

**INSTALLING A 79-86 MUSTANG  
'GAUGE' TYPE INSTRUMENT CLUSTER  
IN A 78-83 FAIRMONT/ZEPHYR  
by Paul78Zephyr**

**GENERAL INFO**

Installing a Mustang instrument cluster is generally a straight forward job but a good understanding of schematics and wiring is helpful.

The first thing you need to do is decide which Mustang instrument cluster you are going to be using. All 79-86 Mustang units are generally physically similar, however the 79-82 units have different graphics/gauge colors than the 83-86 units (the 79-82 Mustang units match the 78-83 F/Z graphic style). I have also found that some Mustang ICs may require slight mechanical modification to fit the F/Z dash structure. More importantly the 79-80 Mustang units are **ELECTRICALLY DIFFERENT** from the 81-86 Mustang units. The F/Z IC has a single wiring connector going to the underdash harness. All 79-86 Mustang units use two connectors. The single F/Z connector (and its mating socket) is physically the same as the two Mustang connectors/sockets.

**79-80 Mustang IC**

(note these are easily identified as they have **TWO** flex circuits on the rear).

If you use a 79-80 Mustang unit then the single F/Z connector can be directly plugged into one of the Mustang units sockets (the one in the center) and the wiring will be correct but the only gauges that will operate will be the fuel and oil pressure gauge. All other functions (ie dash lights, directional indicators, hi beam ind, brake warning lamp, etc, will work. However, you must also change the oil pressure sender on the engine from a 'light' sender to a gauge sender or you will kill the oil pressure gauge. The operation of the tach, water temp, and ammeter gauges is on the second connector and you will have to fab you own 'mini-harness' for these gauges. I recommend that only the tach and temp gauges be wired as these are relatively straight forward to do. You will also need to replace the temperature sender on the engine from 'light' sender to the correct 'gauge' sender or you will kill the temp gauge. The ammeter wiring is a bit difficult to integrate correctly into the existing F/Z underdash and underhood harnesses. I did it only because I was completely rewiring my entire Zephyr and making my own new harnesses, so I was able to integrate the correct ammeter circuit.

**81-86 Mustang IC (uses a single flex circuit)**

If you use a 81-86 Mustang unit it will require more work as you will have to move individual wires in the single F/Z connector to different locations in this connector, move other wires from this connector to the needed second connector, and will need to run new wires to both connectors. The wiring and function pinouts of the 81-86 unit's two connectors is completely different than the 79-80 units. Also you may need to make some wiring splices in the F/Z harness. Basically it is a somewhat complicated job (but

very do-able if you really want to use a 81-86 unit).

Regardless of whether you use the 79-80 unit or the 81-86 unit you must make some minor wiring changes at the connector on your stock externally mounted alternator voltage regulator. This is because the Mustang units do not have the ALT light and the light is part of the charging circuit.

The single connector in the F/Z instrument cluster (IC) and the connector on the Mustang IC that is right in the center (and at a 45 degree angle) is Ford connector number C202. The second connector in the Mustang IC that is on the lower right side (as viewed from the rear of the IC) is Ford connector C217. Both connectors have gray housings and the housings are physically the same. The connectors and IC housings are keyed so the connectors can only be installed one way. On F/Z ICs the single connector (C202) is installed horizontally with the top row being 8 to 14 (L to R) and the bottom row 7 to 1 (L to R) as viewed from the rear. On the Mustang IC C202 is installed at about a 45 degree angle with pins 7 and 8 at the upper left and pins 1 and 14 at the lower right. The 'top' row is 8 to 14 (L to R) and the 'bottom' row is 7 to 1 (L to R) as viewed from the rear. The second connector, C217, is horizontal with the top row being 8 to 14 (L to R) and the bottom row 7 to 1 (L to R) as viewed from the rear.

#### DETAILED PROCEDURES

+++++

##### FOR 79-80 Mustang ICs:

The C202 connector in the existing F/Z underdash harness can simply be plugged into the C202 socket on the back of the IC. No changes to this connector are required. You will need to make new connections to the second connector (C217) in the Mustang IC.

