



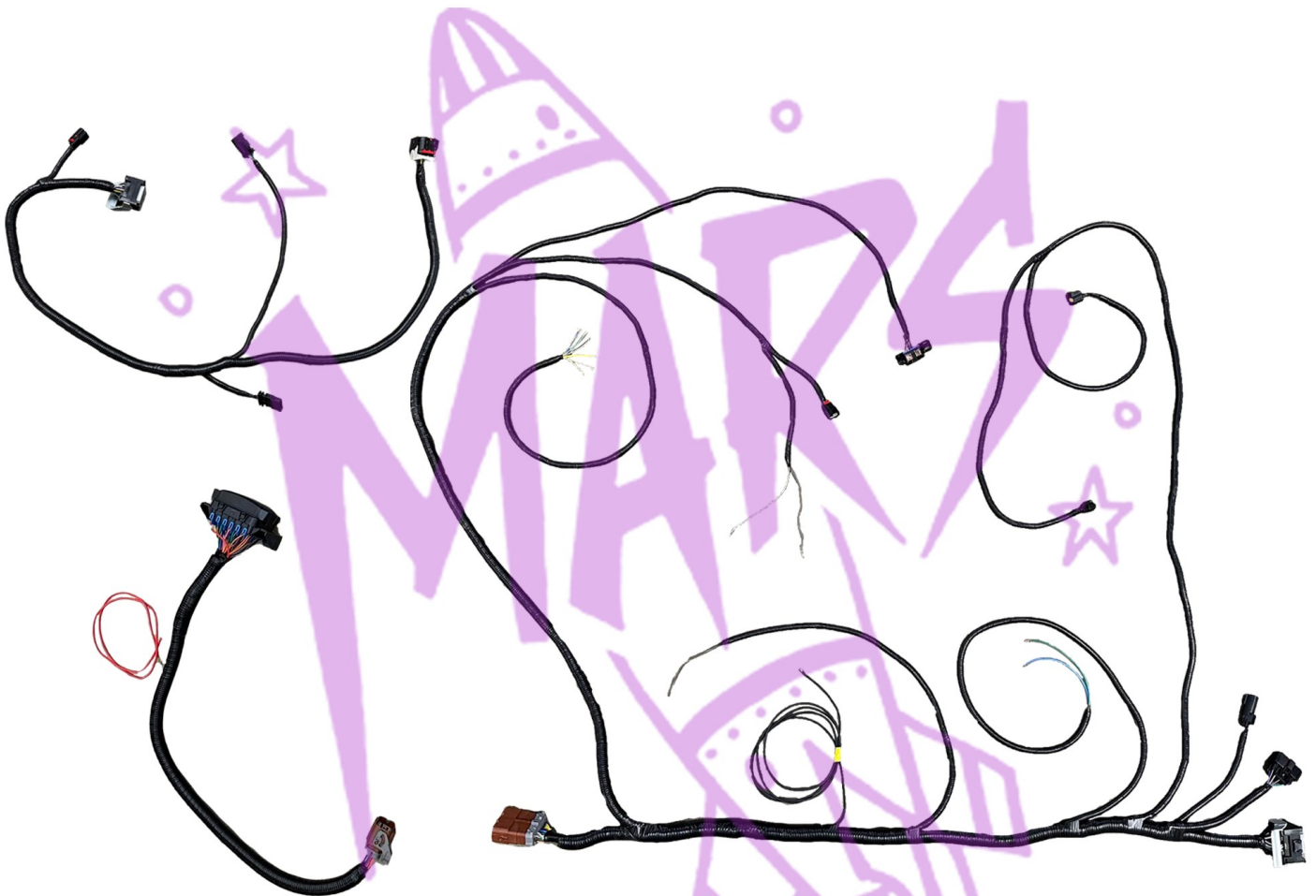
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GEN 3 F150 Coyote 5.0L Stand-Alone Harness
10R80 10 Speed Automatic Transmission
2018-2020 *NOT FOR 2021 and newer*****

This harness was designed by Mars Auto for easy installation for hot-rod builders. Meant for “plug-and-play” use with factory donor vehicle engine, transmission, and battery cable harnesses. This specific harness is utilized only with 10R80 5.0L transmissions. This harness will run and operate the Gen 3 F150 Coyote 5.0L and 10R80 in your hotrod project!

