EFI HARNESS KIT
558-503, 558-504 & 558-508

Kit Contents:

Main Harness
558-104: Kits 558-504 & 508
558-100: Kit 558-503

Power Harness
558-308: All Kits

Injector Harness
558-200: Kits 558-503 & 504
558-209: Kit 558-508

HEI Adapter
558-304: Kit 558-503

Tach Adapter
271R1012A: All Kits

Important Wiring "Do's and Don'ts"

An EFI system depends heavily on being supplied a clean and constant voltage source. The grounds of an electrical system are just as important as the power side.

HP and Dominator ECU's both contain multiple processing devices that require clean power and ground sources. The wiring harnesses for them must be installed in such a manner that they are separated from "dirty" power and ground sources.

DO'S

- Install the main power and ground directly to the battery.
- Keep sensor wiring away from high voltage or "noisy/dirty" components and wiring, especially secondary ignition wiring, ignition boxes and associated wiring.
- Use shielded/grounded cable that is supplied for wiring crankshaft and camshaft signals.
- Properly solder and heat shrink any wire connections.
- It is critical that the engine has a proper ground connection to the battery and chassis.
- On GM LSx engines, always install the black "ignition ground" wire in the harness to the engine block or cylinder head.

DON'TS

- **DO NOT EVER** run high voltage or "noisy/dirty" wires in parallel (bundle/loom together) with any EFI sensor wiring. If wires need to cross, try to do so at an angle.
- Do not let Crank and Cam signal wiring near spark plugs and coil wires.
- Do not run non-shielded/grounded wire for crankshaft and camshaft signals, especially magnetic pickups.
- Do not run the USB Communications cable near or with any noisy wires.
- Do not exceed the current limits provided for the various outputs. If current levels exceed these, use the appropriate relay or solenoid drivers.
- Do not use improper crimping tools.
- Don't use things like "t-taps", etc. Use solder and heat shrink.
- It is never recommended to splice/share signal wires (such as TPS, etc) between different electronic control units.
- Don't wire items that require "clean" ground or power to the same points.

Main Harness

The following quick guide overviews all connections on the “Main Harness”. The Main Harness supports all the primary engine sensors, fuel and ignition for 8 cylinder engines, the #1 wideband oxygen sensor, and the first four programmable input and output channels. There are two connectors for this harness designated as “J1A” (pin designations below that start with an A) and “J1B” (pin designations below that start with a B).

The following descriptions indicate the name of the item and the name as labeled on the harness is shown in parenthesis. The pinout for the ECU is then shown. If the wires are terminated into the same connector on every type of main harness, the connector pinout is given as well. If the connector may vary by application, such as a TPS or IAC, the connector pinout is not given. To see the connector pinout for a specific application, locate the wiring diagram themselves contained in the WIRING APPENDIX, located in the software.

Primary Sensors

Throttle Position Sensor (TPS)

Holley EFI systems work with any 0-5V throttle position sensors.

A5 – TPS Signal
A18 – Sensor Ground
A26 – Sensor +5V Reference Out

Manifold Air Pressure Sensor (MAP)

Holley EFI systems work with 1, 2, 3, 4, or 5 Bar MAP sensors. Make sure to select the proper sensor used in the software.

A18 – Sensor Ground
A23 – MAP Sensor Signal
A26 – Sensor +5v Reference Out

Coolant Temperature Sensor (CTS)

Holley EFI systems work with any 2 wire thermistor style coolant temperature sensors. Make sure to select the proper sensor in the software.

A18 – Sensor Ground
A19 – Coolant Temp In

Manifold Air Temperature Sensor (MAT)

Holley EFI systems work with any 2 wire thermistor style manifold air temperature sensors. Make sure to select the proper sensor in the software.

A11 – Manifold Air Temp In
A18 – Sensor Ground

Knock Sensor (Knock)

Holley EFI systems work with either a one wire or two wire knock sensor. Application specific harnesses will have the correct knock sensor connections installed on the harness. A Universal harness comes with a 3 pin metripak connector. If a knock sensor is added, it should be connected into this connector

A21 – Knock Sensor #2 Input **(Pin A)**
A29 – Knock Sensor #1 Input **(Pin B)**
A18 – Sensor Ground **(Pin C)**

Wide Band Oxygen Sensor (WB02)

Holley EFI systems can work with either a Bosch (PN 554-101) or NTK (PN 554-100) wide band oxygen sensor. These sensors must be purchased from Holley as they are calibrated specifically for use with Holley EFI systems.

