the clutch plate. Allow enough extra clearance to compensate for clutch wear. The bolts must be shortened so they are flush with the end of the crankshaft flange in order to not rub on the back of the crankcase. Do not use a washer with the bolts; instead, clean and use locktite

Now you will be able to do wheelies!

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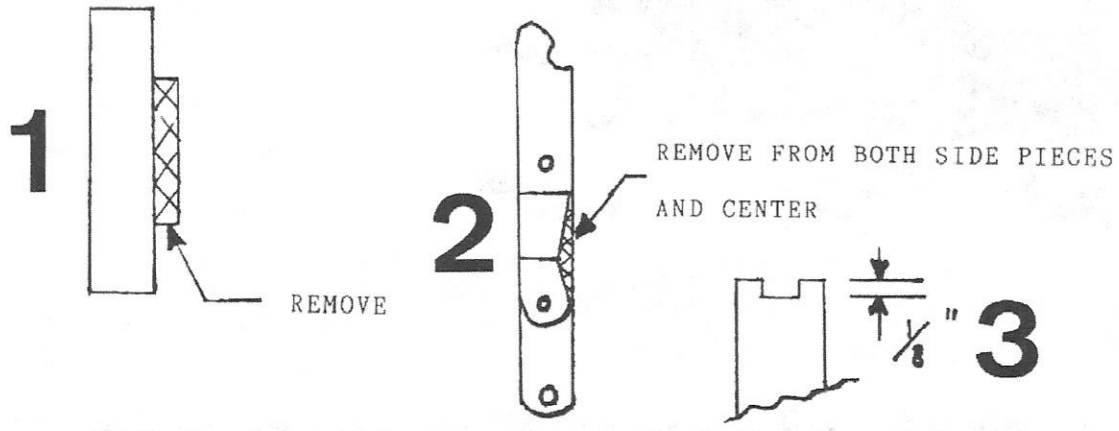

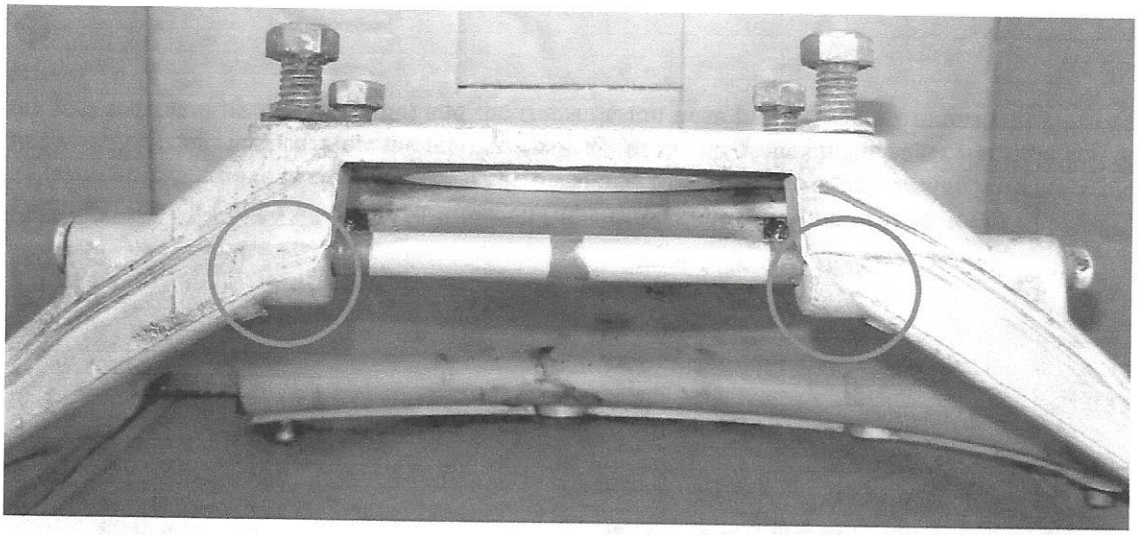

Photo #1: Unaltered Flywheel Housing (not the one installed on the following photos) Note appearance of unaltered flywheel housing; the red-circled areas are where material was removed on the installed housing.

