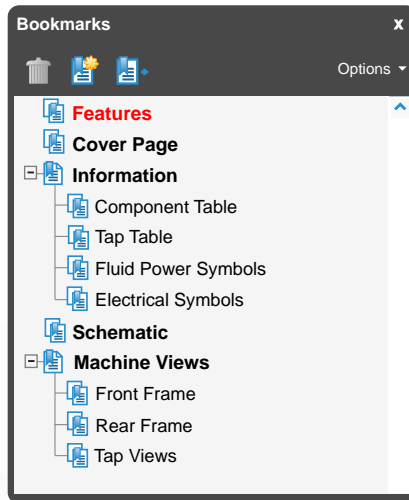


INTERACTIVE SCHEMATIC



This document is best viewed at a screen resolution of 1024 X 768.

To set your screen resolution do the following:

RIGHT CLICK on the **DESKTOP**.

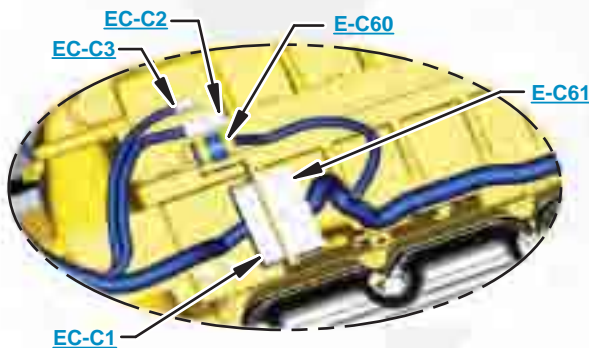
Select **PROPERTIES**.

CLICK the **SETTINGS** TAB.

MOVE THE SLIDER under **SCREEN RESOLUTION** until it shows **1024 X 768**.

CLICK OK to apply the resolution.

The Bookmarks panel will allow you to quickly navigate to points of interest.



Click on any text that is BLUE and underlined. These are hyperlinks that can be used to navigate the schematic and machine views.

VIEW ALL CALLOUTS

When only one callout is showing on a machine view this button will make all of the callouts visible. This button is located in the top right corner of every machine view page.

HOTKEYS (Keyboard Shortcuts)

	FUNCTION	KEYS
	Zoom In	"CTRL" / "+"
	Zoom Out	"CTRL" / "-"
	Fit to Page	"CTRL" / "0" (zero)
	Hand Tool	"SPACEBAR" (hold down)
	Find	"CTRL" / "F"



Schematic

C13 On-Highway Engine Electrical System

LEE9700-UP

Related Electrical Service Manuals

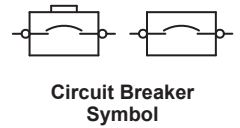
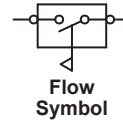
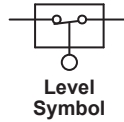
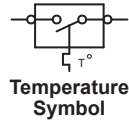
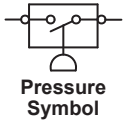
Title	Form Number
Troubleshooting	REN9343
Systems Operation / Testing and Adjusting	REN9808

HARNESS and WIRE

Electrical Schematic Symbols



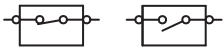
Symbols



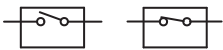
Symbols and Definitions



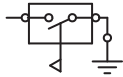
Fuse: A component in an electrical circuit that will open the circuit if too much current flows through it.



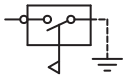
Switch (Normally Open): A switch that will close at a specified point (temp, press, etc.). The circle indicates that the component has screw terminals and a wire can be disconnected from it.



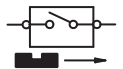
Switch (Normally Closed): A switch that will open at a specified point (temp, press, etc.). No circle indicates that the wire cannot be disconnected from the component.



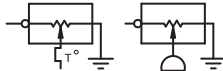
Ground (Wired): This indicates that the component is connected to a grounded wire. The grounded wire is fastened to the machine.



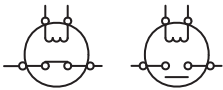
Ground (Case): This indicates that the component does not have a wire connected to ground. It is grounded by being fastened to the machine.



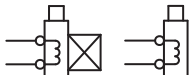
Reed Switch: A switch whose contacts are controlled by a magnet. A magnet closes the contacts of a normally open reed switch; it opens the contacts of a normally closed reed switch.



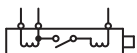
Sender: A component that is used with a temperature or pressure gauge. The sender measures the temperature or pressure. Its resistance changes to give an indication to the gauge of the temperature or pressure.



Relay (Magnetic Switch): A relay is an electrical component that is activated by electricity. It has a coil that makes an electromagnet when current flows through it. The electromagnet can open or close the switch part of the relay.



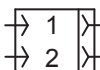
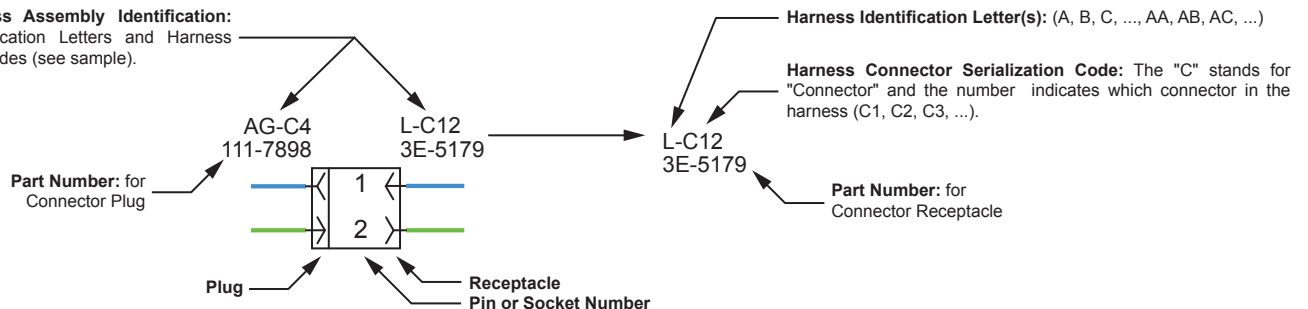
Solenoid: A solenoid is an electrical component that is activated by electricity. It has a coil that makes an electromagnet when current flows through it. The electromagnet can open or close a valve or move a piece of metal that can do work.



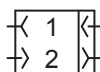
Magnetic Latch Solenoid: A magnetic latch solenoid is an electrical component that is activated by electricity and held latched by a permanent magnet. It has two coils (latch and unlatch) that make electromagnet when current flows through them. It also has an internal switch that places the latch coil circuit open at the time the coil latches.

Harness and Wire Symbols

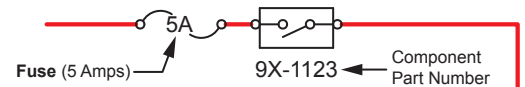
Wire, Cable, or Harness Assembly Identification:
Includes Harness Identification Letters and Harness Connector Serialization Codes (see sample).



Deutsch connector: Typical representation of a Deutsch connector. The plug contains all sockets and the receptacle contains all pins.