A34 – WB1 HTR+ **(Pin A)**
A9 – WB1 HTR - **(Pin B)**
A16 – WB1 COMPR1 **(Pin C)**
A7 – WB1 CCOMPR2 **(Pin D)**
A17 – WB1 VS-/IP- **(Pin E)**
A33 – WB1 IP+ **(Pin F)**
A25 – WB1 VS+ **(Pin G)**
A8 – WB1 Shield **(Pin H)**

Fuel Pressure (Fuel)

A fuel pressure input is a standard feature on Holley EFI. A connector is installed that is plug-and-play with Holley 100 PSI pressure transducer PN 554-102. A different 0-5V transducer can be used, but the calibration must be set up as a custom sensor in the software. If these are not connected to a pressure transducer, the Fuel and Oil Pressure will read "LOW Err" in the data monitor. This will not cause any issues.

A18 – Sensor Ground **(Pin A)**
A26 – Sensor +5V Reference Out **(Pin B)**
A31 – Fuel Pressure Signal **(Pin C)**

Oil Pressure (Oil)

An oil pressure input is a standard feature on Holley EFI. A connector is installed that is plug-and-play with Holley 100 PSI pressure transducer PN 554-102. A different 0-5V transducer can be used, but the calibration must be set up as a custom sensor in the software. If these are not connected to a pressure transducer, the Fuel and Oil Pressure will read "LOW Err" in the data monitor. This will not cause any issues.

A18 – Sensor Ground **(Pin A)**
A26 – Sensor +5V Reference Out **(Pin B)**
A20 – Fuel Pressure Signal **(Pin C)**

CANbus (CAN)

All harnesses have a CANbus communications connector. This is used to communicate with CANbus devices, such as the Avenger Handheld tuning module or the 5.7" Touch Screen LCD. If these devices or any other CANbus device is not being used, there is no need to do anything with this connector.

A24 – CAN Lo **(Pin B)**
A32 – CAN Hi **(Pin A)**

Primary Outputs

Idle Air Control (IAC)

The terminated IAC connector is for a 4 wire stepper type IAC. A 2 wire PWM (Pulse Width Modulated) IAC can be used, see section 9.2. The following shows the outputs for a stepper IAC.

B1 – IAC A Lo
B2 – IAC A Hi
B8 – IAC B Lo
B9 – IAC B Hi

Fuel Injector Outputs (Injectors)

All terminated harnesses have a fuel injector connector. Various fuel injector harnesses plug into this connector. It is essential these harnesses are used so that injector firing sequence is maintained.

Note that for engines with different firing orders, you do NOT change these pins. The engine's firing order is input in the software itself. Pin's A-H are routed to the cylinder number designation for the engine (i.e. A goes to cylinder #1, B goes to cylinder #2, etc). V8 harnesses offered by Holley are labeled for GM, Ford, and Chrysler engines.

B19 – Injector A **(Pin A)**
B26 – Injector B **(Pin B)**
B25 – Injector C **(Pin C)**
B13 – Injector D **(Pin D)**
B7 – Injector E **(Pin E)**
B4 – Injector F **(Pin F)**
B5 – Injector G **(Pin G)**
B6 – Injector H **(Pin H)**
+12V Power – **(Pins J/K)**

Ignition Adapter (Ignition)

The Ignition Adapter connector contains all the wires needed to connect to adapter harnesses offered by Holley for various ignition systems and crank and cam sensor. The only ignition related wiring that is NOT contained on this connector is individual coil driver outputs for DIS applications.

The adapter is pinned as follows:
A30 – Crank signal Input – Both digital and inductive (proper type must be selected in the software) **(Pin A)**
A22 – Cam signal Input / Ignition Bypass Output– Both digital and inductive (proper type must be selected in the software) **NOTE:** If using a computer-controlled GM HEI Distributor, this pin will serve as the ignition bypass output **(Pin B)**
A14 – IPU Ground **(Pin C)**
Chassis Ground – **(Pin D)**
A10 – Switched +12v **(Pin E)**
A27 – NOT USED **(Pin F)**
A14 – IPU Ground **(Pin G)**
A28 – EST/Spout Output **(Pin H)**
A14 – Shield Ground **(Pin J)**
A14 - Shield Ground **(Pin K)**

NOTE: The crank and cam input wiring in both the main harness and adapter harnesses use a shielded/grounded cable. The shield is grounded at the ECU end. You do not ground both end of shielded/grounded cable. It is always recommended to use shield/grounded cable to protect the integrity of the crank or cam sensor input signals. This is especially important when using a magnetic pickup. A hall effect sensor is much less susceptible to noise interference and is always the recommended sensor type to use.

