

## MODIFIED PRODUCTION CHEVY OWNERS:

Thanks to Bob 'Quick Shift' Spar and his B&M crew you don't have to sweat shift problems any more. Now you too can come off the line at redline revs and reap the benefits of clutchless up shifting. All you need is a Clutch-Flite setup

# SUPER SWIFT CHEVY SHIFTER

BY MARTYN L. SCHORR

UNTIL THE ADVENT of the modified automatic transmission, the hot transmission setup for dragging or high-performance street operation was the super-duty three-speed (Cad-LaSalle and Packard) and a few of the early four-speeds. The people responsible for converting the rodding fraternity over to automatics was B&M Automotive in Van Nuys, Cali-

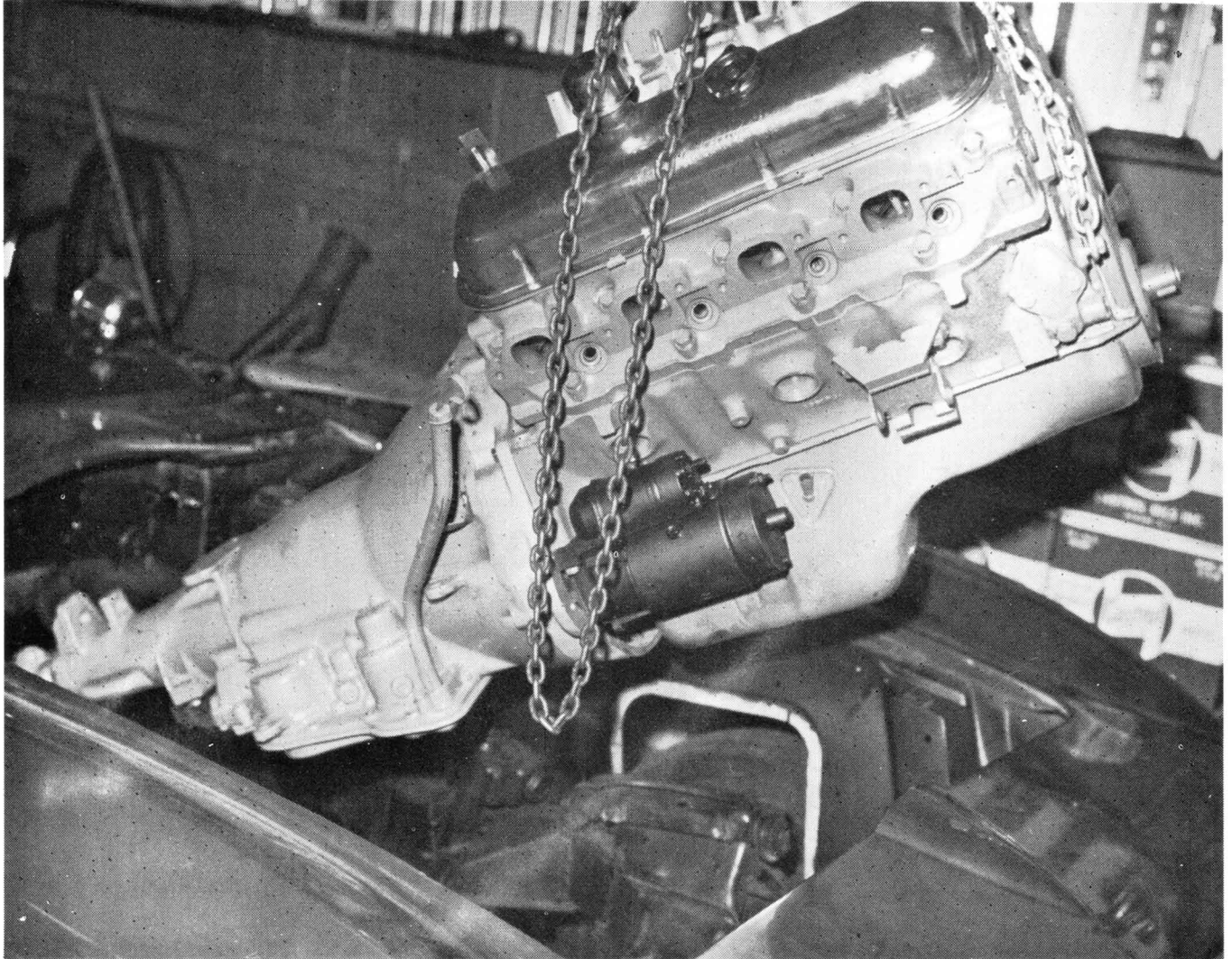
fornia. Their hot setup: The famous Hydro-Stick based on a variety of '53 to '57 GM Hydra-Matic three-speed transmissions.