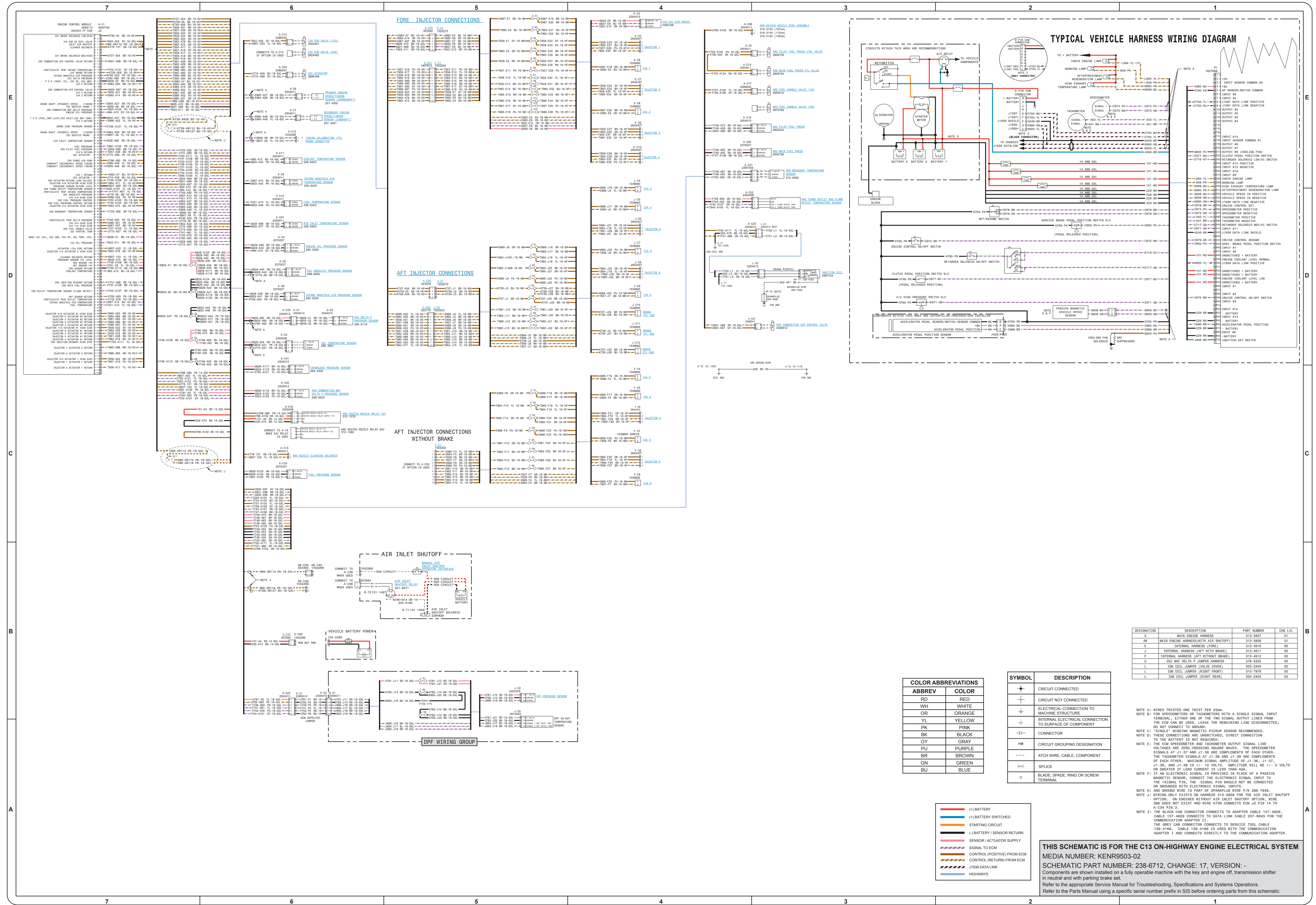
Sure-Seal connector: Typical representation of a Sure-Seal connector. The plug and receptacle contain both pins and sockets.



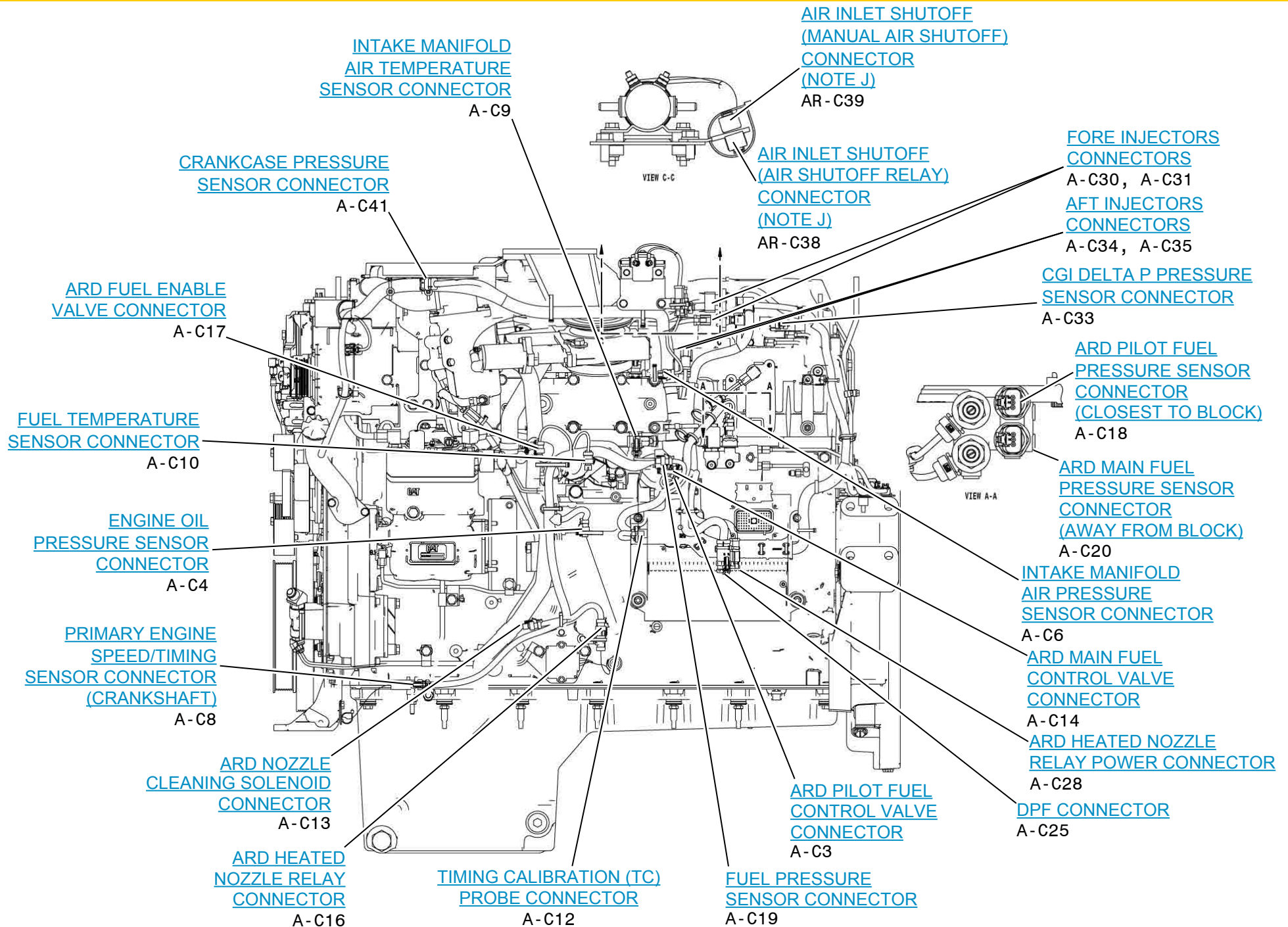
Harness identification code:
This example indicates wire group 325, wire 135 in harness "AG".

