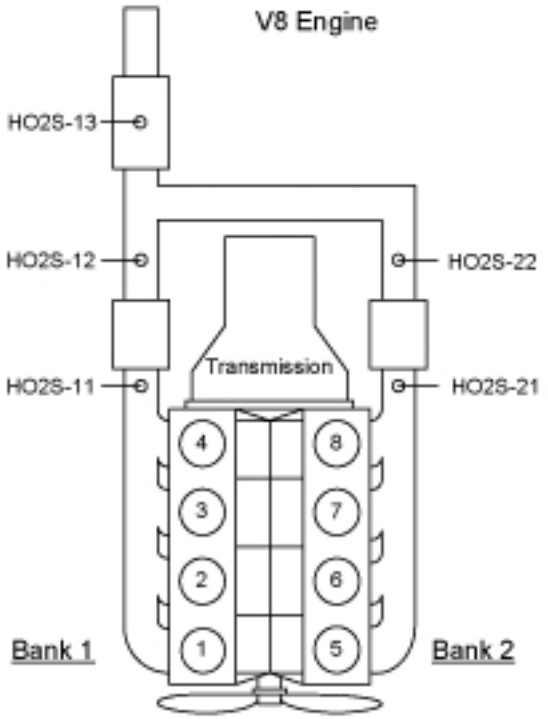
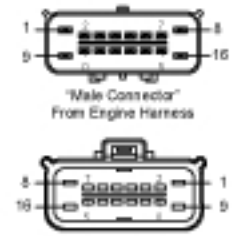
Generic Engine View



This transmittal reflects the Powertrain Controls Program Assumptions at time of release, and is subject to revision.

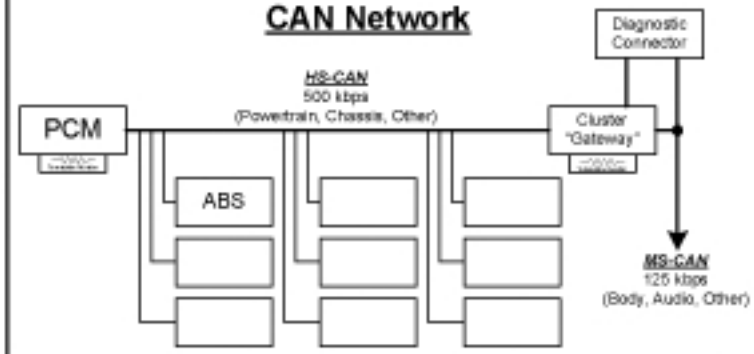
16 Way Aux. Engine Connector



PIN	PRIMARY FUNCTION
1	VPWR #4 (Ignition Coils)
2	VPWR #3 (Non-MIL Loads) AC Low PSI Switch
3	Alternator COMMAND
4	ACCS
5	Oil Pressure Switch (OPS)
6	
7	ACPSW
8	
9	VPWRF (Fuel Injectors)
10	EVMV
11	SCIPC
12	Shield Ground/Power Ground (Return)
13	
14	FPM2
15	
16	VPWR #2 (MIL Loads) EGR, HEGO's, Relays, etc.

NOTE: Pin assignments are required for Powertrain Power Distribution Architecture and commonality. Refer to PTWIRING SDS requirement PL-0045. Unused pins are managed by EESE.

CAN Network



Powertrain Engineering Wiring Design Transmittal

Powertrain Wiring Design Transmittal – Notes:

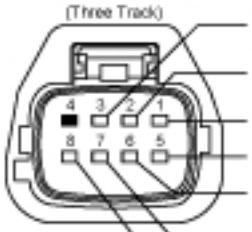
~ Schematic connectors are NOT to actual size.
~ All connectors shown, are looking INTO the harness mating connector.
~ Connector information supplied by component D&R Engineers Component Device Transmittals.
~ Terminal plating designations are as follows: Tin – No Designator (e.g., HTR11 E70);
Gold – Asterisk [*] (e.g., * HO2S11 E28); Silver – Pound [#] (e.g., # HTR11 E70).
~ Refer to the Component Device Transmittals (ICD/CDT) for connector and terminal information.
~ All Powertrain wiring must adhere to the "PTWIRING -SDS".
~ All wiring must adhere to EESE specifications, including fusing and EMC compatibility.
~ This PWDT reflects the Powertrain Controls Assumptions at time of release, and is subject to change.

