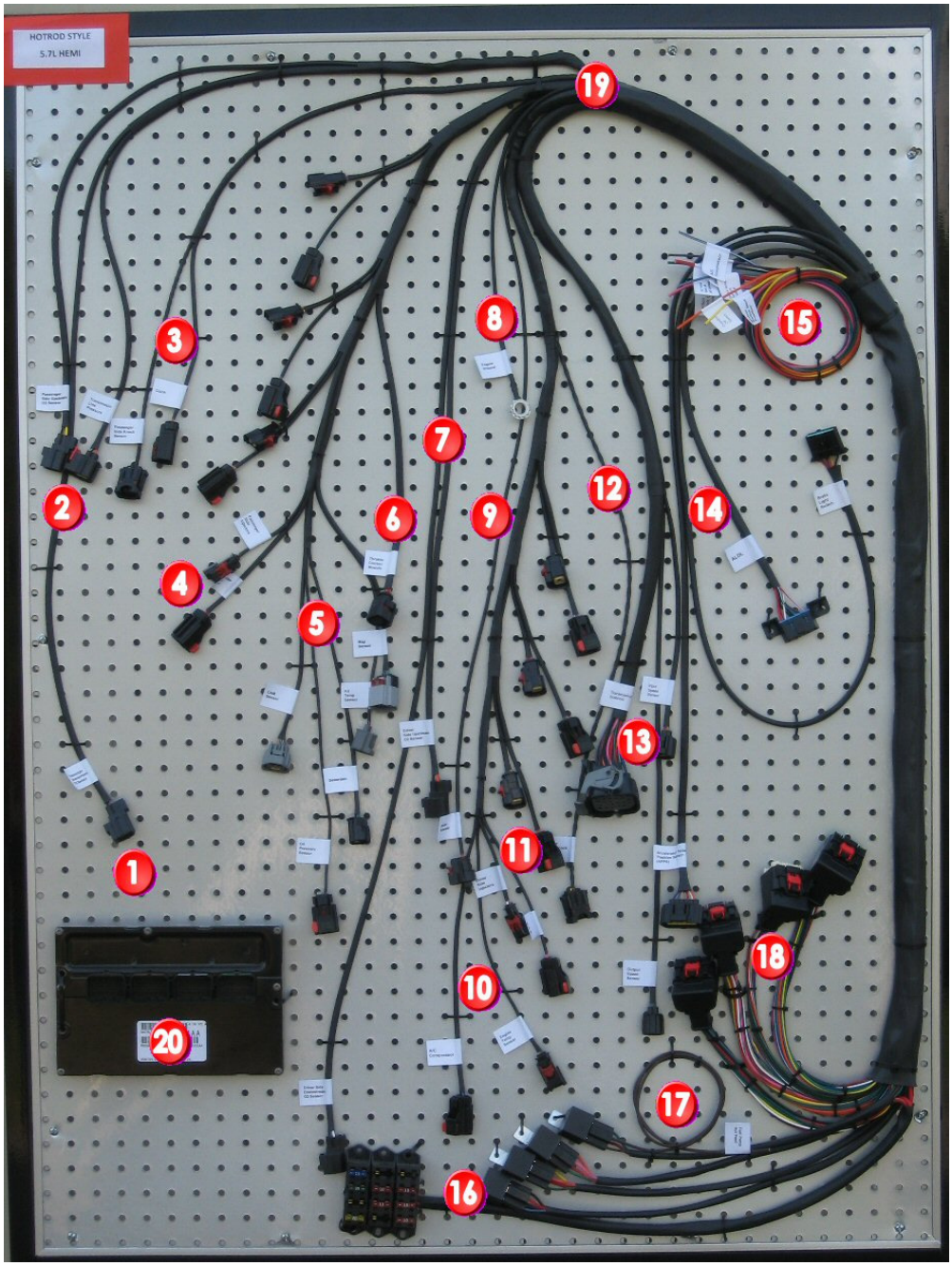
INSTALLATION INSTRUCTIONS

HEMI WITH NAG-1 TRANSMISSION (WA580)

HOT-ROD STYLE



***** Typical Hotrod Harness *****

(See Page 5 for Nag-1 Specific Items)

Our hotrod style harness is designed for the computer, fuse block and relays to be installed inside the vehicle under the dash. The engine and transmission connectors should be pushed out through a hole 2 3/8" in the firewall to wrap up and around the engine block. The hole in the firewall should be directly behind the passenger fuel rail down behind the head. It is best to start with the largest plug first (the transmission solenoid on an automatic harness).