Wire Gauge

Wire Color



LEFT SIDE VIEW OF ENGINE

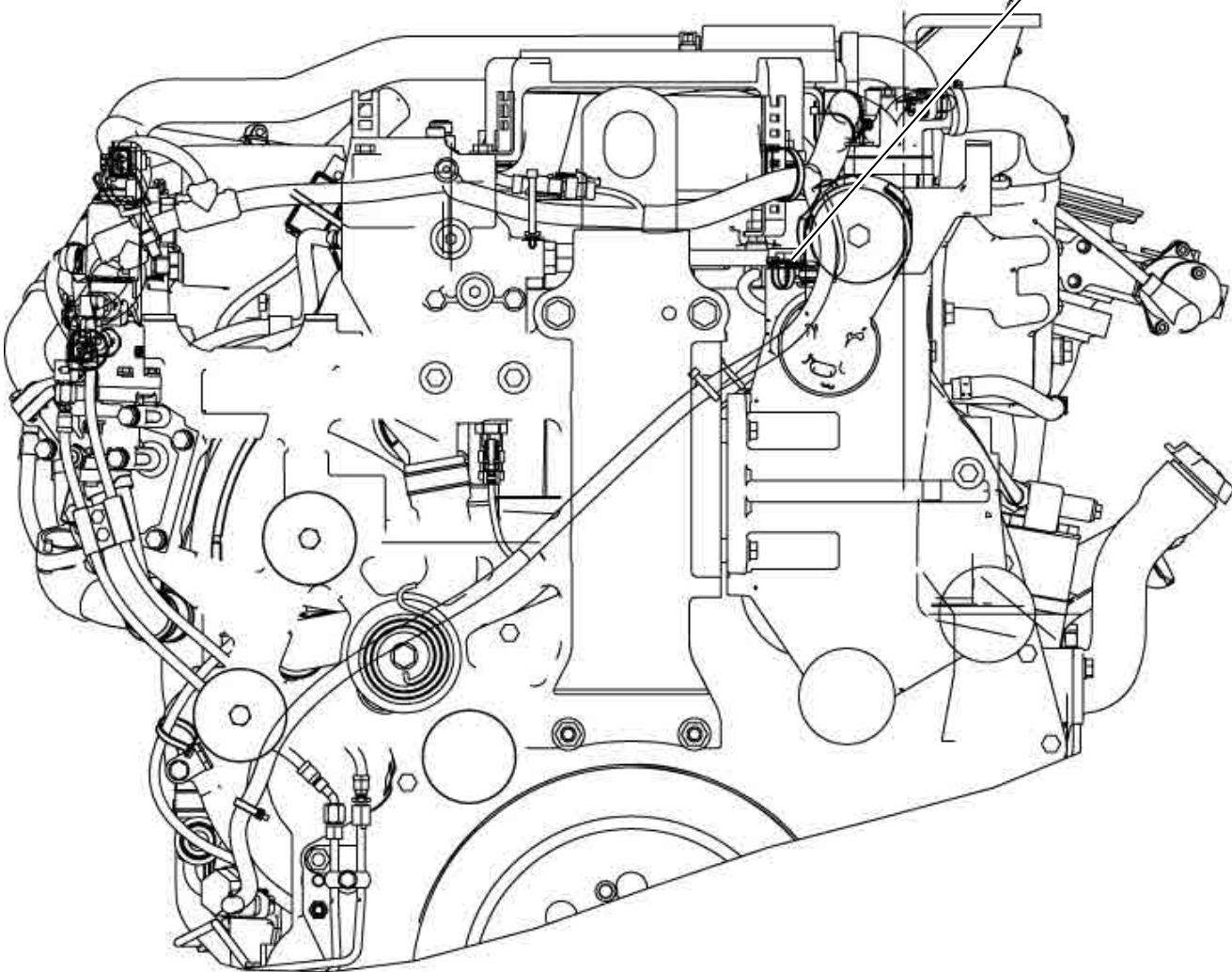


REAR VIEW OF ENGINE



SECONDARY ENGINE
SPEED/TIMING
SENSOR CONNECTOR
(CAMSHAFT)