Works with PATS deleted factory ECM. We can program your donor ECM or supply you with one. (Not Included)

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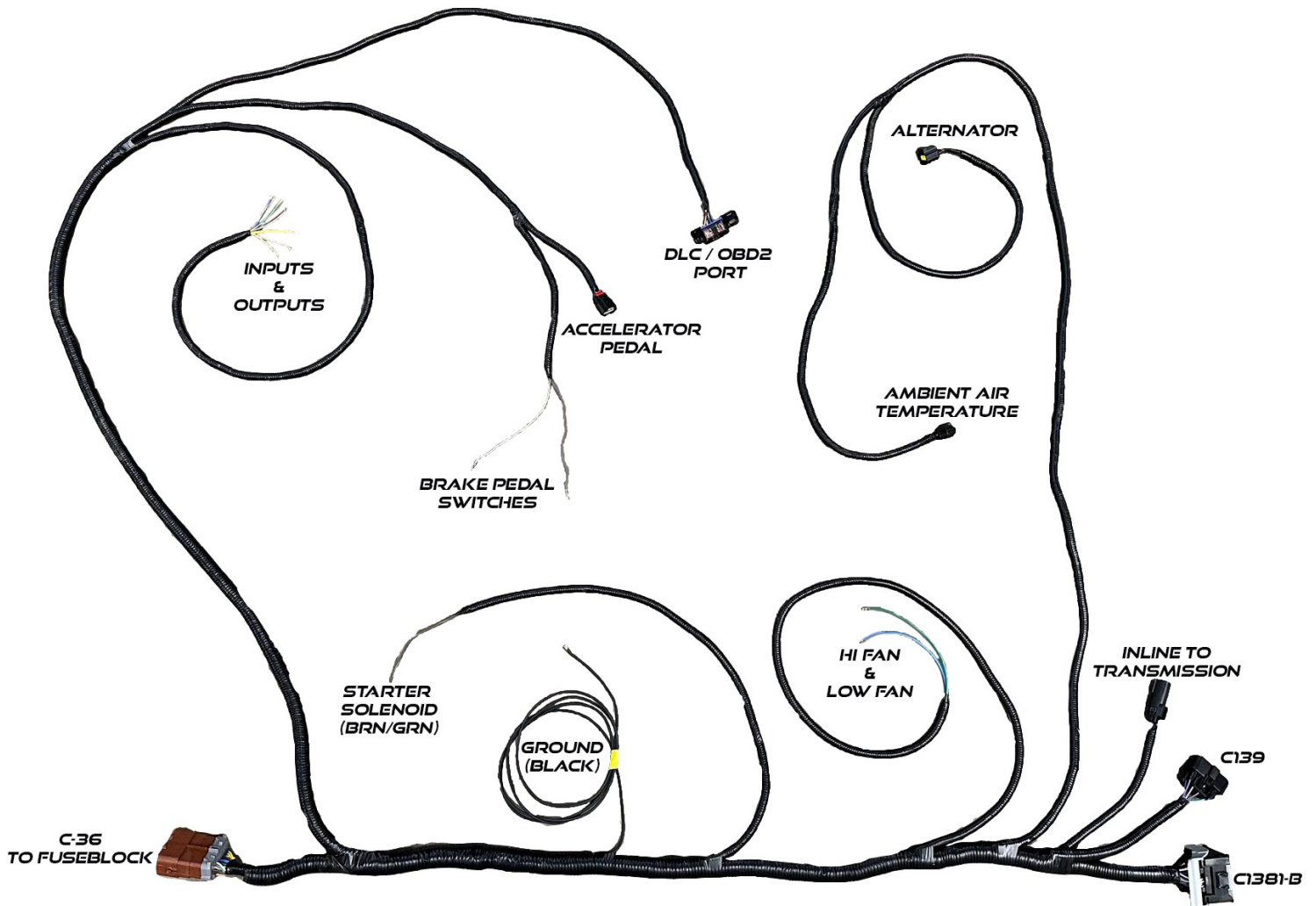
This kit contains the following:

- Body Control Pack Harness
- 10R80 Transmission Harness
- Fuseblock—Power Distribution Module

