



# MOTORSPORT SOUTH AFRICA

Groupe / Group

## R2B

Homologation N°

**R146/13**

Extension N°

**03/02 VO**

### FICHE D'EXTENSION D'HOMOLOGATION HOMOLOGATION EXTENSION FORM

Homologation valable à partir du  
Homologation valid as from

**10 SEPTEMBER 2013**

- |   |   |
|---|---|
| <input type="checkbox"/> <b>ER</b> Erratum / <i>Erratum</i>                         | <input type="checkbox"/> <b>VF</b> Variante de fourniture / <i>Supply variant</i>     |
| <input type="checkbox"/> <b>ET</b> Evolution du type / <i>Evolution of the type</i> | <input checked="" type="checkbox"/> <b>VO</b> Variante option / <i>Option variant</i> |
|   | <input type="checkbox"/> <b>VP</b> Variante de Production / <i>Production variant</i> |

**101. CONSTRUCTEUR DU VEHICULE / MANUFACTURER OF THE VEHICLE**

**TOYOTA SA MOTORS PTY LTD**

**102. MODÈLE ET TYPE DE VEHICULE / MODEL AND TYPE OF THE VEHICLE**

a) Modèle et type  
Model and type

**ETIOS 1.5 XI**

Page or Extension	Article	Description	Photo n°
2-4	324-A2	ECU Detail – Description, Photo and Pinout Information	1(A), 1(B)
5	500	ECU Loom Photo and Connector Identification	2(A)
6	500	Chassis Loom Photo and Connector Identification	3(A)
7	500	Front Loom Photo and Connector Identification	4(A)
8	500	Engine Loom Photo and Connector Identification	5(A)
9	500	Control Panel and Optional Power Control Module Photo and Description	6(A), 6(B)
10	324-A3	Data Logging System Photo and Component Identification	7(A)
10	-	Complementary Information	-

Marque  
Make

**TOYOTA SA**

Modèle  
Model

**ETIOS 1.5 Xi**

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**EFI TECHNOLOGY EURO-4 ECU FRONT VIEW**



PHOTO 1(A)

**EFI TECHNOLOGY EURO-4 ECU REAR VIEW**



PHOTO 1(B)

**ECU PINOUT INFORMATION :**

<b>C100</b>	<b>EURO 4 ECU CONNECTOR BLACK</b>	
	<b>PIN</b>	<b>FUNCTION</b>
A1	DGND	NOT USED
A2	DGND - for CAN (PC COMMS)	
A3	DGND - for EM3 & EM4 (EXH CAM 0V)	
A4	ANA GND (PPS1, PPS2, GEAR POT 0V)	
B1	GEARBOX TEMP SIGNAL	
B2	LAMBDA (-VS/-IP)	
B3	SENSOR 5V (FUEL & OIL PRESS)	
B4	ANA SENSOR GND (FUEL & OIL PRESS)	
C1	FUEL GAUGE	
C2	Write enable (WREN) CAN 1 & 2 (PC COMMS)	
C3	LAMBDA (VS)	
C4	CAN 1L (PC COMMS)	
D1	IGN SW INPUT (COMMAND FOR RL J1)	
D2	Spare ANA SENS 7	NOT USED
D3	SENSOR 5V (PPS + GEAR POT)	
D4	CAN 1H (PC COMMS)	
E1	PPS2 SIGNAL	
E2	FUEL PRESSURE SIGNAL	
E3	LAMBDA (RC)	
E4	CAN 2L (CAR CAN)	
F1	Lambda Input (via module)	NOT USED
F2	PPS1 SIGNAL	
F3	CAN 2H (CAR CAN)	
F4	LAMBDA (IP)	
G1	GEAR POT SIGNAL	
G2	LOAD CELL SIGNAL	
G3	Spare ANA SENS 6	NOT USED
G4	Spare ANA SENS 5	NOT USED
H1	ANA SENS 2	NOT USED
H2	ANA SENS 1	NOT USED
H3	EXH CAM SIGNAL	
H4	Digital Input (EM4)	NOT USED
J1	TRIGGER FOR MAIN RELAY (OUTPUT)	
J2	LAMBDA HEATER (PWM)	
J3	Digital Input - HE4 (L REAR WSP SIGNAL)	NOT USED
J4	Digital Input - HE5 (MANUAL REV LIMITER SW)	
K1	RAD FAN TRIGGER - (OUT L10)	
K2	FUEL PUMP TRIGGER - (OUT L9)	
K3	Digital Input - HE6 (STEER W SPARE)	
K4	Digital Input - HE7 (MAP SW INPUT)	
L1	Driver Out H8 (VVTI)	
L2	Driver Out H7 (VVTE)	
L3	Battery Power Supply (12v)	
L4	Battery Power Supply (12v)	
M1	Stepper Motor Driver, Step C	NOT USED
M2	Stepper Motor Driver, Step B	NOT USED
M3	Stepper Motor Driver, Step A	NOT USED
M4	Stepper Motor Driver, Step D	NOT USED