A-C7



RIGHT SIDE VIEW OF ENGINE



AIR INLET
TEMPERATURE SENSOR
CONNECTOR

A-C37

ARD COMBUSTION MAF
DELTA P PRESSURE SENSOR
CONNECTOR

A-C42

CGI ACTUATOR
CONNECTOR

A-C24

ARD COMBUSTION
AIR CONTROL VALVE
CONNECTOR

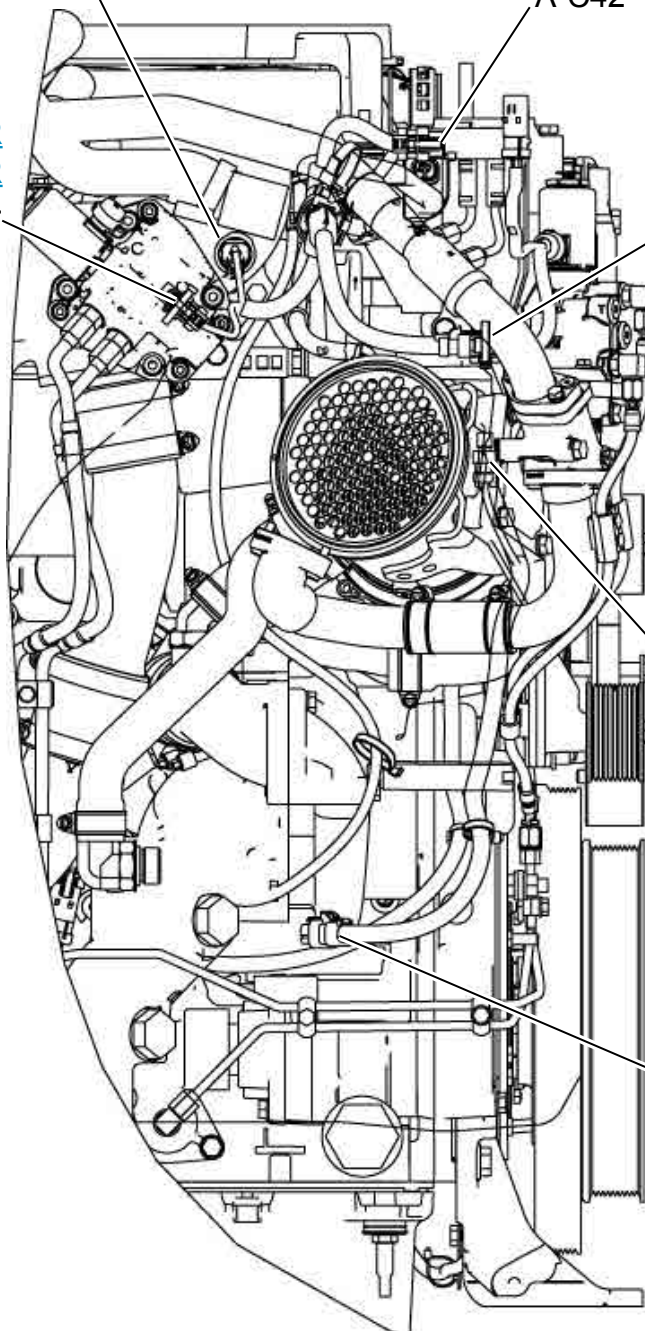
A-C27

COOLANT TEMPERATURE