Since the early days of competition auto trans setups, much has gone on both in Detroit and at B&M in the area of superior automatic shifters. Chrysler came out with its Torqueflite, GM with its Turbo-Hydro and

Ford with its C-4 and C-6 Cruis torque converter transmissions. And B&M has its versions of these transmissions for the go-fast set.

The latest and hottest of the B&M setups is the Clutch-Flite (also Clutch-Turbo units) which combines the best of two worlds: Full control off the line and clutchless up shifting. And, besides being a boss competition

Big 427 Chevy Semi-Hemi mated to a CFK-converted Torqueflite. Stock Mopar housing bolts to Chevy mill via aluminum adapter.



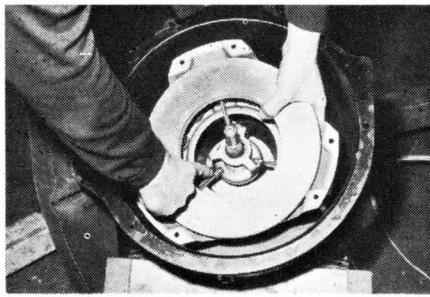
setup, it's also completely streetable (unlike many of the beefed Hydros).

If you are wondering why they bothered to combine a dry clutch drive with an automatic transmission when the standard or beefed Torqueflite has become an accepted standard, stay tuned. There's much more to this business than meets the eye.

The unit was developed because of the stall speed problems rodders were having with stock and beefed Torqueflites on the strip. Stall speed is the amount of revs you can raise with your foot in the pot, the transmission in gear and the brakes locked solidly. In a blown fuel funny car or a blown gasser, you can do well with a 2500 or 3000 rpm stall speed torque converter, because there's torque and horsepower to spare. But, a Modified Production or gas car needs the off-the-line rpm to break those big tires loose and keep the R's up. For example, a fully-prepared 427 Camaro A/MP car running 9-inch ripple-wall slicks comes out nice at almost red-line revs (over 6000 rpm). But if this same car came out of the hole at 2500 or 3000 rpm with those big tires, it would probably never recover from the super bog. And, since drop (neutral) starts have been outlawed at most tracks, automatics have no chance of making it with the unblown gas set.

Prior to the introduction of the Clutch-Flite, rodders attempted to rework torque converters to achieve a 3000-rpm stall speed without the usual drain of low end horsepower. (Most unblown gas engines haven't got sufficient low end horsepower to twist a torque converter to 3000 rpm) But these modified units slipped considerably at high rpm and efficiency and lifespan were way down.

The Clutch-Flite solved all the problems involving the use of an auto trans in an unblown gas car, and really impressed the four-speed fans who were looking to get away from the problems normally associated with manual shift cars. What the Clutch-Flite is essentially is an automatic transmission with a dry clutch setup in place of the conventional torque converter. With the dry clutch (blow-proof aluminum unit such as Schiefer is recommended) you can sit on the line with the transmission in gear and the clutch released just like with a manual shift conventional package. When the green comes on you simply engage the clutch and you're out of the gate like a stick machine. From this point on the clutch pedal is not