Item #19 should be positioned directly behind and slightly below the passenger fuel rail when installed. The branches that contain the coils and injectors should be zip-tied to the fuel rail so that all coils and injectors plug in with no strain on the plugs.

Accessory items and items on the front of the engine block should hang over the front and be close to the correct sensors. Items on the sides of the block will fall down behind the heads and up under the exhaust manifolds. Transmission and O2 sensors will down and back on either side of the transmission.

Items #14 and #15 should be just inside the firewall under the dash for easy connection to the sensors and gauges.

Below is a list of all items marked on the photo:

1. * ~~**Passenger Downstream O2 Sensor** – After the catalytic converter on the right side exhaust~~.

2. **Passenger Upstream O2 Sensor** – Before the cat on the right side exhaust.

3. **Passenger Knock Sensor** – Midway up the side of the engine block on the right side.
   Crank Sensor – Rear of engine block on right side.

4. **Passenger Coils and Injectors** – Run down the right-side fuel rail.

5. **Cam Sensor** – Front top of block to the right of water pump.
   Oil Pressure Sensor – Front of block directly above oil filter.
   Generator – Accessory on front of block up high on the right side.
   Intake Air Temp – Front of air box.
   Map Sensor – Front of intake below air box.

6. **Throttle Control Module** – Middle of intake behind air box.

7. **Driver Upstream O2 Sensor** – Before the cat on the left side exhaust.
   * ~~**Driver Downstream O2 Sensor** – After the cat on the left side exhaust~~.

8. **Engine Ground** – Use transmission bell-housing bolt at back of engine block.

9. **Starter Solenoid** – On top of starter. You MUST use our starter wiring for the engine to start/run properly.

10. **A/C Compressor** – Accessory on front of block up high on the left side.
    Engine Temp Sensor – Front top of block to the left of water pump.

11. **Driver Coils and Injectors** – Run down the left-side fuel rail.

12. **Driver Knock Sensor** – Midway up the side of the engine block on the left side.

13. **Transmission Solenoid** – Lower Right Front of transmission. (connector shown is representative only and does not match the Nag-1 connector)

14. **Accelerator Pedal Position Sensor** – Plugs in to top of pedal or in to bell crank depending on option.
    Brake Light Switch – Above brake pedal.
    Data Link Connector – Mount under dash for scanning.

15. **Open Wires** (wires vary by harness options)
    a. **Red** – 12 Volt Hot at all times. (direct to battery)
    b. **Pink** – 12 Volt Run and start. (ignition key on position)
    c. **Yellow** – Ignition start. (ignition key cranking position only) You must use the included starter solenoid wiring for the engine to start properly. (*Mopar muscle cars*: You will need to use a momentary push-button starter switch with this wire on one post and 12v on the other post, the dual ignition circuit of a late 60's to early 70's Mopars will not work with the Hemi system)
    d. **Blue** – Brake light output to rear brake lights.
    e. **Purple** – Backup lamp output to rear backup lamps.
    f. **Blue/White** – A/C compressor clutch. (12 volts to activate compressor)
    g. **Grey/Black** – Oil Press Gauge (open on both ends for you to hook up your own sending unit)
    h. **Tan/Black** – Engine Temp Gauge (open on both ends for you to hook up your own sending unit)