SENSOR CONNECTOR

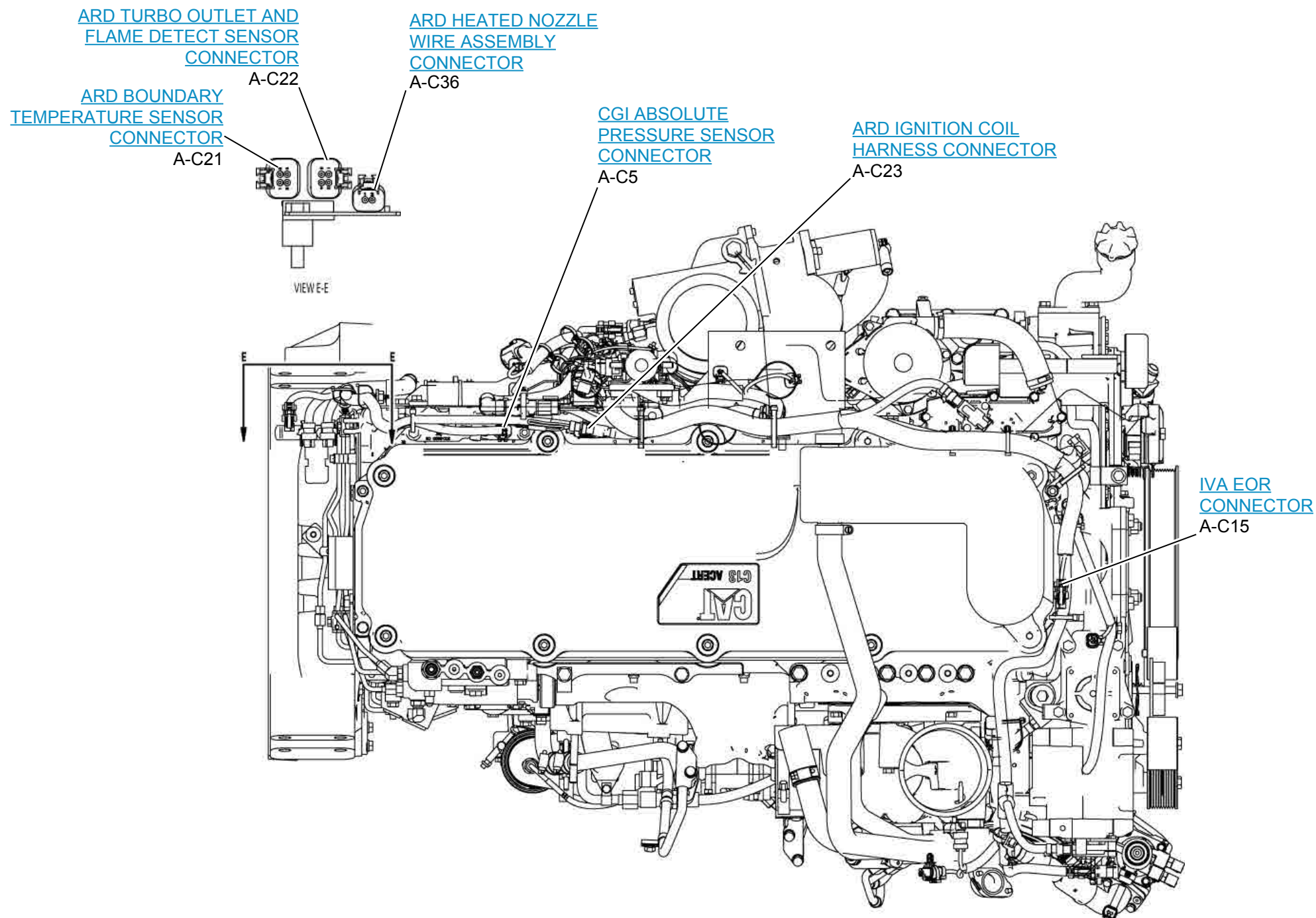
A-C11

CGI TEMPERATURE
SENSOR
CONNECTOR

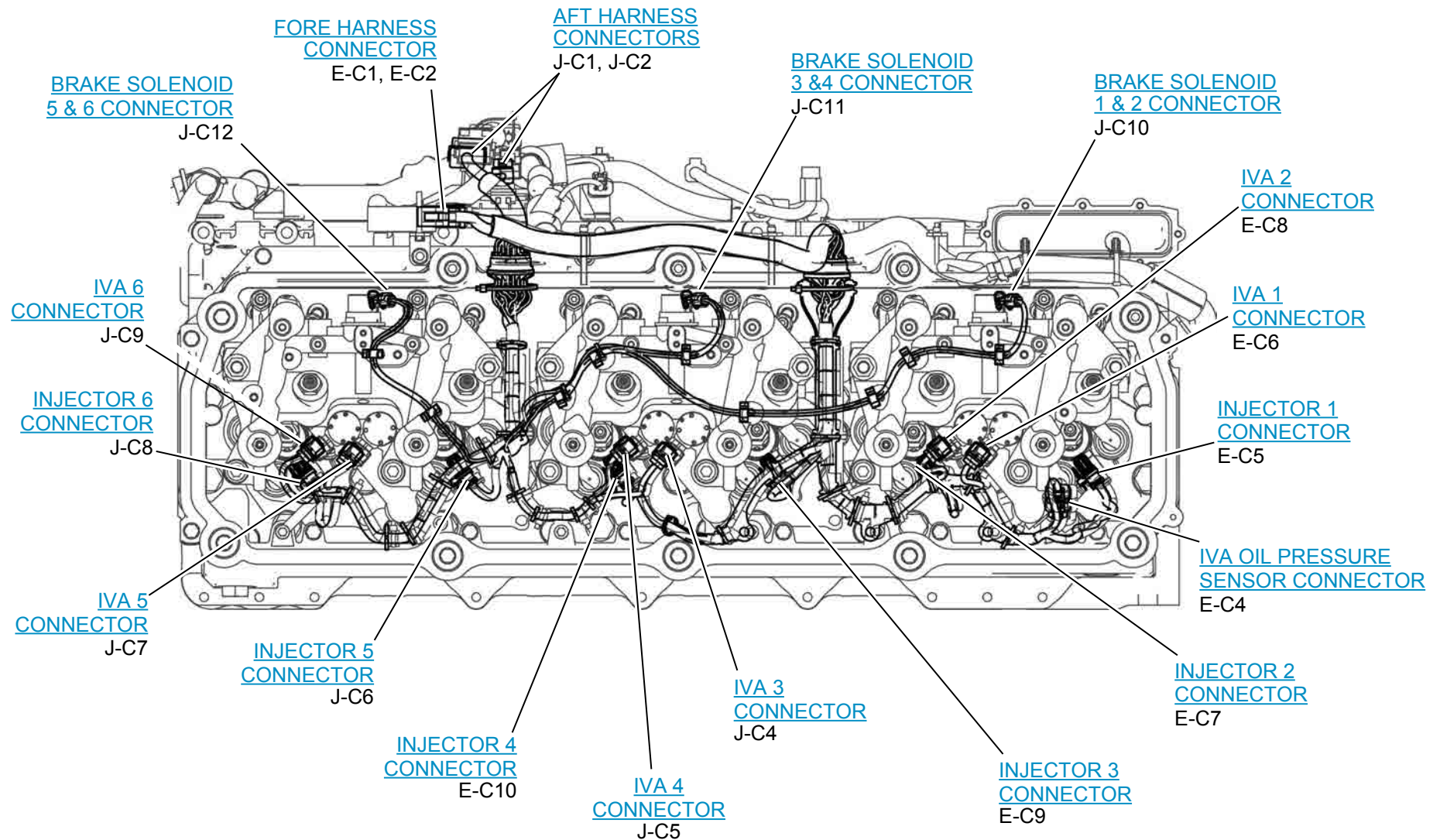
A-C2



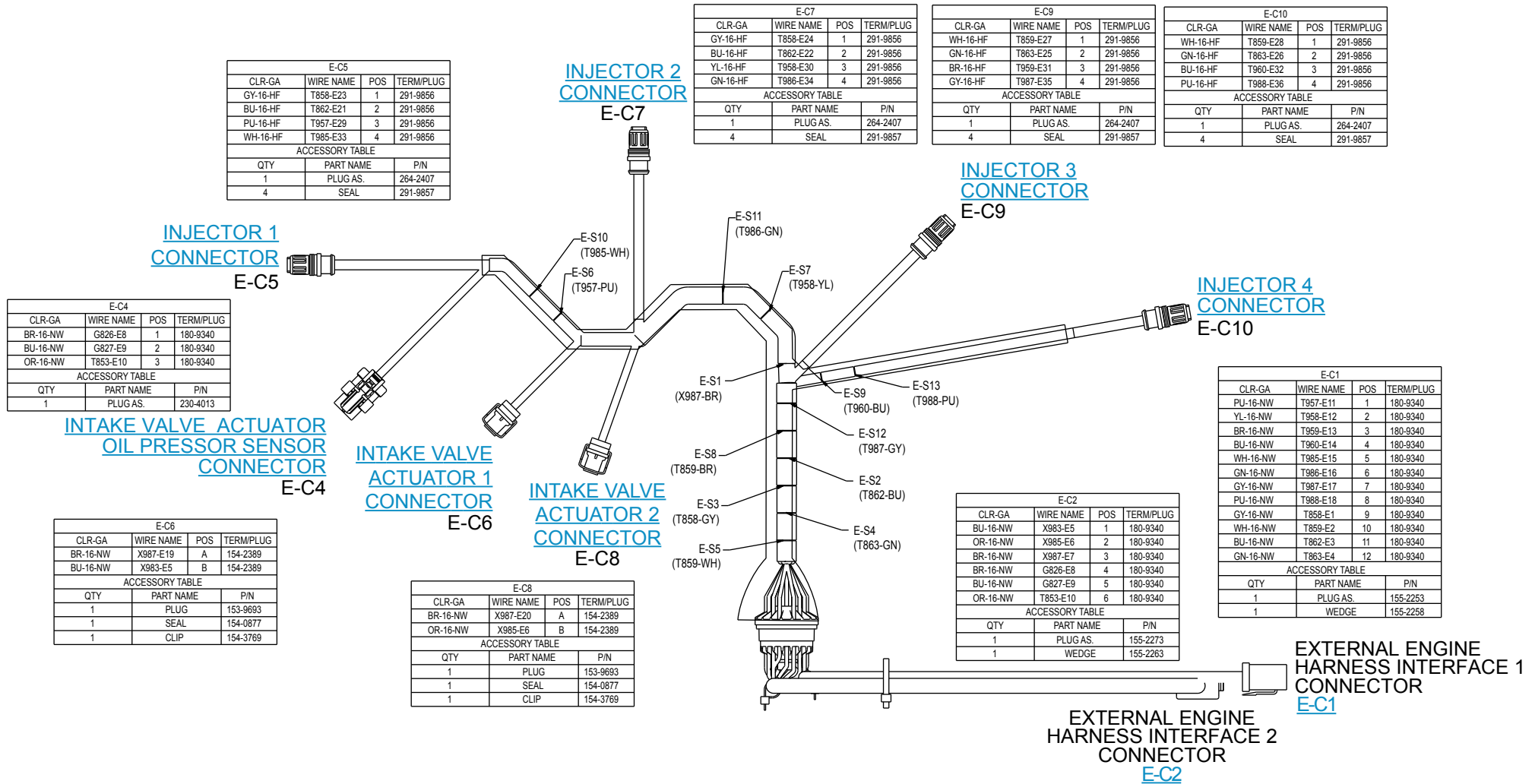
TOP VIEW OF ENGINE



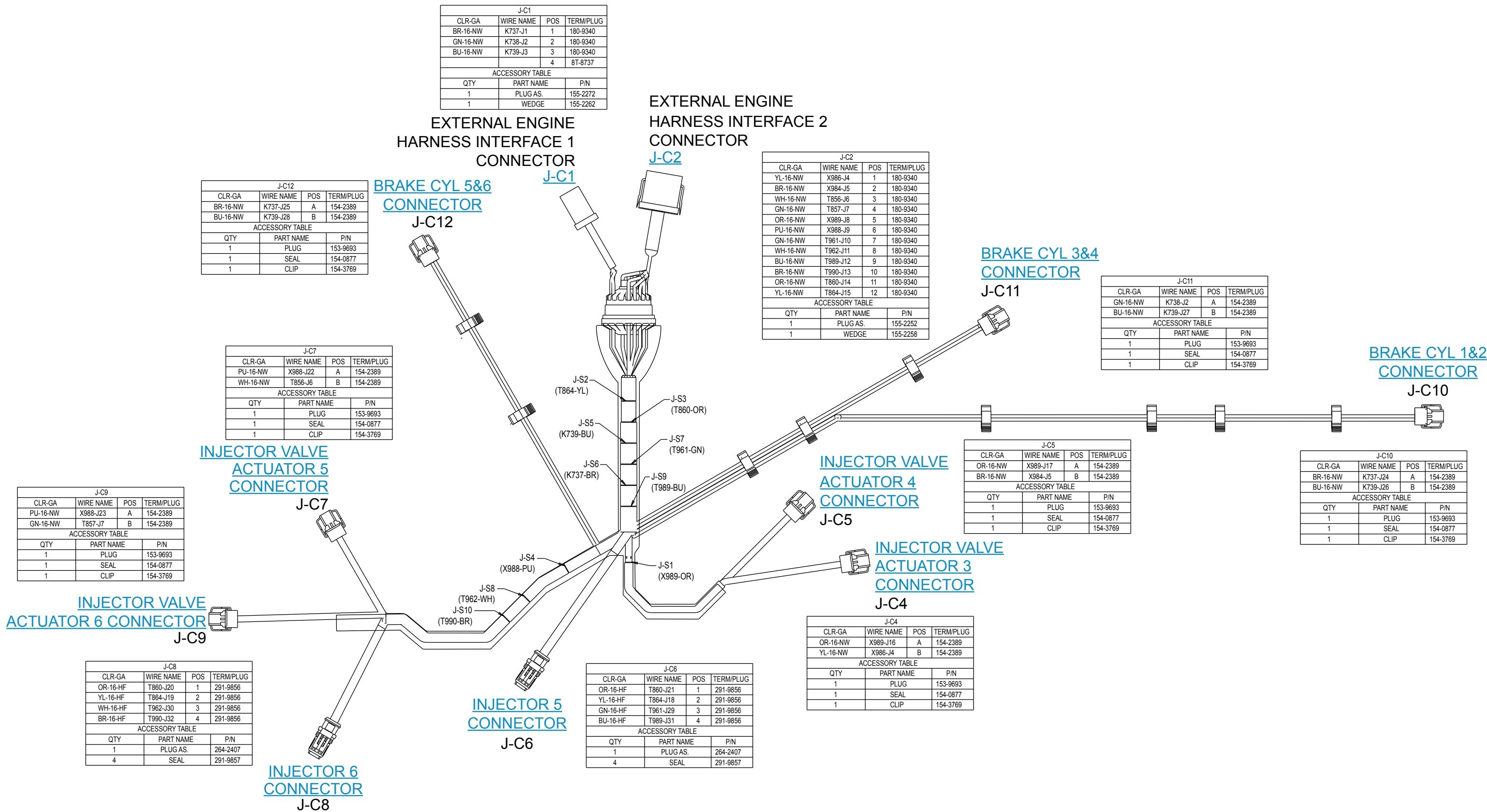
TOP VIEW OF ENGINE (INJECTOR HARNESS)