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866-321-6277

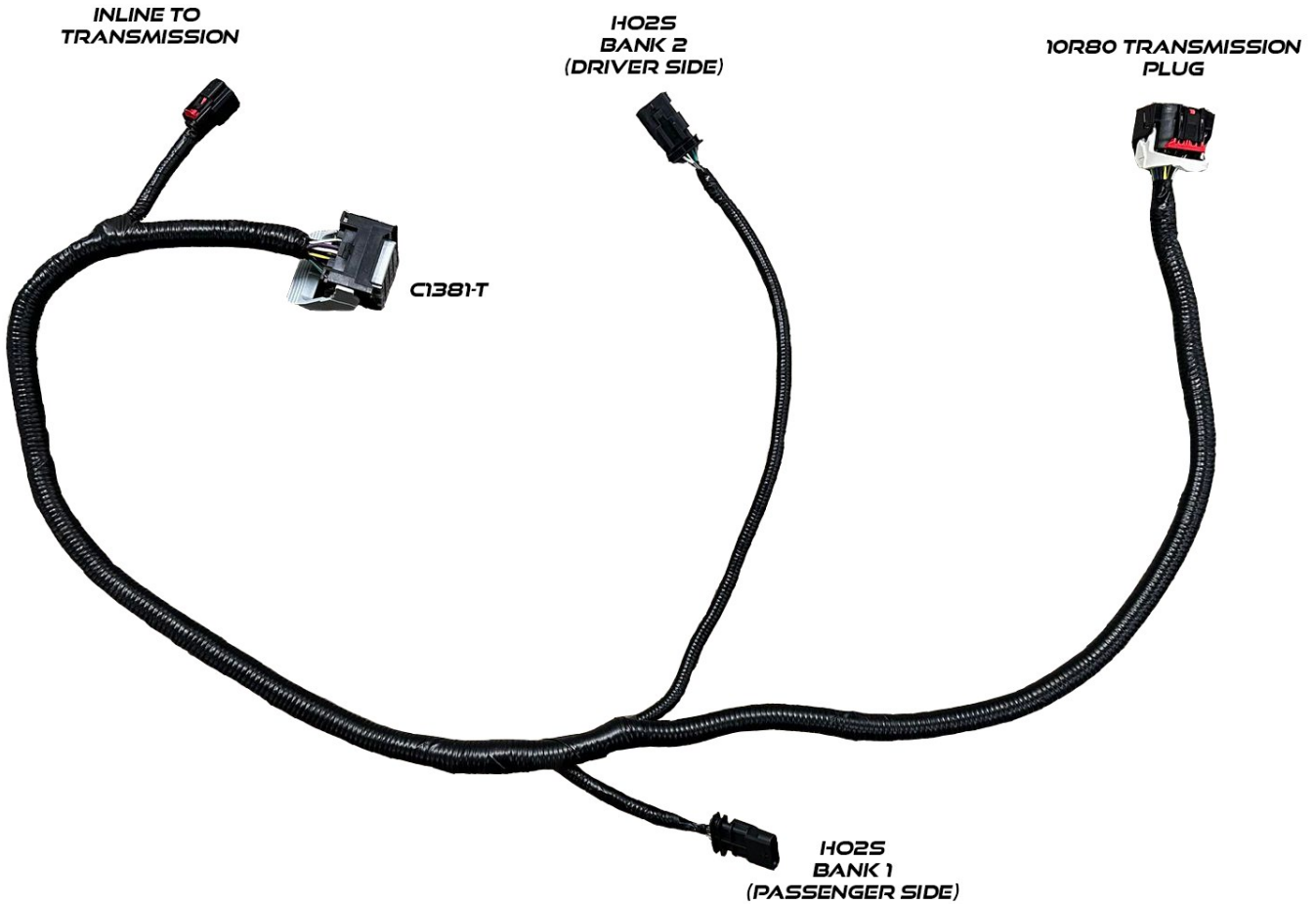
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C1381B	ECM Connector	I/O	Inputs and Outputs
C139	Inline connector to Engine Harness	DLC	Data Link Connector/ OBD2 Port
---	Hi & Low Fan Power Supply Leads	AAT	Ambient Air Temperature
---	Inline connector to Transmission Harness	BRAKE	Brake Switch Leads (BPP & BPS)
GROUND	Ground Lead (BLACK)	ACC	Accelerator Pedal
C-36	Fuse Block Connector	START	Starter Solenoid (BRN/GRN)
ALT	Alternator Plug		



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Required harnesses **NOT** included with this kit:

1. Engine Harness—JU5Z-12A581-B

These harnesses are required for our stand-alone harness to be plugged in. Many times these harnesses are already included in used donor vehicle take outs.