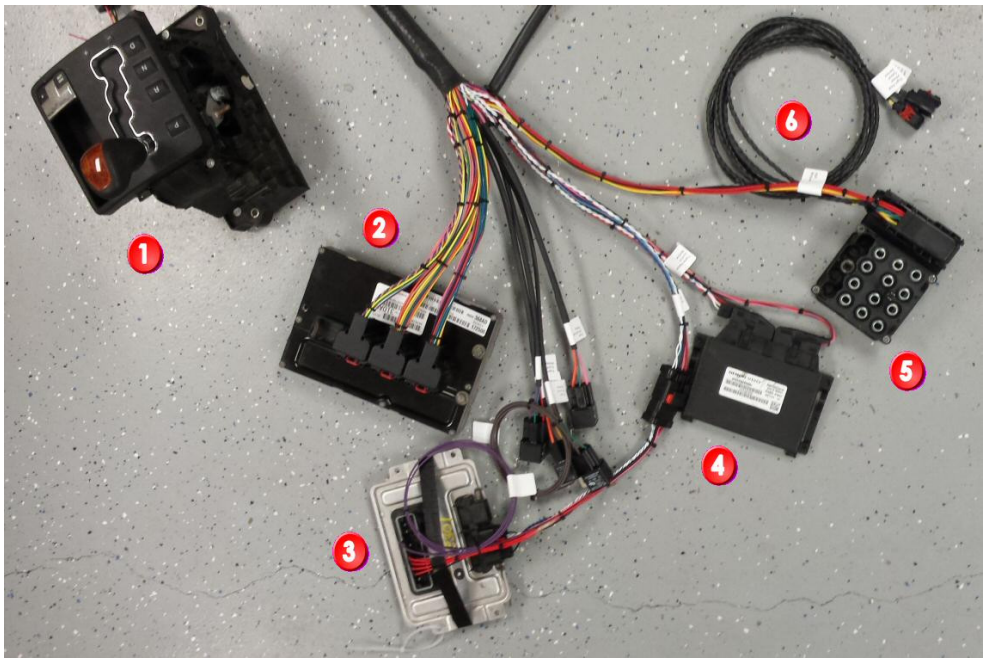
16. **Fuse Block** – See attached diagram. 2 rows for manual, 3 for automatic.
    Relays
    a. **Auto Shutdown Relay** – Power to injectors and coils.
    b. **Fuel Pump Relay** – Power to fuel pump.
    c. **Starter Relay** – Power to starter solenoid.
    d. **Transmission Relay** – Power to transmission. (automatic transmission)

17. **Fuel Pump Hot Feed** – Connect to hot side of fuel pump.

18. **Computer Connectors** – 3 for Nag-1 system.

* - Downstream O2's currently included only on full-emissions harnesses.

Nag-1 Specific Items



Below is a list of all items marked on the photo:

1. **Shifter Assembly** – Must use a factory Hemi shifter from an LX/LC car or a Grand Cherokee equipped with the Nag-1 transmission.

2. **Engine Computer** – Custom programming will be required to remove security and set the computer up for a hot rod application.

3. **Front Control Module** – Must be a used part from a donor car. Programming will be required to configure this for a hotrod application.

4. **Transmission Computer** – Must be a used part from a donor Hemi car.

5. **ABS Module** – Must be a used part from a donor Hemi car.

6. **Wheel Speed Sensors** – The Nag-1 transmission requires you to use the donor factory rear-end **OR** a tone ring and sensors to feed the ABS Module.

Hint:
Transmission shifter cable alignment is the most frequent cause for a non-shift condition with the Nag-1 transmission.

1. Start with the cable detached down on the transmission shift arm.
2. Move both the shifter and the trans shift arm all the way in to the Park position.
3. The cable end should go on the trans arm with NO pressure forward or back on the arm.
4. Remove the cable.
5. Move both the shifter and trans arm all the way in to the Drive position.
6. The cable end should go on the trans arm with NO pressure forward or back on the arm.
7. Make adjustments accordingly and repeat the steps to confirm proper alignment.
8. Done.

Battery Feed

NAG-1
300C Fuse Block Layout

1	2	3	4
Fuel Pump Relay #30 16 Red 20 Amp	Starter Relay #30 14 Red 20 Amp	Trans Relay #30 16 Violet 15 Amp	ASD Relay #30 14 Orange 30 Amp
ABS-1 12 Red 30 Amp	ABS-32 14 Red 30 Amp	ALDL – 16 C1-29 18 Red 10 Amp	Brake Light Switch – 6 18 Red 10 Amp
FCM 2,3,4,5,15 14 Red 20 Amp	SKIM – 5 18 Red 10 Amp		
Shifter – 1 18 Red/Blue 10A	FP Relay #85 Trans Relay #85 18 Green/Blue 10 Amp	C1-11 C1-12 16 Green 10 Amp	BLS-4 FCM 17 ABS-4; SKIM-3 16 Pink 10 Amp
13	14	15	16

Ignition (Run & Start)

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