HARNESS 313-4910 CONNECTOR AND SPLICE LOCATIONS



HARNESS 313-4911 CONNECTOR AND SPLICE LOCATIONS



HARNESS 313-4912 CONNECTOR AND SPLICE LOCATIONS



EXTERNAL ENGINE HARNESS INTERFACE CONNECTOR

F-C1

F-C1			
CLR-GA	WIRE NAME	POS	TERM/PLUG
YL-16-NW	X986-F4	1	180-9340
BR-16-NW	X984-F5	2	180-9340
WH-16-NW	T856-F6	3	180-9340
GN-16-NW	T857-F7	4	180-9340
OR-16-NW	X989-F8	5	180-9340
PU-16-NW	X988-F9	6	180-9340
GN-16-NW	T961-F10	7	180-9340
WH-16-NW	T962-F11	8	180-9340
BU-16-NW	T989-F12	9	180-9340
BR-16-NW	T990-F13	10	180-9340
OR-16-NW	T860-F14	11	180-9340
YL-16-NW	T864-F15	12	180-9340
ACCESSORY TABLE			
QTY	PART NAME	P/N	
1	PLUG AS.	155-2252	
1	WEDGE	155-2258	

F-C4			
CLR-GA	WIRE NAME	POS	TERM/PLUG
OR-16-NW	X989-F16	A	154-2389
YL-16-NW	X986-F4	B	154-2389
ACCESSORY TABLE			
QTY	PART NAME	P/N	
1	PLUG	153-9693	
1	SEAL	154-0877	
1	CLIP	154-3769	

INTAKE VALVE ACTUATOR 5 CONNECTOR

F-C7

F-C9			
CLR-GA	WIRE NAME	POS	TERM/PLUG
PU-16-NW	X988-F23	A	154-2389
GN-16-NW	T857-F7	B	154-2389
ACCESSORY TABLE			
QTY	PART NAME	P/N	
1	PLUG	153-9693	
1	SEAL	154-0877	
1	CLIP	154-3769	

INTAKE VALVE ACTUATOR 6 CONNECTOR

F-C9

F-C8			
CLR-GA	WIRE NAME	POS	TERM/PLUG
OR-16-HF	T860-F20	1	291-9856
YL-16-HF	T864-F19	2	291-9856
WH-16-HF	T962-F25	3	291-9856
BR-16-HF	T990-F27	4	291-9856
ACCESSORY TABLE			
QTY	PART NAME	P/N	
1	PLUG AS.	264-2407	
4	SEAL	291-9857	

INJECTOR 6 CONNECTOR

F-C8

F-C7			
CLR-GA	WIRE NAME	POS	TERM/PLUG
PU-16-NW	X988-F22	A	154-2389
WH-16-NW	T856-F6	B	154-2389
ACCESSORY TABLE			
QTY	PART NAME	P/N	
1	PLUG	153-9693	
1	SEAL	154-0877	
1	CLIP	154-3769	

F-C6			
CLR-GA	WIRE NAME	POS	TERM/PLUG
OR-16-HF	T860-F21	1	291-9856
YL-16-HF	T864-F18	2	291-9856
GN-16-HF	T961-F24	3	291-9856
BU-16-HF	T989-F26	4	291-9856
ACCESSORY TABLE			
QTY	PART NAME	P/N	
1	PLUG AS.	264-2407	
4	SEAL	291-9857	

INJECTOR 5 CONNECTOR

F-C6

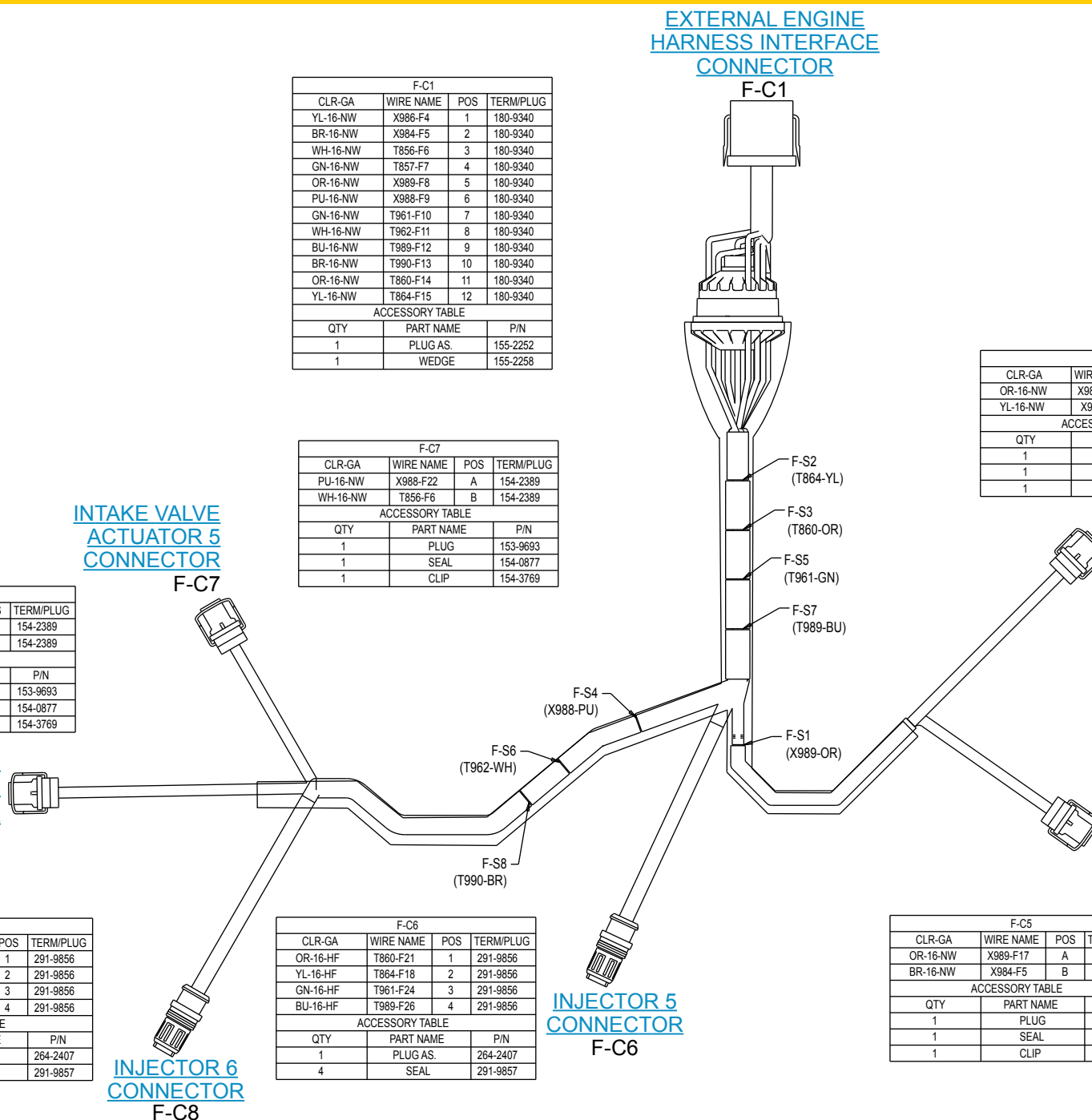
INTAKE VALVE ACTUATOR 3 CONNECTOR

F-C4

INTAKE VALVE ACTUATOR 4 CONNECTOR

F-C5

F-C5			
CLR-GA	WIRE NAME	POS	TERM/PLUG
OR-16-NW	X989-F17	A	154-2389
BR-16-NW	X984-F5	B	154-2389
ACCESSORY TABLE			
QTY	PART NAME	P/N	
1	PLUG	153-9693	
1	SEAL	154-0877	
1	CLIP	154-3769	