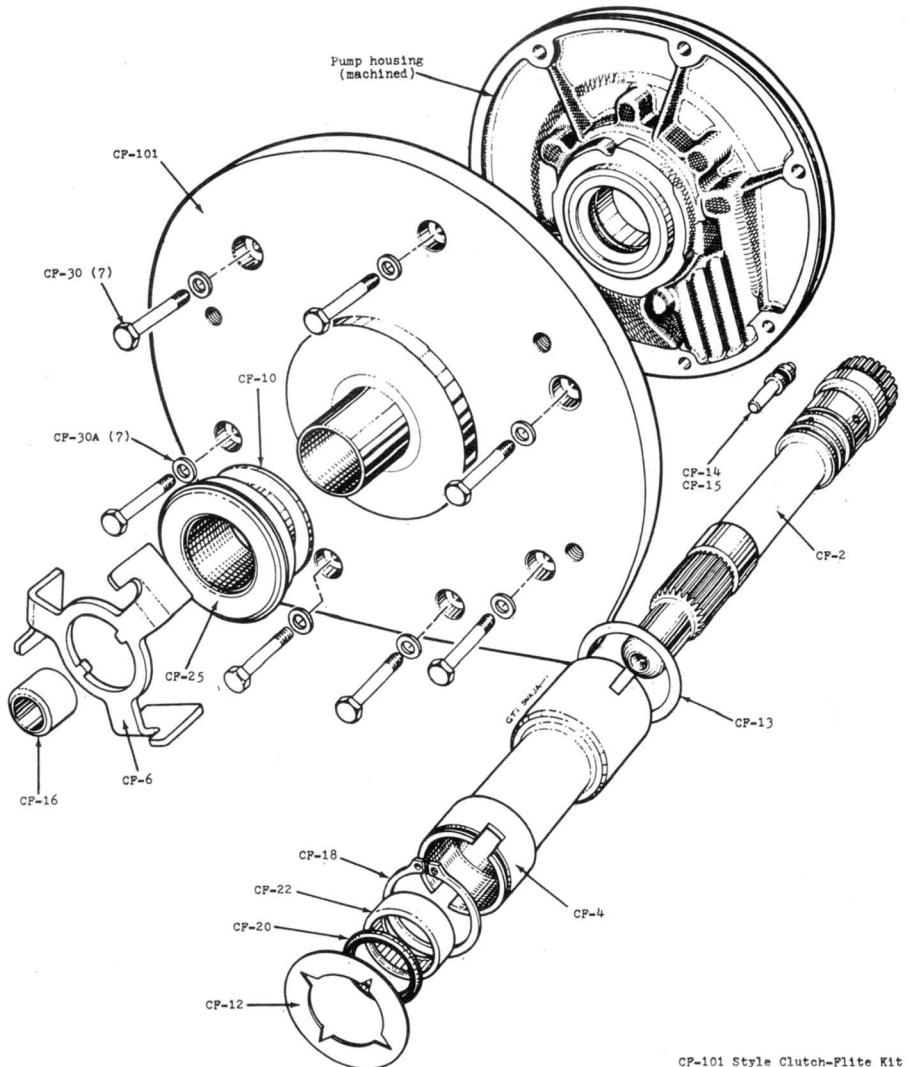


Fingers on Schiefer aluminum pressure plate hook up to special B&M pump drive spider.