Table of Contents

Wiring Design Transmittal's to be retained for two years from Job 1

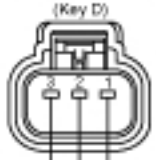
INPUT

APPS
Accelerator Pedal
Position Sensor



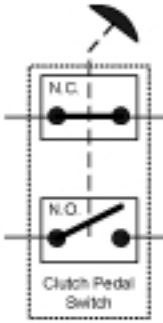
* SIGRTN (C) C-41
* APP1 C-5
* ETCRTN (A) C-6, C-43
* APP2 C-17
* ETCREF (A) C-4
* ETCREF (B) C-24
* APP3 C-28

FTPT
Fuel Tank
Pressure Transducer



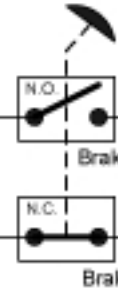
FTPT C-3
SIGRTN (C) C-41
FTPTREF C-40

Clutch Pedal
(MTX ONLY)



PWRGND → CPP-TT C-39
PWRGND → CPP-BT C-33

Brake Pedal



(Always Hot)
Fused to VBAT → BOO C-8
Brake On/Off Switch
(Stop Lamp Switch)
Power from PDJB → BPS C-9
Brake Pedal Switch
(Speed Control Deactivation)

Speed Control

Steering Wheel Clock Spring → SCCS C-19
Steering Wheel Clock Spring → SCCSRTN C-30

Note: SCCSRTN to be shared with NO other circuits
Must comply with PL-0044 SDS

Restraint Deployment Indicator

RDM → RDI C-20

OUTPUT

CANVNT
Carbon Canister
Vent Valve

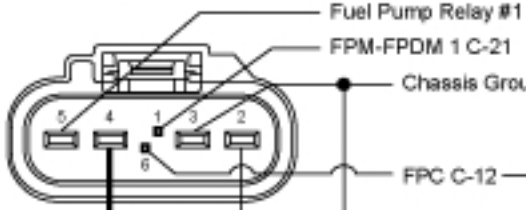
CANVNT C-13
VPWR #3

ACPT
AC Pressure
Transducer

* SIGRTN (E) E-58
* ACPT C-26
* VREF (E) E-57

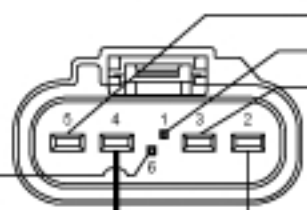
OTHER

Fuel Pump #1 SFPDM



Fuel Pump Relay #1
FPM-FPDM 1 C-21
Chassis Ground
FPC C-12
FP PWR
FP PWR Return
Fuel Pump Motor #1

Fuel Pump #2 SFPDM



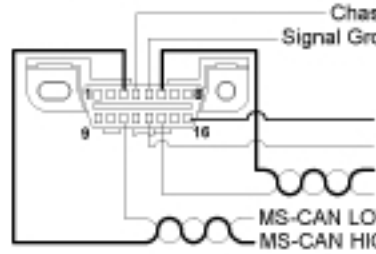
Fuel Pump Relay #2
FPM-FPDM T-18
Chassis Ground
FP PWR
FP PWR Return
Fuel Pump Motor #2

For Development Only
(Functions only available from the Breakout Box)

CTO - Clean Tachometer Output
Output is used to provide an indication of engine RPM to other modules ← CTO C-25

VSOUT – Vehicle Speed Output
PWM signal from the PCM which communicates vehicle speed to other modules ← VSOUT C-1