HARNESS 313-5857 AND 313-5858 CONNECTOR AND SPLICE LOCATIONS



A-C1			
CLR-GA	WIRE NAME	POS	TERMPUG
GN-16-HV	K738-AR5	1	180-9340
		2	8T-8737
GY-18-GXL	T852-AR32	3	180-9340
PK-18-GXL	386-AR112	4	180-9340
GN-18-GXL	A778-AR101	5	180-9340
		6	8T-8737
		7	8T-8737
BR-16-HV	K737-AR54	8	180-9340
		9	8T-8737
OR-18-GXL	C801-AR98	10	180-9340
		11	8T-8737
		12	8T-8737
GY-18-GXL	Y754-AR101	13	180-9340
BU-16-HV	K739-AR56	14	180-9340
PK-18-GXL	R746-AR20	15	180-9340
WH-18-GXL	U780-AR62	16	180-9340
GN-18-GXL	G829-AR2	17	180-9340
BR-16-HV	X984-AR30	18	180-9340
		19	8T-8737
GY-18-GXL	C800-AR97	20	180-9340
WH-16-HV	T856-AR31	21	180-9340
OR-18-HV	X985-AR14	22	180-9340
		23	8T-8737
		24	8T-8737
BK-18-GXL	E963-AR27	25	180-9340
WH-18-GXL	G856-AR8	26	180-9340
PU-18-GXL	Y923-AR122	27	180-9340
GY-18-GXL	994-AR10	28	180-9340
		29	8T-8737
PK-18-GXL	G833-AR47	30	180-9340
YL-16-HV	X986-AR22	31	180-9340
YL-18-GXL	E795-AR121	32	8T-8737
		33	8T-8737
WH-18-GXL	E964-AR28	34	8T-8737
YL-18-GXL	G857-AR5	35	180-9340
GN-18-GXL	C829-AR66	36	180-9340
		37	8T-8737
PK-18-GXL	C991-AR125	38	180-9340
BR-18-GXL	C803-AR99	39	180-9340
GN-16-HV	T857-AR36	40	180-9340
GY-18-GXL	U775-AR68	41	180-9340
		42	180-9340
PK-14-GXL	U788-AR80	43	180-9340
YL-18-GXL	E966-AR49	44	180-9340
BU-18-GXL	E965-AR46	45	180-9340
		46	180-9340
		47	180-9340
		48	8T-8737
		49	8T-8737
BU-16-HV	X983-AR7	50	180-9340
BU-18-GXL	U774-AR58	51	180-9340
GY-18-GXL	Y738-AR106	52	180-9340
YL-16-HV	T864-AR71	53	180-9340
BU-18-GXL	G827-AR69	54	180-9340
YL-18-GXL	T846-AR100	55	180-9340
YL-18-GXL	Y741-AR61	56	180-9340
BR-18-GXL	U779-AR6	57	180-9340
PU-16-HV	X988-AR52	58	180-9340
PU-18-GXL	Y733-AR103	59	180-9340
BU-18-GXL	Y734-AR104	60	180-9340
GN-16-HV	T863-AR75	61	180-9340
		62	8T-8737
OR-18-GXL	Y753-AR82	63	180-9340
		64	8T-8737
		65	8T-8737
PK-18-GXL	Y746-AR92	66	180-9340
OR-16-HV	X989-AR51	67	180-9340
BR-16-HV	X987-AR37	68	180-9340
YL-18-GXL	Y737-AR105	69	180-9340
PK-18-GXL	U773-AR57	70	180-9340
		71	8T-8737
WH-18-GXL	G828-AR1	72	180-9340
		73	8T-8737
OR-18-GXL	T853-AR11	74	180-9340
		75	8T-8737
YL-18-GXL	H807-AR33	76	180-9340
BU-16-HV	T862-AR78	77	180-9340
		78	8T-8737
YL-18-GXL	H807-AR102	79	180-9340
BR-18-GXL	G826-AR70	80	180-9340
WH-18-GXL	Y748-AR109	81	180-9340
YL-18-GXL	U781-AR3	82	180-9340
GN-18-GXL	Y749-AR110	83	180-9340
BU-18-GXL	995-AR12	84	180-9340
		85	8T-8737
		86	8T-8737
OR-16-GXL	Y751-AR88	87	8T-8737
BR-18-GXL	Y747-AR108	88	180-9340
		89	180-9340
OR-18-GXL	Y743-AR107	90	180-9340
		91	180-9340
		92	8T-8737
PK-18-GXL	U782-AR83	93	180-9340
PU-18-GXL	Y742-AR76	94	180-9340
BU-18-GXL	C967-AR15	95	180-9340
YL-18-GXL	F421-AR13	96	180-9340
		97	8T-8737
		98	8T-8737
OR-16-HV	T860-AR25	99	180-9340
BR-16-HV	T990-AR84	100	180-9340
GY-16-HV	T987-AR85	101	180-9340
BU-16-HV	T989-AR86	102	180-9340
PU-16-HV	T988-AR87	103	180-9340
GY-16-HV	T858-AR23	104	180-9340
WH-16-HV	T962-AR29	105	180-9340
BR-16-HV	T999-AR18	106	180-9340
GN-16-HV	T961-AR28	107	180-9340
BU-16-HV	T960-AR19	108	180-9340
YL-18-GXL	Y750-AR111	109	180-9340
		110	8T-8737
WH-16-HV	T985-AR89	111	180-9340
		112	8T-8737
GN-16-HV	T986-AR90	113	180-9340
		114	8T-8737
WH-16-HV	T859-AR24	115	180-9340
PU-16-HV	T957-AR16	116	180-9340
		117	8T-8737
YL-16-HV	T958-AR17	118	180-9340
		119	8T-8737
		120	8T-8737
ACCESSORY TABLE			
QTY	PART NAME	PIN	
1	PLUG AS.	264-5732	
1	COVER	292-9637	
4	STRAP-CABLE	3S-2093	
4	STRAP-CABLE	6K-0806	

A-C2			
CLR-GA	WIRE NAME	POS	TERMPUG
WH-18-GXL	G828-AR34	1	180-9340
PK-18-GXL	G833-AR21	2	180-9340
PK-18-GXL	U773-AR57	3	180-9340
		4	8T-8737
ACCESSORY TABLE			
QTY	PART NAME	PIN	
1	PLUG AS.	230-5008	
120mm	PAINT/PRO	289-5150	

A-C3			
CLR-GA	WIRE NAME	POS	TERMPUG
PU-18-GXL	Y733-AR103	1	180-9340
OR-18-GXL	Y736-AR50	2	180-9340
ACCESSORY TABLE			
QTY	PART NAME	PIN	
1	PLUG AS.	230-4011	
120mm	PAINT/PRO	289-5150	