ONLY THE ENGINE HARNESS IS INCLUDED WITH FORD CRATE ENGINES

INSTALLATION:

1. Start by plugging the ECM C1381 connector onto the “VEH” plug of the ECM. This connector can and will only fit into one slot on the ECM.
2. Then connect C139 to the mating plug on the Engine harness. (Will be located close to the ECM plug)
3. Connect the In-Line Transmission plug to the transmission harness mating plug.
4. Next connect Starter Solenoid Lead to the starter solenoid.
5. Find a good Ground location for the Ground Lead. We recommend the ground battery terminal if possible.
6. The Fan Power Supply Leads (Hi & Low) can be routed to your fans. They are already fused and relay operated.

Blue Fan Supply lead—Hi Fan Power

You will still need to ground the fan along with this power supply

Green Fan Supply lead—Low Fan Power

You will still need to ground the fan along with this power supply.

7. Route the front harness extension with the Ambient Air Temp (K) plug along the front of your project vehicle keeping out of the way of fans and belts. Find a good location to securely fasten and plug in the AAT temp sensor.
8. The remaining C36 Fuseblock plug and Inputs/Outputs harness can be routed through your firewall inside with the Fuse Block or you can leave the water-tight fuse block in the engine-compartment.



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INSTALLATION (Continued)

10. Connect the Accelerator Plug to the pedal (M).

11. Wire the Brake Switch Leads

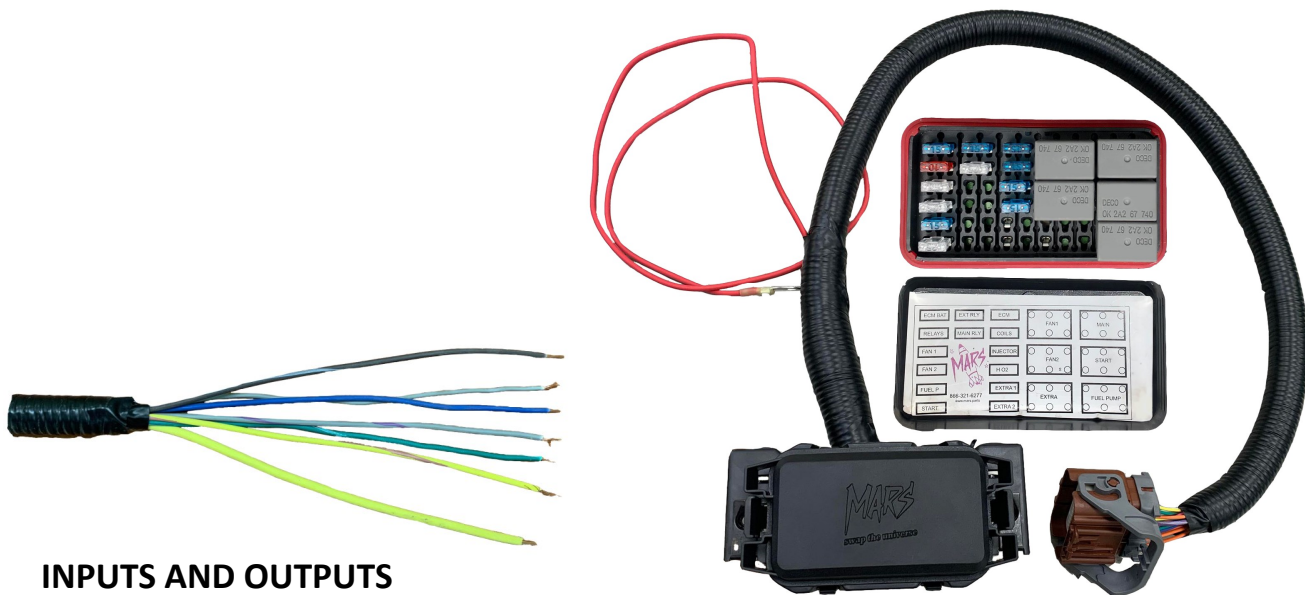
BPP (VIO/WHT) goes to +12v when the brake pedal is depressed.