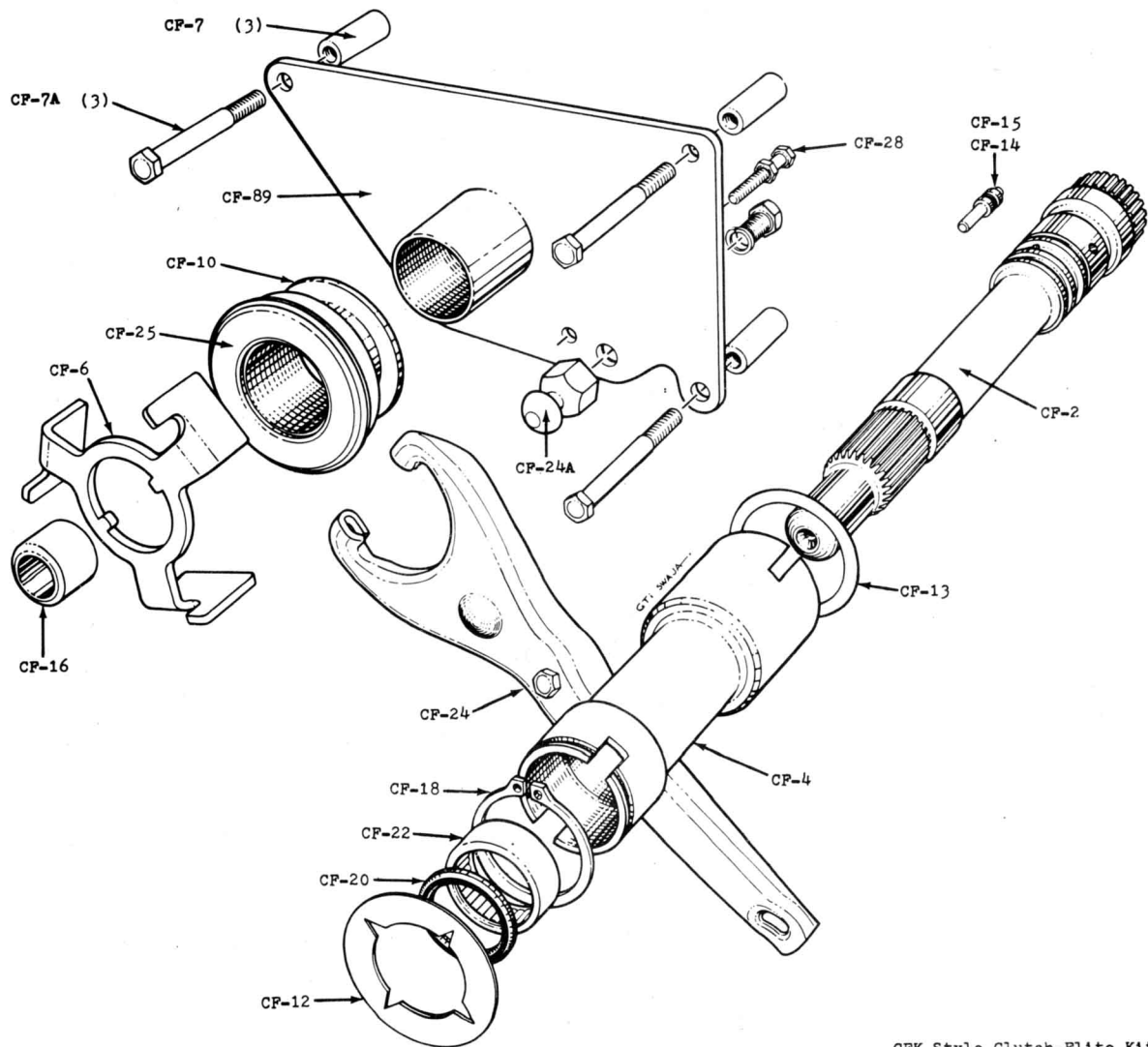
CARS Magazine A/MP 466-inch Camaro is fitted with a complete CF-101 Clutch-Flite.

### CF-101 Style Clutch-Flite Kit



CF-101 Style Clutch-Flite Kit

| QUANTITY | PART NUMBER | DESCRIPTION                               |
|----------|-------------|---|
| 1        | CF-2        | Input shaft                               |
| 1        | CF-4        | Pump drive tube                           |
| 1        | CF-6        | Pump drive spider                         |
| 1        | CF-10       | Throw out bearing sleeve                  |
| 1        | CF-12       | Teflon thrust washer (slotted)            |
| 1        | CF-13       | Teflon thrust washer                      |
| 1        | CF-14       | Converter valve plug                      |
| 1        | CF-15       | Converter valve plug "O" ring             |
| 1        | CF-16       | Crankshaft pilot bushing                  |
| 1        | CF-18       | Snap ring (pump drive spider)             |
| 1        | CF-20       | Seal (input shaft)                        |
| 1        | CF-22       | Roller bearing                            |
| 1        | CF-25       | Throw out bearing                         |
| 1        | CF-26       | .343 diameter ball                        |
| 1        | CF-27       | 5/16 x 24 x 1/2 set screw                 |
| 7        | CF-30       | 5/16 x N.C. x 7 bolts                     |
| 7        | CF-30A      | Flat washers                              |
| 1        | CF-101      | Adaptor housing                           |
| 1        |             | Torque-Plyte front pump housing; machined |