Holley offers the following ignition adapter harnesses:

271R1012A – "Tach Out" – This adapter connects into the "Tach Out" on a CD ignition box when the ECU is NOT controlling ignition timing. This adapter is included with all HP and Avenger TBI and Multiport Fuel Injection systems.

558-303 – Magnetic Pickup Harness – Intended for magnetic pickups. Either crank trigger or distributor mounted - Does not contain cam sync wiring.

558-304 – HEI – Connects to a small cap GM HEI computer controlled distributor

558-305 – Ford TFI – Connects to a Ford TFI Distributor.

558-306 – Universal Unterminated Ignition Harness – Contains ignition adapter connector and all wiring to connect to any crank and cam sensors (pins A-K). Also, contains shielded/grounded cable for crank and cam sensor inputs. The user must supply terminals and connectors to plug into their chosen sensors.

NOTE: See section 8.0 of the Holley EFI User Manual for diagrams on wiring most ignition systems.

Loose Wires

The following loose wires in the main wiring harness should be connected as follows on all systems:

12V Switched – Color = Red/White – Should be connected to a clean +12 volt power source. Power source should only be active when the ignition is on. Make sure source has power when engine is cranking as well. Not all sources apply power when the ignition switch is in "cranking" position.

12V Battery – Color = Red – Should be connected directly to the battery. There is a fuse holder attached that should contain a 20A rated fuse. This powers the fuel pump and fuel injectors.

12V Fuel Pump – Color = Green - Used to directly power a fuel pump (+12 volt). Fully terminated harnesses utilize a relay to supply this power. 14 gauge wire is used. Due to this, it is not recommended for pumps that draw over 10-12 Amps to use this wire. For high current pumps, use this wire to trigger a separate relay and use larger gauge wire to feed the pump - 10 gauge is recommended.

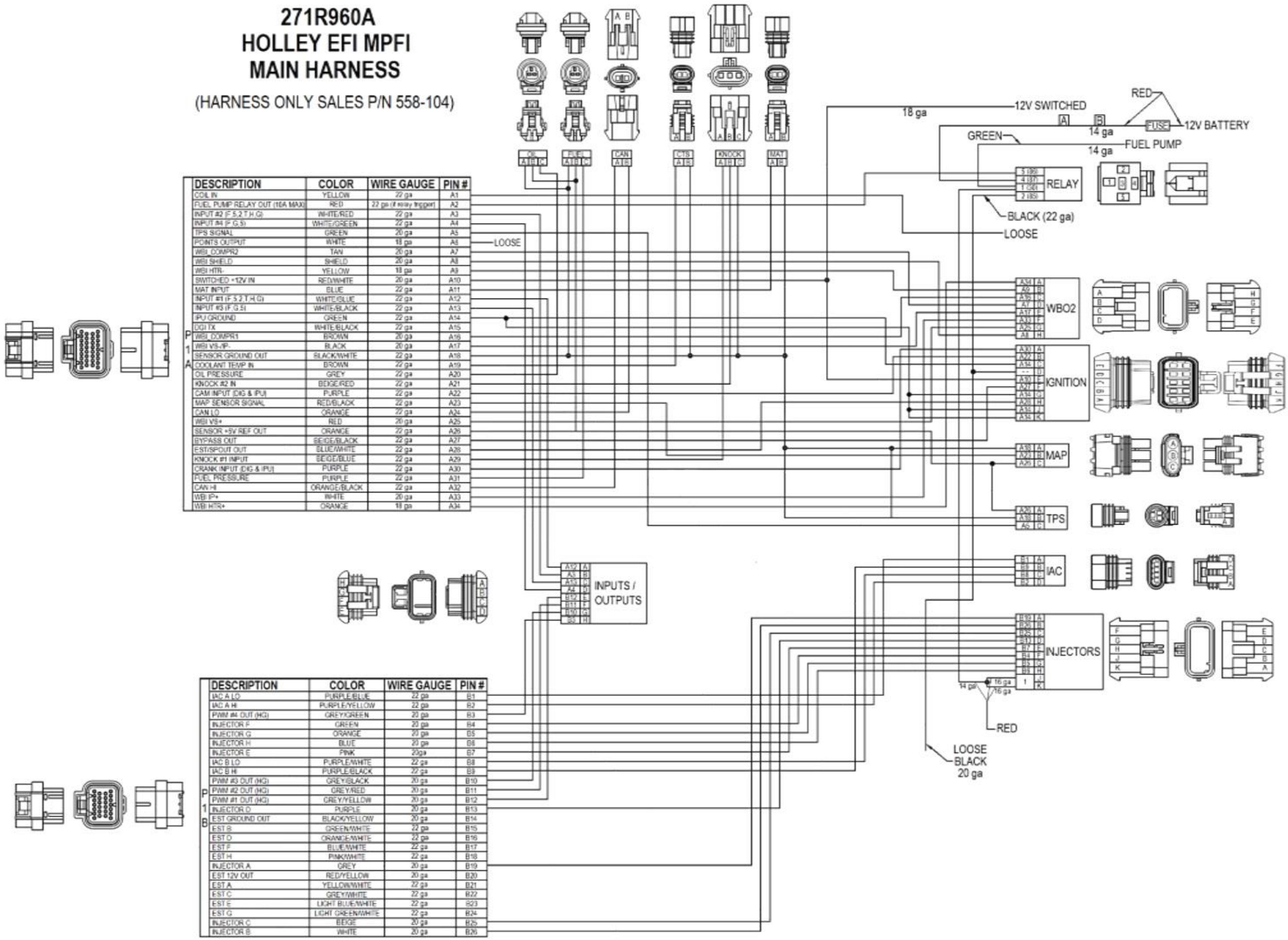
Points Output – Color = White – Used to trigger a CD ignition box. See the ignition wiring section for detailed wiring.