BPS (VIO/ORG) is grounded **"UNTIL"** brake pedal is depressed.

***BPS is only required for push-start operation. It requires the brake pedal to be depressed before allowing start signal to the starter.

12. Mount and secure the DLC/OBD2 Port (J) in a convenient place for diagnostic trouble shooting and future tuning.

13. Apply a quality battery source to the Fuse Block battery lead (Red wire).

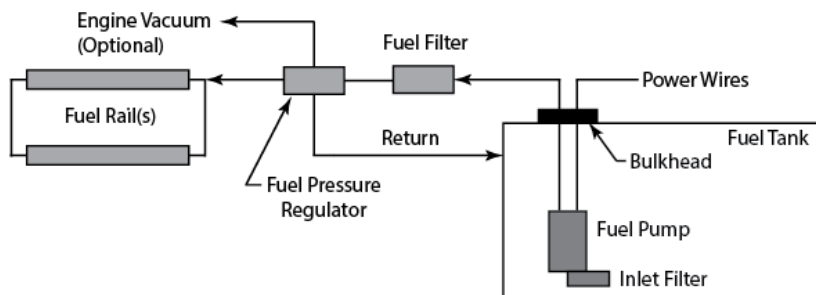


INPUTS AND OUTPUTS

Fuel Pump Supply (YEL)

This +12v fuel pump supply wire is a fused relay operated supply for your fuel system. It commands the fuel pump to prime for 2 seconds when key is first turned on. Then will come on when engine is started and running. This wire can be extended or spliced to utilize your projects factory fuel pump as long as it meets the below requirements.

RETURN STYLE FUEL SYSTEM IS REQUIRED; 175LPH REGULATED AT 58 psi.





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INPUTS AND OUTPUTS Continued...

IGN Power (YEL/VIO)

Apply a +12v to this wire to power on and wake-up the ECM and system. As stated above, this will also turn on the fuel pump. This can be either tied into an aftermarket ignition switch or your projects factory ignition switch.

CRANK Request (GRN/WHT)

Apply a +12v to this wire to engage the starter relay and solenoid to start the engine. The factory 10R80 transmission has a built-in Park/Neutral safety switch for safe starting conditions. If you are experiencing a “no-start” situation, check to make sure your transmission is in either Park or Neutral.

OPTIONAL PADDLE SHIFTING:

SHIFT UP (GRY)

Apply this wire through a paddle shifter switch with the opposite side being the SHIFT RTN. When switch is applied and transmission is in Sport Mode the shifting will be done manually by your inputs.

SHIFT DOWN (GRY/VIO)

Apply this wire through a paddle shifter switch with the opposite side being the SHIFT RTN. When switch is applied and transmission is in Sport Mode the shifting will be done manually by your inputs.

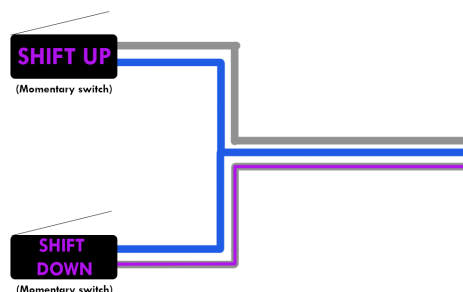
SHIFT RTN (BLU)

Apply this wire as the signal return to both of the SHIFT UP/SHIFT DOWN paddle switches. This is required for the paddle shifting to function properly.

NOTE: These optional paddle shifting wires can be spliced and routed to a factory Select Shift Ford Transmission Gear Selector lever from 2011+ F150/Mustang

OPTIONAL PADDLE SHIFTER WIRING

NOTE: Momentary switches are not included





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Troubleshooting Tips:

- ◆ **Grounds—Make sure all grounds have nice contact and are securely fastened. May try even cleaning up area with sandpaper for premium connection. Test with multimeter for true continuity.**
- ◆ **Use DLC/OBD2 Port for reading Diagnostic Trouble Codes. Use factory guides for diagnosing issues.**
- ◆ **Check all sensor reference voltage for +5v. Use multimeter for checking volts or back pining with a continuity test.**
- ◆ **Make sure all connectors are fully connected and locks are locked.**
- ◆ **Call 866-321-6277 for support**