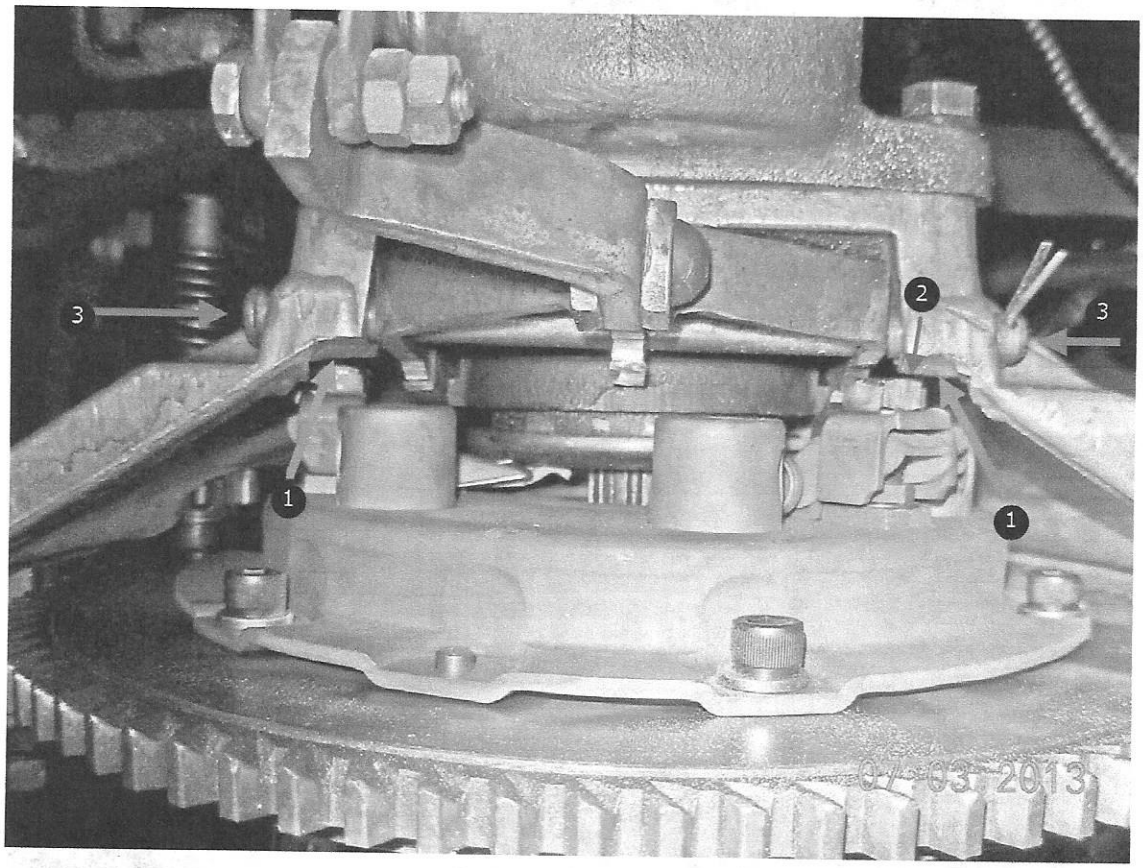

Photo #2: Clutch Disengaged #1 arrows show flywheel housing material removal area giving clearance for clutch finger hold down nuts. #2 arrow shows clearance gap between hold down nut and flywheel housing. #3 arrows point to ends of throwout fork hinge pin. Trial fit-up of parts revealed interference between the clutch finger hold down nuts, and the flywheel housing. The interference region of the flywheel housing was the two thickened sections where the throwout fork hinge pin is mounted. To assure adequate clearance, you must allow for the hold down nuts which move farthest from the flywheel when the clutch is disengaged (clutch petal fully depressed).