A-C4			
CLR-GA	WIRE NAME	POS	TERMPUG
WH-18-GXL	G828-AR38	1	180-9340
GN-18-GXL	G829-AR43	2	180-9340
GY-18-GXL	994-AR10	3	180-9340
ACCESSORY TABLE			
QTY	PART NAME	PIN	
1	PLUG AS.	237-0227	
150mm	PAINT/PRO	289-5150	

A-C5			
CLR-GA	WIRE NAME	POS	TERMPUG
GN-18-GXL	U799-AR102	1	180-9340
OR-16-GXL	U799-AR102	2	8T-8737
ACCESSORY TABLE			
QTY	PART NAME	PIN	
1	RECEPTACLE AS.	3E-3376	
150mm	PAINT/PRO	289-5150	
1	WEDGE	3E-3377	

A-C6			
CLR-GA	WIRE NAME	POS	TERMPUG
WH-18-GXL	G828-AR39	1	180-9340
GN-18-GXL	G829-AR41	2	180-9340
PK-18-GXL	R746-AR20	3	180-9340
ACCESSORY TABLE			
QTY	PART NAME	PIN	
1	PLUG AS.	230-6008	
120mm	PAINT/PRO	289-5150	

A-C7			
CLR-GA	WIRE NAME	POS	TERMPUG
BU-18-GXL	E965-AR48	1	180-9340
YL-18-GXL	E966-AR49	2	180-9340
ACCESSORY TABLE			
QTY	PART NAME	PIN	
1	PLUG AS.	230-4011	
150mm	PAINT/PRO	289-5150	

A-C8			
CLR-GA	WIRE NAME	POS	TERMPUG
BK-18-GXL	E963-AR27	1	180-9340
WH-18-GXL	E964-AR26	2	180-9340
ACCESSORY TABLE			
QTY	PART NAME	PIN	
1	PLUG AS.	230-4013	
120mm	PAINT/PRO	289-5150	

A-C9			
CLR-GA	WIRE NAME	POS	TERMPUG
BU-18-GXL	C967-AR15	1	180-9340
PK-18-GXL	G833-AR45	2	180-9340
ACCESSORY TABLE			
QTY	PART NAME	PIN	
1	PLUG AS.	230-4011	
150mm	PAINT/PRO	289-5150	

A-C10			
CLR-GA	WIRE NAME	POS	TERMPUG
YL-18-GXL	F421-AR13	1	180-9340
PK-18-GXL	G833-AR46	2	180-9340
ACCESSORY TABLE			
QTY	PART NAME	PIN	
1	PLUG AS.	230-4011	
150mm	PAINT/PRO	289-5150	

A-C11			
CLR-GA	WIRE NAME	POS	TERMPUG
BU-18-GXL	995-AR12	1	180-9340
PK-18-GXL	G833-AR44	2	180-9340
ACCESSORY TABLE			
QTY	PART NAME	PIN	
1	PLUG AS.	230-4011	
150mm	PAINT/PRO	289-5150	

A-C12			
CLR-GA	WIRE NAME	POS	TERMPUG
WH-18-GXL	G856-AR8	1	180-9340
YL-18-GXL	G857-AR9	2	180-9340
ACCESSORY TABLE			
QTY	PART NAME	PIN	
1	PLUG AS.	155-2269	
1	CAP-CONNECTOR	274-3774	
120mm	PAINT/PRO	289-5150	
1	WEDGE	155-2261	

A-C13			
CLR-GA	WIRE NAME	POS	TERMPUG
GN-18-GXL	A778-AR101	1	180-9340
YL-18-GXL	H807-AR102	2	180-9340
ACCESSORY TABLE			
QTY	PART NAME	PIN	
1	PLUG AS.	230-4011	
1	SEAL-CAP	274-3780	
150mm	PAINT/PRO	289-5150	

A-C14			
CLR-GA	WIRE NAME	POS	TERMPUG
OR-18-GXL	Y736-AR50	1	180-9340
BU-18-GXL	Y734-AR104	2	180-9340
ACCESSORY TABLE			
QTY	PART NAME	PIN	
1	PLUG AS.	230-4011	
120mm	PAINT/PRO	289-5150	

A-C16			
CLR-GA	WIRE NAME	POS	TERM/PLUG
PK-14-GXL	U788-AR80	1	180-9340
OR-16-GXL	U799-AR102	2	180-9340
RD-14-GXL	101-ARA	3	180-9340
BK-14-GXL	Z29-AR74	4	180-9340
ACCESSORY TABLE			
QTY	PART NAME	PIN	
1	PLUG AS.	230-6008	
120mm	PAINT/PRO	289-5150	

A-C17			
CLR-GA	WIRE NAME	POS	TERM/PLUG
YL-18-GXL	Y737-AR105	1	180-9340
GY-18-GXL	Y738-AR106	2	180-9340
ACCESSORY TABLE			
QTY	PART NAME	PIN	
1	PLUG AS.	238-8245	
150mm	PAINT/PRO	289-5150	

A-C18			
CLR-GA	WIRE NAME	POS	TERM/PLUG
WH-18-GXL	Y748-AR73	1	180-9340
GN-18-GXL	Y749-AR59	2	180-9340
BR-18-GXL	C803-AR99	3	180-9340
ACCESSORY TABLE			
QTY	PART NAME	PIN	
1	PLUG AS.	230-6008	
120mm	PAINT/PRO	289-5150	

A-C19			
CLR-GA	WIRE NAME	POS	TERM/PLUG
WH-18-GXL	G828-AR123	1	180-9340
GN-18-GXL	G829-AR124	2	180-9340
PK-18-GXL	C991-AR125	3	180-9340
ACCESSORY TABLE			
QTY	PART NAME	PIN	
1	PLUG AS.	237-0227	
1	SEAL-CAP	274-3781	
1	STRAP-CABLE	3S-2093	
120mm	PAINT/PRO	289-5150	

A-C22			
CLR-GA	WIRE NAME	POS	TERM/PLUG
WH-18-GXL	Y748-AR60	1	180-9340
GN-18-GXL	Y749-AR53	2	180-9340
OR-18-GXL	Y743-A107	3	180-9340
YL-18-GXL	T846-A100	4	180-9340
ACCESSORY TABLE			
QTY	PART NAME	PIN	
1	PLUG AS.	230-6008	
120mm	PAINT/PRO	289-5150	

A-C23			
CLR-GA	WIRE NAME	POS	TERM/PLUG
YL-16-GXL	Y750-A111	1	180-9340
BK-16-GXL	200-A79	2	180-9340
OR-16-GXL	Y751-A88	3	180-9340
ACCESSORY TABLE			
QTY	PART NAME	PIN	
1	PLUG AS.	230-4013	
120mm	PAINT/PRO	289-5150	

VA FOR VALVE CONNECTOR

A-C15

ARD COMBUSTION MAF
DELTA P PRESSURE
SENSOR CONNECTOR
A-C42

SECONDARY
SPEED/TIME
SENSOR/CAM
CONNECTOR
A-C7

ARD F
VALVE
A-C9

COOLANT TEMPERATURE
SENSOR CONNECTOR
A-C11

ARD NOZZLE CLEANING
SOLENOID CONNECTOR
A-C13

ARD HEATED NOZZLE
RELAY CONNECTOR
A-C16

ARD PILOT FUEL PRESSURE
SENSOR CONNECTOR
A-C18

ENGINE
O/TIMING
(K)SHAFT
CONNECTOR
A-C8

CONNECTOR PIN CONFIGURATION