Ignition/DIS Chassis Ground – Color = Black – Connect to a ground point that has excellent connectivity with both the engine and the battery.

"Coil – " – Color = Yellow – Used for an RPM input signal when not controlling timing and NOT running a Capacitive Discharge (MSD) ignition system. See the ignition wiring section 8.0 for detailed wiring. **WARNING!** Connecting this wire to the coil of a CD ignition will damage the ECU.

271R960A
HOLLEY EFI MPFI
MAIN HARNESS

(HARNESS ONLY SALES P/N 558-104)



P1A

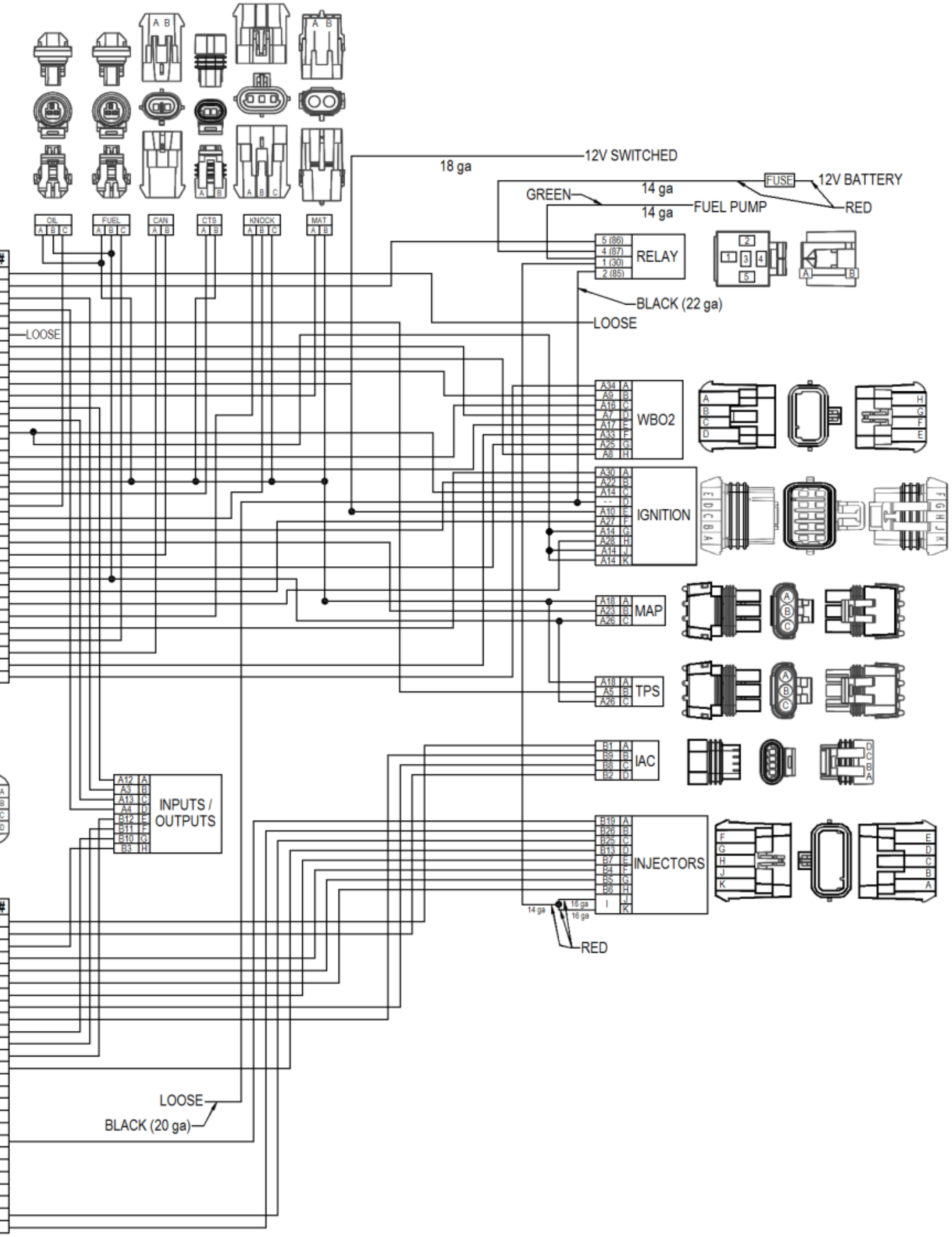
DESCRIPTION	COLOR	WIRE GAUGE	PIN #
COIL IN	YELLOW	22 ga	A1
FUEL PUMP RELAY OUT (10A MAX)	RED	22 ga (if relay trigger)	A2
INPUT #2 (F,5,2,T,H,G)	WHITE/RED	22 ga	A3
INPUT #4 (F,G,5)	WHITE/GREEN	22 ga	A4
TPS SIGNAL	GREEN	20 ga	A5
POINTS OUTPUT	WHITE	18 ga	A6
WBI_COMPR2	TAN	20 ga	A7