**ECU PINOUT INFORMATION :**

<b>C200</b>	<b>EURO 4 ECU CONNECTOR BROWN</b>	
	<b>PIN</b>	<b>FUNCTION</b>
A1	ANA GND	
A2	ANA GND (OIL T, WAT T, AIR T)	
A3	AIR TEMP SIGNAL	
A4	TPS2 SIGNAL	
B1	ANA GND - for sensors (TPS)	
B2	Digital Input - HE1 (RF WSP)	NOT USED
B3	SENSOR 5V (TPS & 3 X WSP)	
B4	MAP SENSOR SIGNAL	
C1	SENSOR 5V (CRANK & CAM)	
C2	Digital Input - HE2 (LF WSP)	NOT USED
C3	Digital Input - HE3 (RR WSP)	
C4	TPS1 SIGNAL	
D1	Driver Out H5 (PWM)	NOT USED
D2	Driver Out H6 (PWM)	NOT USED
D3	Knock Sens GND	NOT USED
D4	Knock Sens 2 Input	NOT USED
E1	ELECTRIC THROTTLE MOTOR (M-)	
E2	ELECTRIC THROTTLE MOTOR (M+)	
E3	WATER TEMP SIGNAL	
E4	Knock Sens 1 Input	NOT USED
F1	Switch OUT L11 (Universal OUT 2)	NOT USED
F2	Switch OUT L12	NOT USED
F3	OIL PRESSURE SIGNAL	
F4	OIL TEMP SIGNAL	
G1	INJ 5	NOT USED
G2	INJ 6	NOT USED
G3	DGND for EM1 & EM2 (CRANK)	
G4	DGND for Hall Sensors (ICAM SENSOR)	
H1	INJ 7	NOT USED
H2	INJ 8	NOT USED
H3	CRANK SENSOR SIGNAL	
H4	INLET CAN SIGNAL	
J1	INJECTOR 1	
J2	INJECTOR 4	
J3	COIL 3 (Logic Coils)	
J4	COIL 4 (Logic Coils)	
K1	INJECTOR 3	
K2	INJECTOR 2	
K3	COIL 1 (Logic Coils)	
K4	COIL 2 (Logic Coils)	
L1	Power GND on Engine	
L2	Power GND on Engine	
L3	Power GND on Engine	
L4	Power GND on Engine	
M1	COIL 4 (Inductive Coils)	NOT USED
M2	COIL 1 (Inductive Coils)	NOT USED
M3	COIL 2 (Inductive Coils)	NOT USED
M4	COIL 3 (Inductive Coils)	NOT USED

## ECU LOOM PHOTO



PHOTO 2(A)