CFK Style Clutch-Flite Kit

| QUANTITY | PART NUMBER | DESCRIPTION                              | QUANTITY | PART NUMBER | DESCRIPTION                   |
|----------|-------------|--|----------|-------------|-------------------------------|
| 1        | CF-2        | Input shaft                              | 1        | CF-15       | Converter valve plug "O" ring |
| 1        | CF-4        | Pump drive tube                          | 1        | CF-16       | Crankshaft pilot bushing      |
| 1        | CF-6        | Pump drive spider                        | 1        | CF-18       | Snap ring (pump drive spider) |
| 3        | CF-7        | Spacer tubes (throw out bearing support) | 1        | CF-20       | Seal (input shaft)            |
| 3        | CF-7A       | 5/16 x N.C. x 3 bolts                    | 1        | CF-22       | Roller bearing                |
| 1        | CF-89       | Throw out bearing support                | 1        | CF-24       | Throw-out bearing fork        |
| 1        | CF-10       | Throw out bearing sleeve                 | 1        | CF-24A      | Throw-out bearing fork pivot  |
| 1        | CF-12       | Teflon thrust washer (slotted)           | 1        | CF-25       | Throw out bearing             |
| 1        | CF-13       | Teflon thrust washer                     | 1        | CF-26       | .343 diameter ball            |
| 1        | CF-14       | Converter valve plug                     | 1        | CF-27       | 5/16 x 24 x 1/4 set screw     |
|          |             |  | 1        | CF-28       | 1/4 x 20 x 1 1/2 bolt & nut   |

used, and when it's time to shift you just click the shifter or punch the button (depending on your particular installation) like an automatic. The unit works great with a stock Torqueflite on the street or a beefed unit on the strip. It's a completely tractable setup. Whenever the car comes to a stop, the clutch must be released to disengage the transmission. To move either forward or in reverse initially, the clutch must be used. For the First to Second and Second to Third shifts, the unit is to be regarded as if it were a manual shift Torqueflite.

When B&M originally ventured into the Clutch-Flite business, the

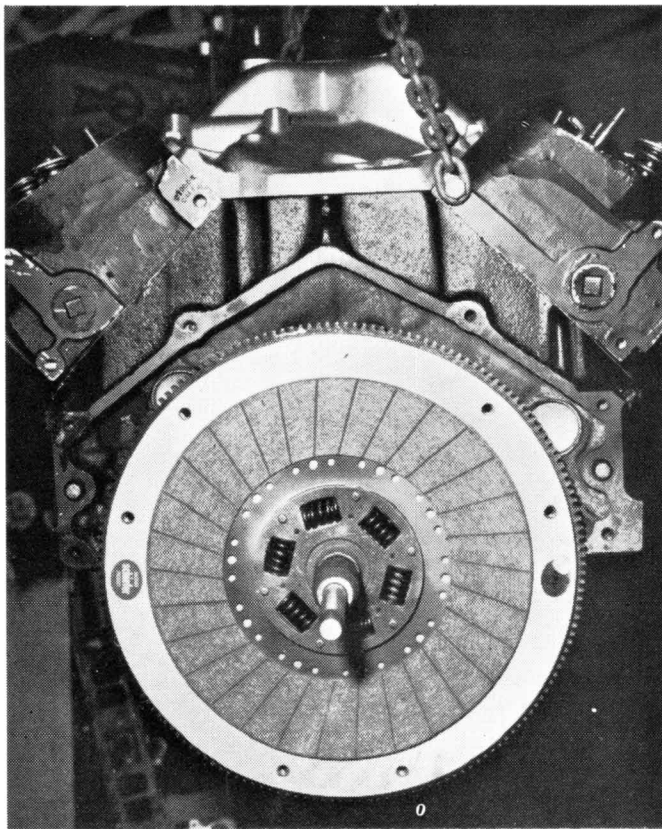
master plan was to come up with a reasonably-priced do-it-yourself kit which could be used with a junkyard Torqueflite. Using this dream kit anyone could convert to Clutch-Flite and cure the stall speed problem encountered with all unblown rigs. The kit became reality and is now known as the CFK assembly. Then they went a little deeper and came up with a complete ready-to-bolt-on Clutch-Flite using the kit coupled to one of the company's specially-built Torqueflite transmissions. So now there's a choice of stall speed problem solvers.

The conversion from stick or automatic to Clutch-Flite can be handled

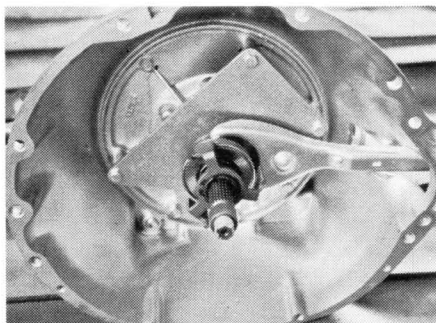
one of two ways. Either you can adapt the CFK kit to your own shifter or go for the bolt-on setup. When using the CFK kit you utilize the full Torqueflite case, an aluminum adapter between the engine and unit, and must machine a slot in the case for the clutch fork. No special tools are needed, no machining is necessary and the complete conversion requires less than 2 hours time (on the transmission itself). And, it uses any clutch (B&B or Long style) except the diaphragm-style units used on late-model stockers. One of the new-style ballistical fiberglass blanket shields