WBI SHIELD	SHIELD	20 ga	A8
WBI HTR-	YELLOW	18 ga	A9
SWITCHED +12V IN	RED/WHITE	20 ga	A10
MAT INPUT	BLUE	22 ga	A11
INPUT #1 (F,5,2,T,H,G)	WHITE/BLUE	22 ga	A12
INPUT #3 (F,G,5)	WHITE/BLACK	22 ga	A13
IPU GROUND	GREEN	22 ga	A14
DGI TX	WHITE/BLACK	22 ga	A15
WBI_COMPR1	BROWN	20 ga	A16
WBI VS-/IP-	BLACK	20 ga	A17
SENSOR GROUND OUT	BLACK/WHITE	22 ga	A18
COOLANT TEMP IN	BROWN	22 ga	A19
OIL PRESSURE	GREY	22 ga	A20
KNOCK #2 IN	BEIGE/RED	22 ga	A21
CAM INPUT (DIG & IPU)	PURPLE	22 ga	A22
MAP SENSOR SIGNAL	RED/BLACK	22 ga	A23
CAN LO	ORANGE	22 ga	A24
WBI VS+	RED	20 ga	A25
SENSOR +5V REF OUT	ORANGE	22 ga	A26
BYPASS OUT	BEIGE/BLACK	22 ga	A27
EST/SPOUT OUT	BLUE/WHITE	22 ga	A28
KNOCK #1 INPUT	BEIGE/BLUE	22 ga	A29
CRANK INPUT (DIG & IPU)	PURPLE	22 ga	A30
FUEL PRESSURE	PURPLE	22 ga	A31
CAN HI	ORANGE/BLACK	22 ga	A32
WBI IP+	WHITE	20 ga	A33
WBI HTR+	ORANGE	18 ga	A34