## ECU LOOM CONNECTOR IDENTIFICATION

NUMBER	CONNECTOR DESCRIPTION
C100	ECU CONNECTOR 1 (BLACK)
C200	ECU CONNECTOR 2 (BROWN)
C8	CHASSIS LOOM INTERFACE CONNECTOR
C25	ENGINE LOOM INTERFACE CONNECTOR

**CHASSIS LOOM PHOTO**

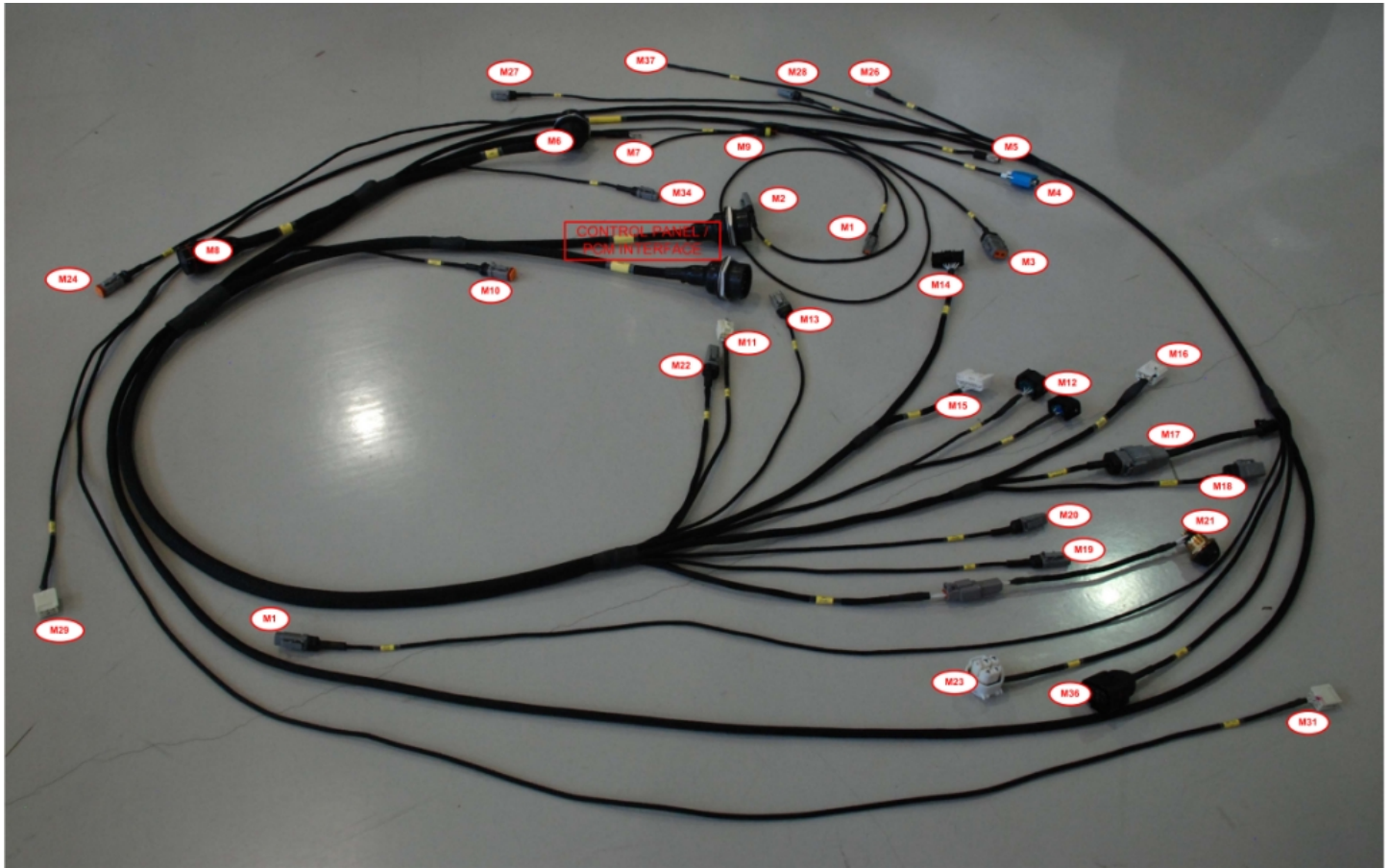


PHOTO 3(A)