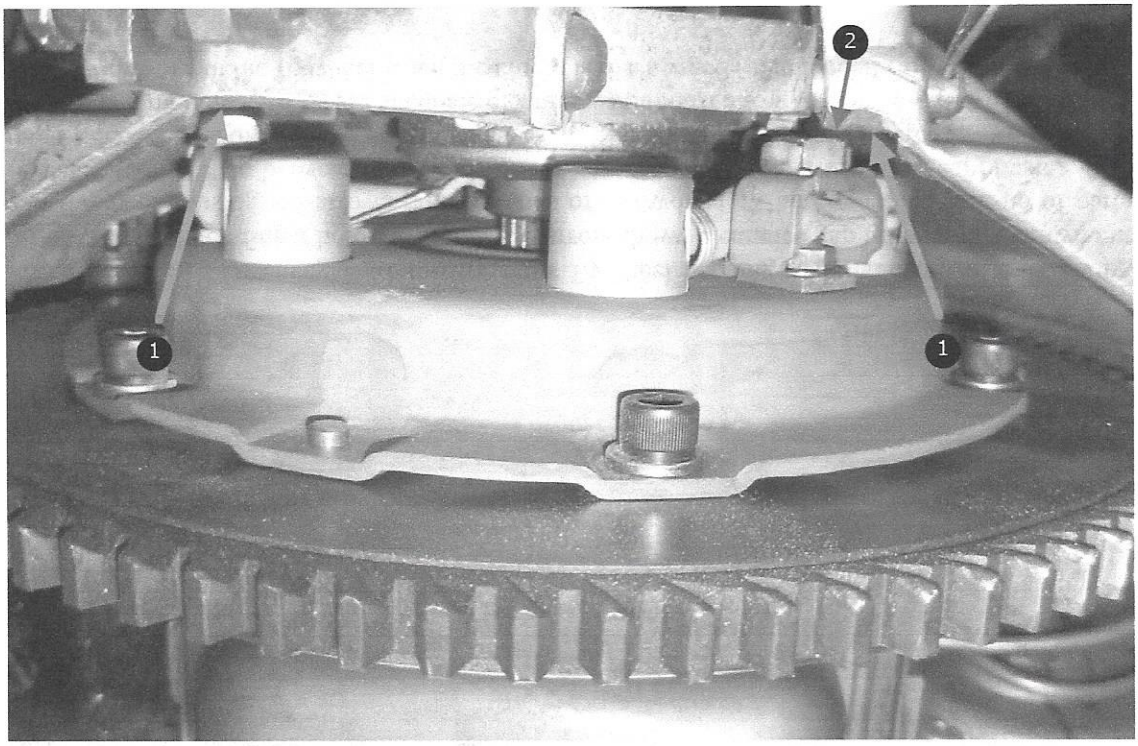

Photo #3: Clutch Engaged #1 arrows show flywheel housing material removal area giving clearance for clutch finger hold down nuts. #2 arrow shows clearance gap between hold down nut and flywheel housing. Note the slightly increased clearance gap with clutch engaged (compared to Photo #3).

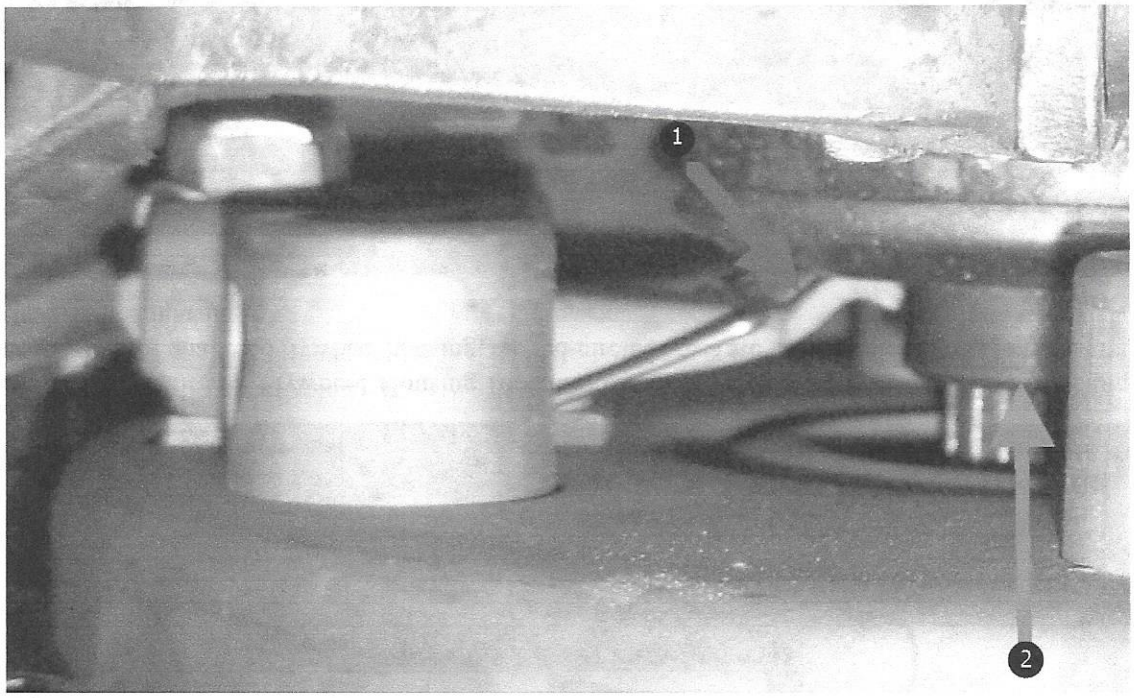

Photo #4: Clutch Finger with Clutch Engaged (magnified view of region near center of Photo #3) #1 arrow shows groove in clutch finger. #2 arrow shows forward end of transmission nose piece the throw out bearing rides on. Note the relative positions of the tip of the clutch finger (far right end of the part indicated by the #2 arrow) and the transmission nose piece (the part indicated by the #1 arrow).

A Crosley In Orleans, France

Owner & Cartoonist:
SP-6 Carl Schirmer, USA
3rd Log. Comd., Compt. Div.
APO 58, New York, N. Y.

WHEN I SPEED UP I CAN GET AWAY FROM THEM...BUT I HAVE TO GO SLOW...FOR THEY'RE ALL CURIOUS...THEY DONT BELIEVE IT'S AN AMERICAN CAR....THEY'RE ALL AROUND LIKE FLIES...THEY LOOK AT ME FROM ON FOOT, BICYCLES, MOTOR SCOOTERS AND FROM THESE FOREIGN CARS (WHICH AREN'T REALLY FOREIGN HERE!)

(Its a 1951 super Crosley Station Wagon)

Page from a 1959 Service Motors bulletin. From collection of Rick Alexander