P1B

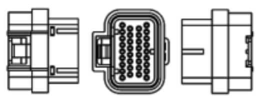
DESCRIPTION	COLOR	WIRE GAUGE	PIN #
IAC A LO	PURPLE/BLUE	22 ga	B1
IAC A HI	PURPLE/YELLOW	22 ga	B2
PWM #4 OUT (HG)	GREY/GREEN	20 ga	B3
INJECTOR F	GREEN	20 ga	B4
INJECTOR G	ORANGE	20 ga	B5
INJECTOR H	BLUE	20 ga	B6
INJECTOR E	PINK	20ga	B7
IAC B LO	PURPLE/WHITE	22 ga	B8
IAC B HI	PURPLE/BLACK	22 ga	B9
PWM #3 OUT (HG)	GREY/BLACK	20 ga	B10
PWM #2 OUT (HG)	GREY/RED	20 ga	B11
PWM #1 OUT (HG)	GREY/YELLOW	20 ga	B12
INJECTOR D	PURPLE	20 ga	B13
EST GROUND OUT	BLACK/YELLOW	20 ga	B14
EST B	GREEN/WHITE	22 ga	B15
EST D	ORANGE/WHITE	22 ga	B16
EST F	BLUE/WHITE	22 ga	B17
EST H	PINK/WHITE	22 ga	B18
INJECTOR A	GREY	20 ga	B19
EST 12V OUT	RED/YELLOW	20 ga	B20
EST A	YELLOW/WHITE	22 ga	B21
EST C	GREY/WHITE	22 ga	B22
EST E	LIGHT BLUE/WHITE	22 ga	B23
EST G	LIGHT GREEN/WHITE	22 ga	B24
INJECTOR C	BEIGE	20 ga	B25
INJECTOR B	WHITE	20 ga	B26

271R961A
HOLLEY EFI 4BBL
TBI HARNESS

(HARNESS ONLY SALES P/N 558-100)



P1A



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COIL - IN	YELLOW	22 ga	A1
FUEL PUMP RELAY OUT (10A MAX)	RED	22 ga (if relay trigger)	A2
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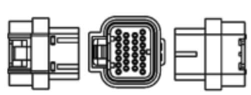
INPUT #4 (F,G,5)	WHITE/GREEN	22 ga	A4
TPS SIGNAL	GREEN	20 ga	A5
POINTS OUTPUT	WHITE	18 ga	A6
WBI_COMPR2	TAN	20 ga	A7
WBI SHIELD	SHIELD	20 ga	A8
WBI HTR -	YELLOW	18 ga	A9
SWITCHED +12V IN	RED/WHITE	20 ga	A10
MAT INPUT	BLUE	22 ga	A11
INPUT #1 (F,5,2,T,H,G)	WHITE/BLUE	22 ga	A12
INPUT #3 (F,G,5)	WHITE/BLACK	22 ga	A13
IPU GROUND	GREEN	22 ga	A14
DGI TX	WHITE/BLACK	22 ga	A15
WBI_COMPR1	BROWN	20 ga	A16
WBI VS-/IP-	BLACK	20 ga	A17
SENSOR GROUND OUT	BLACK/WHITE	22 ga	A18
COOLANT TEMP IN	BROWN	22 ga	A19
OIL PRESSURE	GREY	22 ga	A20
KNOCK #2 IN	BEIGE/RED	22 ga	A21
CAM INPUT (DIG & IPU)	PURPLE	22 ga	A22
MAP SENSOR SIGNAL	RED/BLACK	22 ga	A23
CAN LO	ORANGE	22 ga	A24
WBI VS+	RED	20 ga	A25
SENSOR +5V REF OUT	ORANGE	22 ga	A26
BYPASS OUT	BEIGE/BLACK	22 ga	A27
EST/SPOUT OUT	BLUE/WHITE	22 ga	A28
KNOCK #1 INPUT	BEIGE/BLUE	22 ga	A29
CRANK INPUT (DIG & IPU)	PURPLE	22 ga	A30
FUEL PRESSURE	PURPLE	22 ga	A31
CAN HI	ORANGE/BLACK	22 ga	A32
WBI IP+	WHITE	20 ga	A33
WBI HTR+	ORANGE	18 ga	A34