**CHASSIS LOOM CONNECTOR IDENTIFICATION**

NUMBER	CONNECTOR DESCRIPTION	NUMBER	CONNECTOR DESCRIPTION
M1	INTERCOM	M19	MAP SELECT SWITCH
M2	ODO POWER	M20	PAGE BUTTON
M3	OBD DIAGNOSTIC – FOR EPS	M21	START BUTTON
M4	PC COMMS	M22	ELECTRONIC THROTTLE PEDAL
M6	FRONT SPLIT	M24	HIGH PRESSURE FUEL PUMP
M7	GROND LUG	M25	AUXILARY 12V
M8	ECU SPLIT	M26	GROUND LUG
M9	MASTER RELAY	M27	NAVIGATION LIGHT
M10	WINDSCREEN BLOWER	M28	AUXILIARY 12V
M11	BRAKE SWITCH	M29	LEFT TAIL LIGHT
M12	2D DASH DISPLAY	M31	NOT USED
M13	STEERING WHEEL CONNECTOR	M32	RIGHT TAIL LIGHT
M14	WIPER STALK SWITCH	M34	CAN EXTENSION
M15	LIGHTS STALK SWITCH	M35	LEFT REAR WHEEL SPEED
M16	EPS POWER	M36	LAMBDA SENSOR
M17	EPS SIGNAL	M37	GEAR SHIFT LOAD CELL, OPTIONAL
M18	EPS CONTROL BOX		