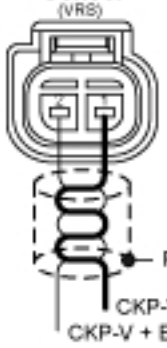
Diagnostic / Data Link Connector



Chassis Ground
Signal Ground
B+ (Unswitched)
FEPS C-44
HS-CAN HIGH C-11
HS-CAN LOW C-23
MS-CAN LOW
MS-CAN HIGH

INPUT

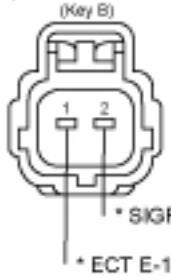
CKP
Crankshaft Position Sensor
(VRS)



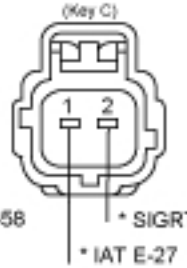
CMP
Camshaft Position Sensor
(VRS)

CHT
Cylinder Head Temperature Sensor
(Key L)

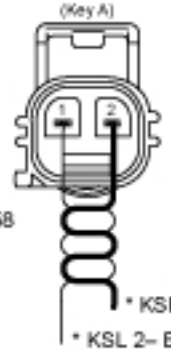
ECT
Engine Coolant Temperature Sensor
(Key B)



IAT2
Intake Air Temperature Sensor
(Key C)



KS
Knock Sensor's
(Bank 2)
(Key A)

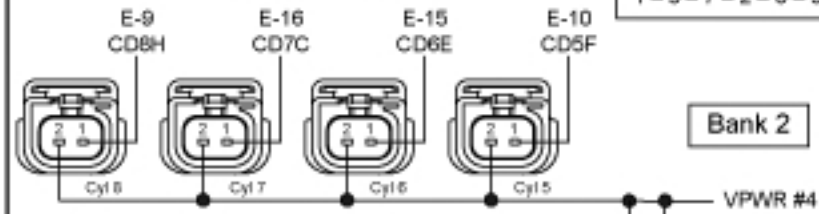


(Bank 1)
(Key A)

OUTPUT

COP - Coil on Plug

Engine Firing Order
1 – 3 – 7 – 2 – 6 – 5 – 4 - 8



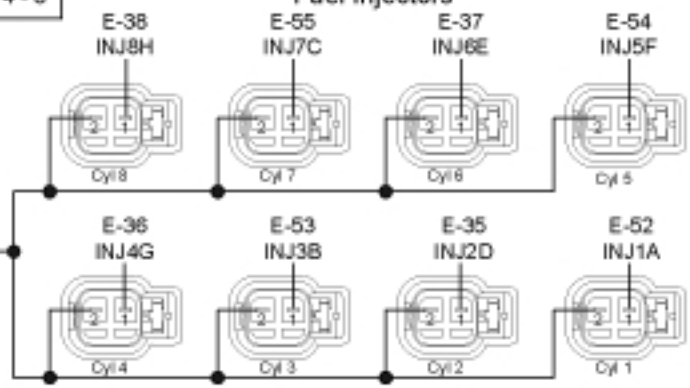
Bank 2

Bank 1

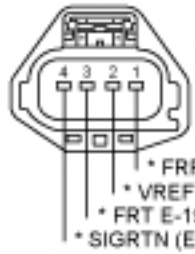
VPWRF

Radio Suppressor Capacitor
MUST Comply tith
ED-0780 SDS

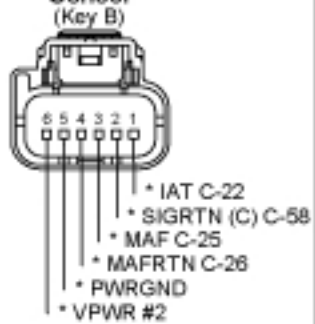
INJ
Fuel Injectors



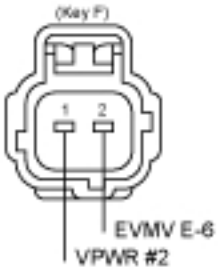
FRPT
Fuel Rail Pressure Temperature Sensor



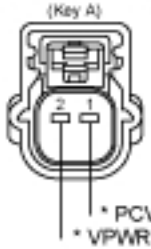
MAF/IAT
Mass Air Flow
Intake Ambient Temperature Sensor
(Key B)