P1B



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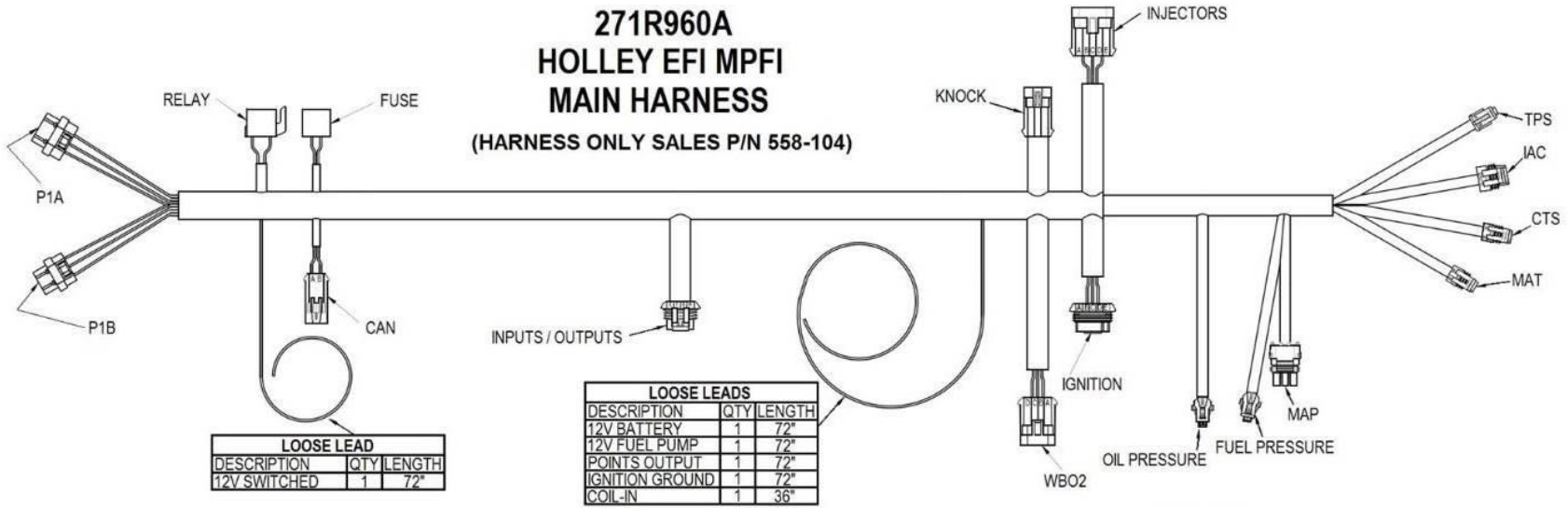
IAC A LO	PURPLE/BLUE	22 ga	B1
IAC A HI	PURPLE/YELLOW	22 ga	B2
PWM #4 OUT (HG)	GREY/GREEN	20 ga	B3
INJECTOR F	GREEN	20 ga	B4
INJECTOR G	ORANGE	20 ga	B5
INJECTOR H	BLUE	20 ga	B6
INJECTOR E	PINK	20 ga	B7
IAC B LO	PURPLE/WHITE	22 ga	B8
IAC B HI	PURPLE/BLACK	22 ga	B9
PWM #3 OUT (HG)	GREY/BLACK	20 ga	B10
PWM #2 OUT (HG)	GREY/RED	20 ga	B11
PWM #1 OUT (HG)	GREY/YELLOW	20 ga	B12
INJECTOR D	PURPLE	20 ga	B13
EST GROUND OUT	BLACK/YELLOW	20 ga	B14
EST B	GREEN/WHITE	22 ga	B15
EST D	ORANGE/WHITE	22 ga	B16
EST F	BLUE/WHITE	22 ga	B17
EST H	PINK/WHITE	22 ga	B18
INJECTOR A	GREY	20 ga	B19
EST 12V OUT	RED/YELLOW	20 ga	B20
EST A	YELLOW/WHITE	22 ga	B21
EST C	GREY/WHITE	22 ga	B22
EST E	LT. BLUE/WHITE	22 ga	B23
EST G	LT. GREEN/WHITE	22 ga	B24
INJECTOR C	BEIGE	20 ga	B25
INJECTOR B	WHITE	20 ga	B26

271R960A
HOLLEY EFI MPFI
MAIN HARNESS

(HARNESS ONLY SALES P/N 558-104)