New connections required (original color for reference):

BLK	57	GND	(can jumper from C202-11)	C217 - 9
RED/YEL	640	12V	-	C217 - 10
(This needs to 12V with ign sw on, or can jumper from C202-7)				
DGRN/YEL	11	Tach (coil neg)		C217 - 11
RED/WHT	39	Temp gauge	-	C217 - 12

##### C217 pins 1-8 NOT USED FOR 79/80 MUSTANG ICs

1. Ammeter connections are on C217- 13 and 14 but require underhood harness modifications.
2. Be sure to install stock gauge type oil pressure and water temperature senders.
3. Wiring at voltage regulator connector **MUST** be modified:
  - \*Disconnect and isolate WHT/BLK from Reg 'S' terminal.
  - \*Move LGRN/RED from Reg 'I' terminal to Reg 'S' terminal.
  - \*Reg I no longer used.
  - \*Verify that alternator is charging (alt will not charge without this change).

+++++

**FOR 81-86 Mustang ICs**

**The wiring in the existing F/Z connector C202 MUST be rearranged and/or moved to a new connector C217 per this chart:**

**WIRING CHART**

<b>Color</b>	<b>Circuit</b>	<b>Function</b>	<b>F/Z (and 79/80 Mustang)</b>	<b>C202 81/86 Mustang</b>
<b>YEL/WHT</b>	<b>29</b>	<b>Fuel</b>	<b>1</b>	<b>C202 - 1</b>
<b>BLK/GRN</b>	<b>297</b>	<b>12V IVR input</b>	<b>2</b>	<b>C202 - 2</b>
<b>PPL/WHT</b>	<b>977</b>	<b>Brake Ind</b>	<b>3</b>	<b>C217 - 14</b>
<b>WHT/RED</b>	<b>31</b>	<b>Oil Press Gauge</b>	<b>4</b>	<b>C202 - 5</b>
<b>LGRN/RED</b>	<b>904</b>	<b>ALT (Reg S)</b>	<b>5</b>	<b>C202 - 3</b>
<b>RED/GRN</b>	<b>16</b>	<b>ALT (12V)</b>	<b>6</b>	<b>C202 - 4</b>
<b>RED/YEL</b>	<b>640</b>	<b>12V</b>	<b>7</b>	<b>C202 - 11</b>
<b>WHT/PPL(D)</b>	<b>26</b>	<b>Liftgate Ajar</b>	<b>8</b>	<b>Not Used*</b>
<b>LBLU/RED</b>	<b>19</b>	<b>12V (Illumination)</b>	<b>9</b>	<b>C202 - 6</b>
<b>WHT/BLU</b>	<b>2</b>	<b>R Ind</b>	<b>10</b>	<b>C202 - 7</b>
<b>BLK</b>	<b>57</b>	<b>GND</b>	<b>11</b>	<b>C202 - 13</b>
<b>LGRN/BLK</b>	<b>12</b>	<b>Hi Beam Ind</b>	<b>12</b>	<b>C202 - 9</b>
<b>LGRN/WHT</b>	<b>3</b>	<b>L Ind</b>	<b>13</b>	<b>C202 - 8</b>
<b>DGRN/LGRN</b>	<b>450</b>	<b>Seat Belt Ind</b>	<b>14</b>	<b>C202 - 10</b>

**\*May or may not be present in F/Z harness (was for station wagon only).**

**In addition the following new connections are required (original color for reference):**

<b>RED/YEL</b>	<b>640</b>	<b>12V</b>	<b>-</b>	<b>C217 - 10</b>
<b>(This needs to 12V with ign sw on, or can jumper from C202-11)</b>				
<b>DGRN/YEL</b>	<b>11</b>	<b>Tach (coil neg)</b>	<b>-</b>	<b>C202 - 12</b>
<b>RED/WHT</b>	<b>39</b>	<b>Temp gauge</b>	<b>-</b>	<b>C217 - 11</b>