EVMV
Electric Vapor Management Valve
(Key F)



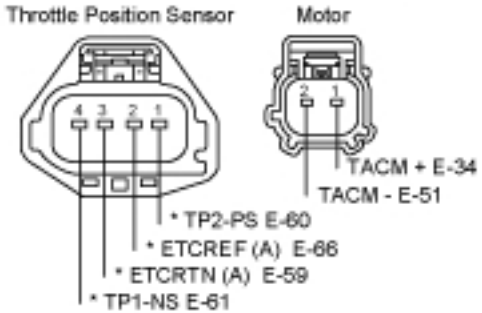
PCVHC
Positive Crankcase Ventilation Valve Heater Control
(Key A)



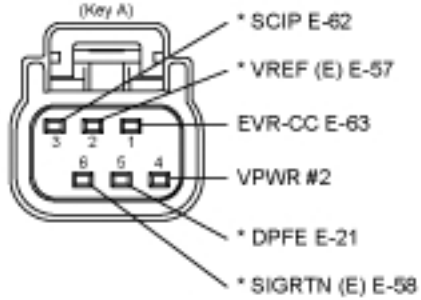
RLSC
Reverse Lockout Solenoid

OTHER

ETB
Electronic Throttle Body

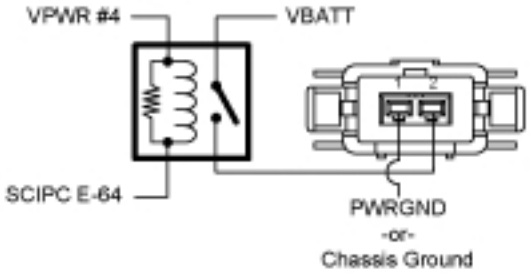


ESM
EGR System Module



ALTERNATOR

SCIPC
Super Charger Intercooler Pump Control

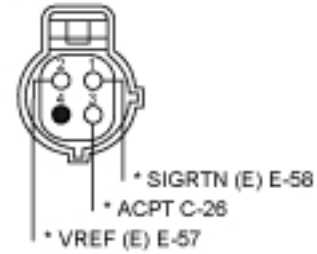


Engine Cooling Fan Control

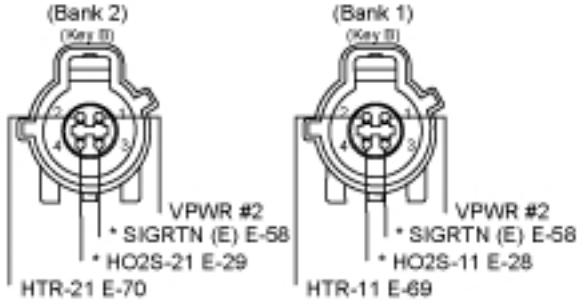
FC-1 E-7 → One Fan Relay Coil
FC-2 E-4 → Two Fan Relay Coils in Parallel