**FRONT LOOM PHOTO**

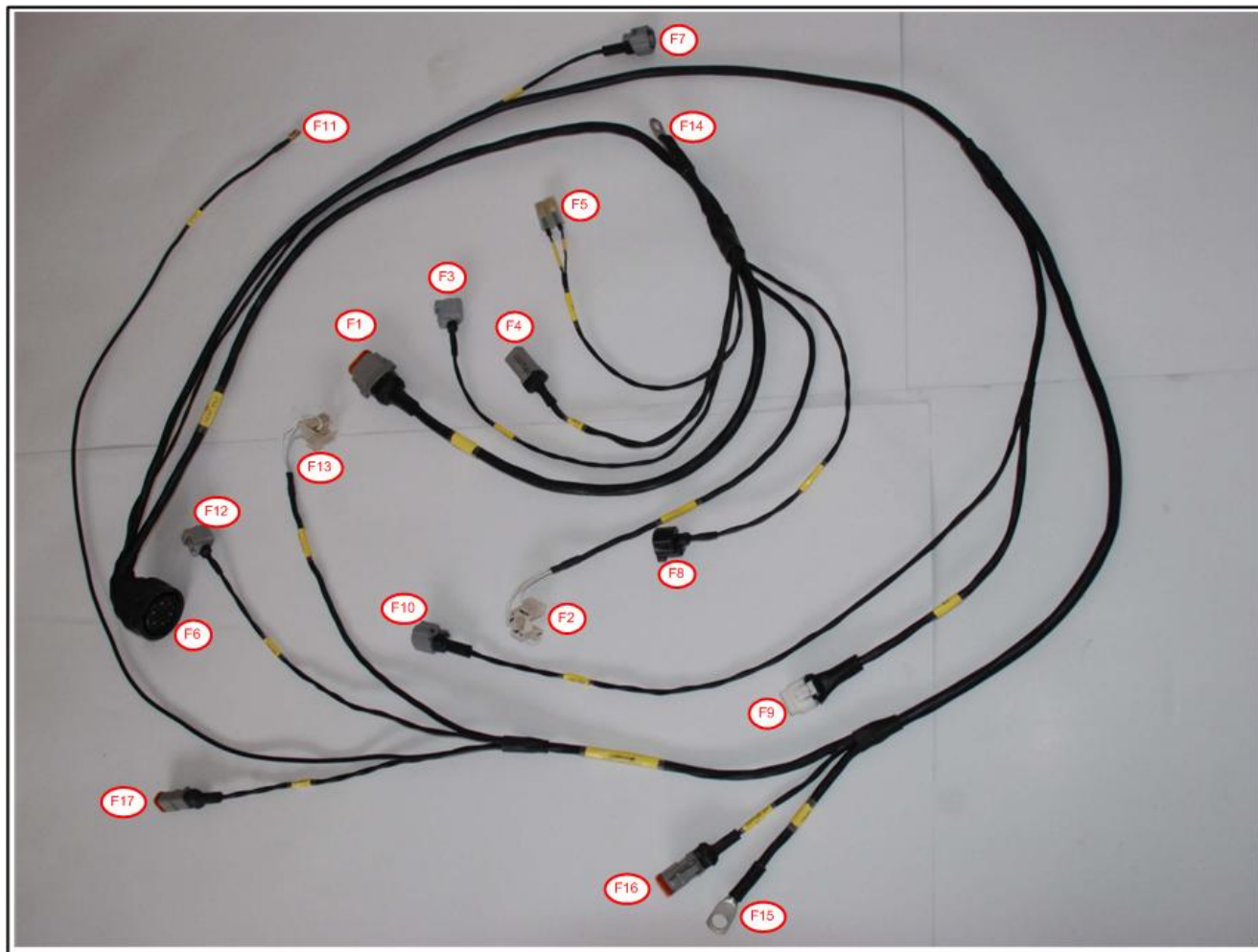


PHOTO 4(A)

**FRONT LOOM CONNECTOR IDENTIFICATION**

NUMBER	CONNECTOR DESCRIPTION
F1	SPOT LIGHTS
F2	LEFT HEADLIGHT
F3	LEFT INDICATOR (FRONT)
F4	RADIATOR FAN
F5	HOOTER
F6	CHASSIS LOOM INTERFACE CONNECTOR
F7	LEFT INDICATOR (FENDER)
F8	WINDOW WASHER
F9	WIPER MOTOR
F10	RIGHT INDICATOR (FENDER)
F11	START SOLINOID
F12	RIGHT INDICATOR (FRONT)
F13	RIGHT HEADLIGHT
F14	GROUND LUG
F15	GROUND LUG
F16	SPARE 12V SUPPLY - OPTIONAL
F17	FAN 2 12V (SPARE) - OPTIONAL