**C202 pin 14, and C217 pins 1 thru 9 not used for 81-86 Mustang ICs**

- 1. Ammeter connections are on C217- 12 and 13 but require underhood harness modifications.**
- 2. Be sure to install stock gauge type oil pressure and water temperature senders.**
- 3. Wiring at voltage regulator connector MUST be modified:**
  - \*Disconnect and isolate WHT/BLK from Reg 'S' terminal.**
  - \*Move LGRN/RED from Reg 'I' terminal to Reg 'S' terminal.**
  - \*Reg I no longer used.**
  - \*Verify that alternator is charging (alt will not charge without this change).**

\*\*\*\*\*

**MODIFY A 8K 79-86 MUSTANG TACH  
TO WORK ON V-8 MOTORS  
by Cleger**

**OK guys, here's the scoop:**

**I've successfully modified & "calibrated" the 8K 4-cyl tach in my '79 4-cyl cluster for use with my 302. Picked up a second cluster (+ the whole dash harness so I got a spare cluster connector) and used the tach in that cluster as a reference. It is a 4-6-8 tach, and all three circuits were present.**

**As you may recall, the 4-cyl 8K tach had only a single leg of the three-way switchable engine-selector circuits present on its board. This leg consisted of a single 62K ohm .25W resistor, plus a little 0-100K trimmer pot in series.**

**In the page at the link Paul posted in reply #51 above, the author wrote instructions to the effect that one should solder a 100K resistor across the trimmer terminals. I thought about this some, and the more I thought, it didn't seem right. Since the trimmer goes from 0-100K (at the time, I didn't know how high it would go, but figured it was wide-open/0K at one end of its range) running a 100K resistor in parallel with the trimmer would only decrease the upper end of the trimmer's resistance, but it would still drop to zero at the other end of its range.**

**Anyhow, turned out I was right, so we can all disregard the advice on that page Paul posted (but is not responsible for!) I tried adding the 100K resistor across the trimmer, but still couldn't get the resistance low enough. Almost, but not quite. The 8K tach would read about 1100 rpm at idle, with the trimmer backed all the way off, while the factory 4-6-8 tach would read 850 or so. Zero ohms is still zero ohms.**

**So, what I did instead was go back and remove the 100K resistor I had added, and replace the factory 62K resistor with a 22K I had laying around. This change, in combination with a little adjustment to the trimmer, and the tach was dialed right in. I think a 10K resistor might have been better, but with a 0-100K sweep on the trimmer, there's plenty of adjustability... a 33K, or even NO resistor, probably would have worked as well. if you figure it was set at around 50K at the factory for a total of about 112K with the resistor (for a 4-cyl car) then setting it at 34K to work with the 22K resistor for a total of 66K in an 8-cyl car still leaves the trimmer near enough to its midpoint to allow plenty of adjustability.**

**Now, I have to admit, I didn't take all the readings & record everything like I promised. Sorry, I have so many things going on that once I got it working, I put everything back together and buttoned it all up. But here's the thing - if you have a meter, and you want to tackle this, all you need to do is take a reading across BOTH the trimmer (at the**

**factory setting) AND the 62K resistor, record that number, then replace the 62K with a 22K resistor, put your meter back on the traces around the trimmer and your new 22K resistor and use the trimmer to HALVE the old value you recorded. This should leave you pretty much dead-on when you put the tach back in the car.**

**The only reason this didn't work for me the first time was that I assumed you'd double the resistance value to accomodate for the 2X igniton pulses from the V8 versus the 4-cyl engine. I even had the 22K resistors but didn't try using them. Turns out, you really want 0.5X. Why tachometer magic works this way is beyond me, but there it is.**

**Hopefully this will help the next guy who wants to put an 8K tach in his V8 car. The resistors cost pennies and are in the drawer at your local Radio Shack. At the very least, I can assure all of you that a 22K resistor in place of the 62K will work perfectly. The sweep of the 8K 4-cyl tach and the selectable 4-6-8 tach matched each other exactly, as far as I could tell, from idle up through 3500-4000 rpm.**

\*\*\*\*\*