Note: Fan Relay Coil High Side is tied to VPWR #3

ACPT
AC Pressure Transducer



HEGO *Upstream*
Heated Exhaust Gas Oxygen Sensor



ENGINE		5.4L-4V SC / TR6060 (MTX)
E4	FC (1-3)-2	X
E5	GENLI	X
E6	EWMV	X
E7	FC (1-3)-1	X
E9	COP (A-H)-8H	X
E10	COP (A-H)-5F	X
E11	COP (A-H)-2D	X
E12	COP (A-H)-3B	X
E14	COP (A-H)-4G	X
E15	COP (A-H)-6E	X
E16	COP (A-H)-7C	X
E17	COP (A-H)-1A	X
E18	ECT	X
E19	FRT	X
E21	DPFE	X
E22	IAT-1	X
E23	INJPWRM	X
E25	MAF(+)-+	X
E26	MAF(+)--	X
E27	IAT-2	X
E28	HO2S(XY)-11	X
E29	HO2S(XY)-21	X
E30	KSL-2-	X
E31	KSL-2+	X
E32	FPP	X
E34	TACM (+-)-+	X
E35	INJ (1-10)-2D	X
E36	INJ (1-10)-4G	X
E37	INJ (1-10)-6E	X
E38	INJ (1-10)-8H	X
E41	CHT	X
E45	CMP	X
E46	CKP-V--	X
E47	CKP-V-+	X
E48	KSL-1-	X
E49	KSL-1+	X
E51	TACM (+-)--	X
E52	INJ (1-10)-1A	X
E53	INJ (1-10)-3B	X
E54	INJ (1-10)-5F	X
E55	INJ (1-10)-7C	X
E57	VREF	X
E58	SIGRTN	X
E59	ETCRTN	X
E60	TP2-PS	X
E61	TP1-NS	X
E62	SCIP	X
E63	EVR	X
E64	SCIPC	X
E66	ETCREF	X
E67	PCVHC	X
E68	RLSC	X
E69	HTR-11	X
E70	HTR-21	X

COWL		5.4L-4V SC / TR6060 (MTX)
C1	VSOUT	X
C2	SMC	X
C3	FTPT	X
C4	ETCREF	X
C5	APP (1)-1	X
C6	ETCRTN	X
C7	SMR	X
C8	BOO	X
C9	BPS	X
C10	CSEGND	X
C11	CAN (+ -)-+	X
C12	FPC	X
C13	CANVNT	X
C14	ACCR	X
C17	APP (2-3)-2	X
C19	SCCS	X
C20	PDI	X
C21	FPM-FPDM-1	X
C23	CAN (+ -)--	X
C24	ETCREF	X
C25	CTO	X
C26	ACPSW	X
C28	APP (2-3)-3	X
C30	SCCSRTN	X
C32	GENRC	X
C33	CPP-BT	X
C35	VPWR	X
C36	VPWR	X
C37	PCMRC	X
C39	CPP-TT	X
C40	FTPTREF	X
C41	SIGRTN	X
C43	ETCRTN	X
C44	FEPS	X
C45	KAPWR	X
C46	ISP-R	X
C47	PWRGND	X
C48	PWRGND	X
C49	PWRGND	X
C50	PWRGND	X

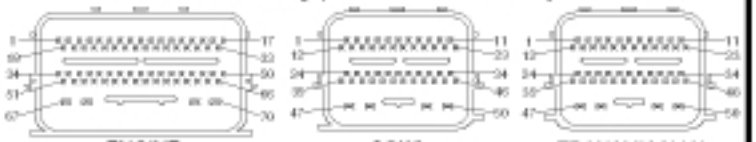
TRANS		5.4L-4V SC / TR6060 (MTX)
T3	OSS	X
T14	CAN (+ -)-Dev+	X
T18	FPM-FPDM-2	X
T21	RS	X
T24	HO2S(XY)-12	X
T25	HO2S(XY)-22	X
T26	CAN (+ -)-Dev-	X
T41	SIGRTN	X
T47	HTR-12	X
T48	HTR-22	X

NOTE: The J1 composite pinout shown is for Reference only, and may include signal names that are not used in this design transmittal.

PCM Family "170 Pin"

PCM - HEADER VIEW

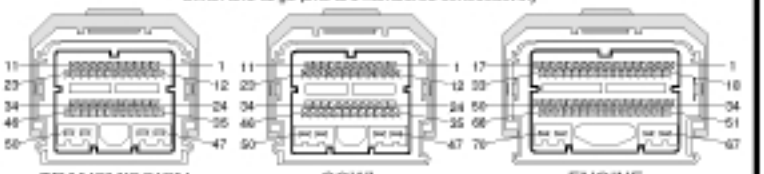
Small terminals are all # SILVER plated, Large terminals are TIN plated
Small and large pins are numbered consecutively



ENGINE Pocket | COWL Pocket | TRANSMISSION Pocket

PCM – MATING CONNECTOR'S

Small terminals are all # SILVER plated, Large terminals are TIN plated
Small and large pins are numbered consecutively



TRANSMISSION Pocket | COWL Pocket | ENGINE Pocket