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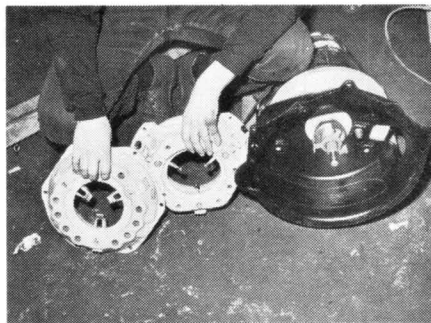
You can come off at 6500 rpm and enjoy dial-a-win clutchless upshifting



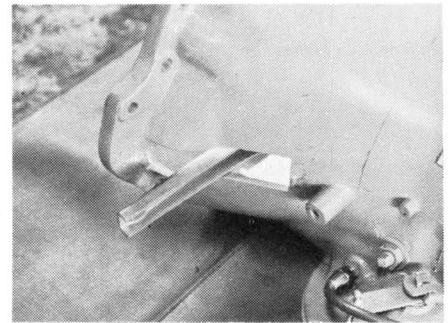
Camaro's 466-inch with Schiefer aluminum flywheel awaits installation of Clutch-Flite unit. Machined front pump housing bolts right to mill via Lakewood scattershield. Unit does not require the installation of an oil cooling radiator as used with stock setups.



Flywheel's eye view shows how CFK clutch fork mates up to special throwout bearing.



Clutch-Flite accepts either Borg & Beck or Long-type clutch. Note Lakewood scattershield.



When using CFK conversion kit, clutch fork slot must be machined in the stock housing.

Borg & Beck or Long-style pressure plates only, as the oil pump drive spider assembly is designed for three-finger operation. There's no way to mate a diaphragm assembly to the pump drive. Units are presently available for all General Motors products, '62 to '68 Mopars and 260-289 to 352-428 Fords. Eventually there will be Clutch-Turbo and Clutch-Cruiso units available for other applications.

The complete assembly with Schiefer clutch-flywheel, shifter and an NHRA-approved scattershield runs pretty close to the 600 dollar mark. However, the cost of a new four-speed with the same equipment runs almost as much and it's nowhere near as efficient. Besides, with the Clutch-Flite you can come off at 5000 to 6000 rpm, enjoy clutchless up-shifting and cut 5/10ths of a second off your elapsed time and up for top end by 1 to 2 mph. For complete B&M product information, why not drop Bob Spar a line at B&M Automotive, Dept. JR, 7700 Woodman Ave. Van Nuys, California.

### CHEVY SHIFTER

should be used with this setup for competition applications.

When using the complete unit, as used on the CARS Magazine A/MP SS-427 Camaro, all you have to do is install the clutch-flywheel parts and bolt the unit up to the engine using an NHRA-approved scattershield bell-housing (Lakewood unit shown). The stock front pump is retained and is driven by the three fingers of the pressure plate. The linkage setup marketed by B&M is a rather simple bolt-on affair which offers super-positive control via a single cable hookup. All you have to do is drill four holes for the shift control panel and you're in business. Both of the two Clutch-Flite units are fully manual only and can be used on the street. And, neither requires the use of an external oil cooling radiator which means less parts and less weight on the front end.

When setting up one of these units it's recommended that a bonded clutch disc be used (1x23 spline Chrysler-type). But a spring-hub or non-spring-hub riveted disc can be used, too. For a driveshaft it's wise to use a front half of a '66 Mopar Street Hemi or trailer towing package driveshaft which has a very heavy slip joint and yoke and weld it to the rear of the existing shaft. On the Camaro race we utilized a Chevelle driveshaft which bolted right in place.

Since B&M is a very flexible operation, and they do a lot of catering to the go-fast set, special units with short tailshafts are available for installations where space is at a premium. This expensive setup can be had with either Muncie or Mopar splining with a 1-foot shorter shaft made of Hy-Tuff steel (guaranteed against twisting and breaking).

As mentioned above, the B&M units are designed to work with either