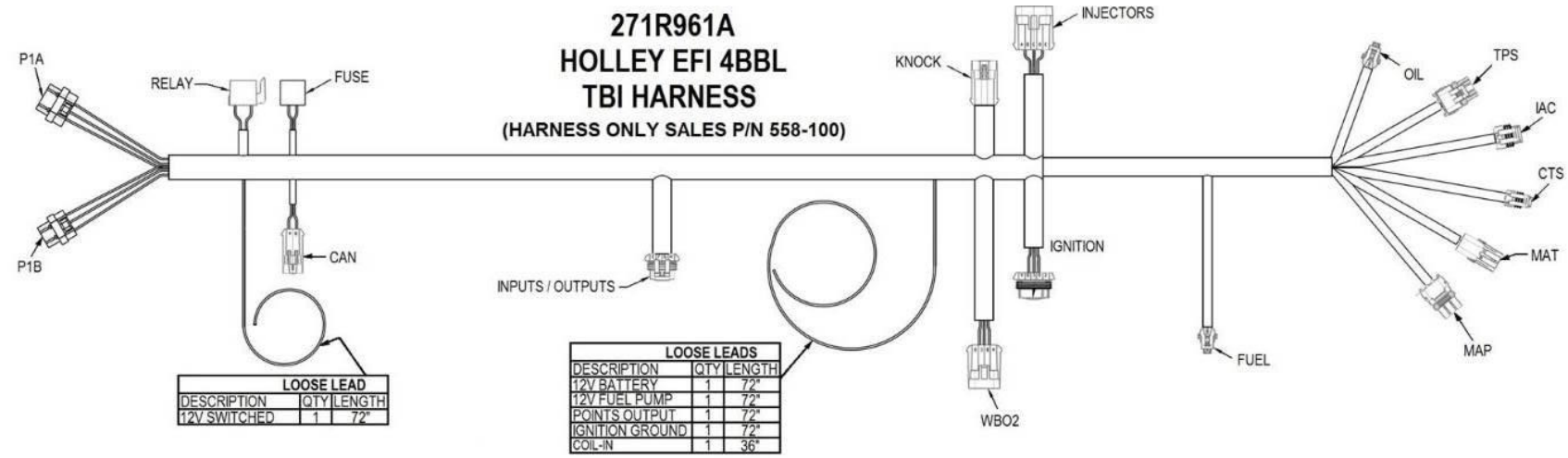


LOOSE LEAD		
DESCRIPTION	QTY	LENGTH
12V SWITCHED	1	72"

LOOSE LEADS		
DESCRIPTION	QTY	LENGTH
12V BATTERY	1	72"
12V FUEL PUMP	1	72"
POINTS OUTPUT	1	72"
IGNITION GROUND	1	72"
COIL-IN	1	36"

271R961A
HOLLEY EFI 4BBL
TBI HARNESS

(HARNESS ONLY SALES P/N 558-100)



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12V BATTERY	1	72"
12V FUEL PUMP	1	72"
POINTS OUTPUT	1	72"
IGNITION GROUND	1	72"
COIL-IN	1	36"

ECU Pinout

The following is a pinout of the J1A and J1B connectors.

NOTE: ECU pinout is identical for the HP and Dominator.

J1A Connector

Pin	Function
A1	Coil - Input
A2	Fuel Pump Out (+12v) (10A Max)
A3	Input #2 (F52THG)
A4	Input #4 (F5G)
A5	TPS Input
A6	Points Trigger Output
A7	WB1 COMPR2
A8	WB1 Shield
A9	WB HTR -
A10	Switched +12v Input
A11	Manifold Air Temp Input
A12	Input #1 (F52THG)
A13	Input #3 (F5G)
A14	Cam/Crank Ground
A15	Gauge Digital Output
A16	WB1 COMPR1
A17	WB1 VS-/IP+
A18	Sensor Ground
A19	Engine Coolant Temp Input
A20	Oil Pressure Input
A21	Knock #2 Input
A22	Cam Sync Input / Ignition Bypass Output
A23	Map Sensor Input
A24	CAN Lo
A25	WB1 VS+
A26	Sensor +5v
A27	NOT USED
A28	EST/Spout Output
A29	Knock #1 Input
A30	Crank Speed Input
A31	Fuel Pressure Input
A32	CAN Hi
A33	WB1 IP+
A34	WB HTR +

J1B Connector

Pin	Function
B1	IAC A Lo
B2	IAC A Hi
B3	Output #4 (G P-)
B4	Injector F Output
B5	Injector G Output
B6	Injector H Output
B7	Injector E Output
B8	IAC B Lo
B9	IAC B Hi
B10	Output #3 (G P-)
B11	Output #2 (H P+)
B12	Output #1 (H P+)
B13	Injector D Output
B14	EST Ground Output
B15	EST 2 Output (Cylinder #2)
B16	EST 4 Output (Cylinder #4)
B17	EST 6 Output (Cylinder #6)
B18	EST 8 Output (Cylinder #8)
B19	Injector A Output
B20	EST 12V Output
B21	EST 1 Output (Cylinder #1)
B22	EST 3 Output (Cylinder #3)
B23	EST 5 Output (Cylinder #5)
B24	EST 7 Output (Cylinder #7)
B25	Injector C Output
B26	Injector B Output

Holley Technical Support
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