**ENGINE LOOM PHOTO**

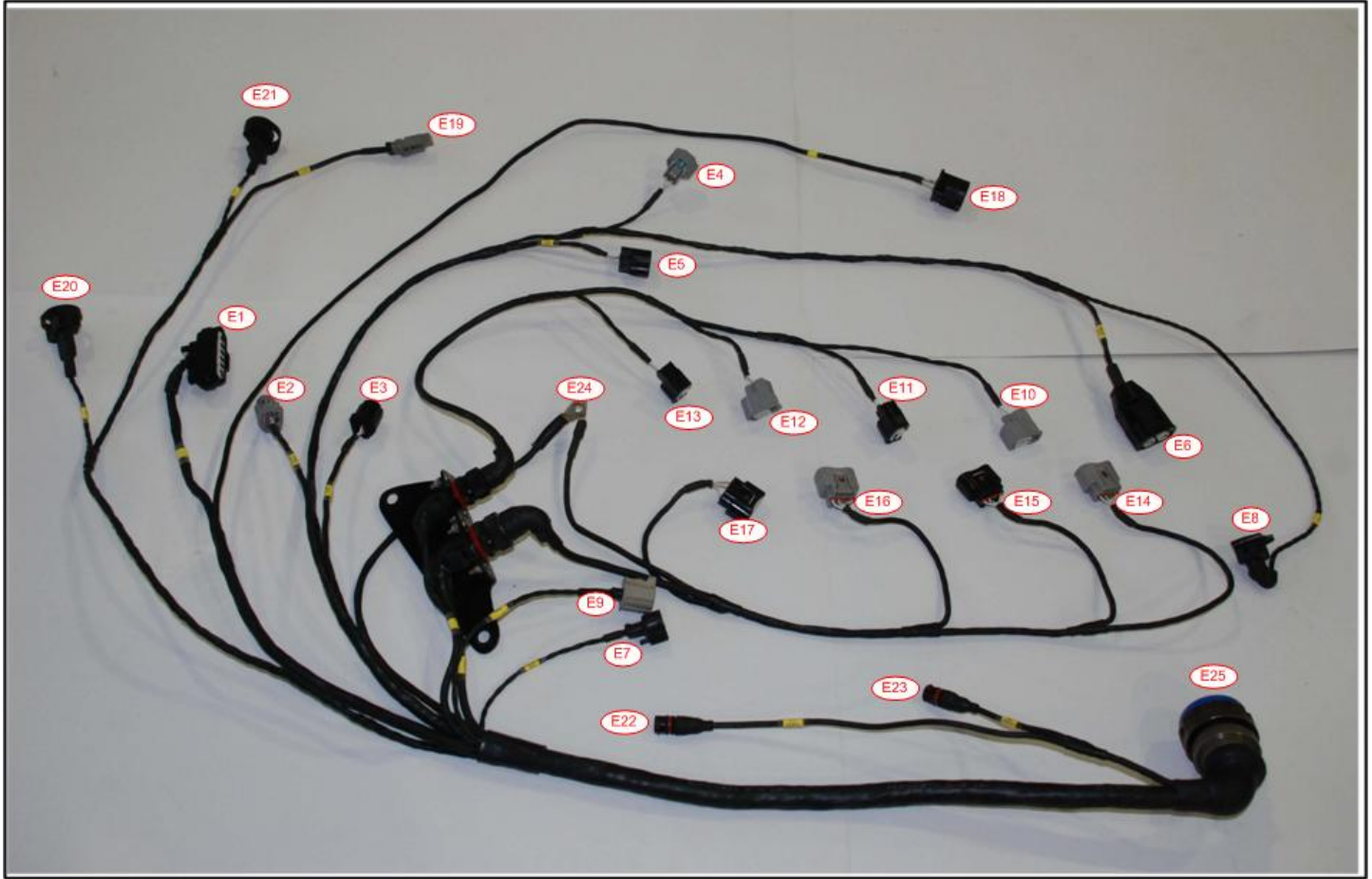


PHOTO 5(A)

**ENGINE LOOM CONNECTOR IDENTIFICATION**

NUMBER	CONNECTOR DESCRIPTION
E1	ELECTRONIC THROTTLE BODY
E2	INLET CAM POSITION SENSOR
E3	EXHAUST CAM POSITION SENSOR
E4	VARIABLE VALVE TIMING SOLINOID – INLET CAM
E5	VARIABLE VALVE TIMING SOLINOID – EXHAUST CAM
E6	CRANK POSITION SENSOR
E7	AIR TEMP SENSOR
E8	OIL TEMP SENSOR
E9	WATER TEMP SENSOR
E10	INJECTOR 1
E11	INJECTOR 2
E12	INJECTOR 3
E13	INJECTOR 4
E14	COIL 1
E15	COIL 2
E16	COIL 3
E17	COIL 4
E18	ALTERNATOR
E19	GEAR POSITION SENSOR
E20	GEAR CUT SWITCH
E21	REV LTS SW - OPTIONAL
E22	FUEL PRESSURE SENSOR
E23	OIL PRESSURE SENSOR
E24	ENGINE GROUND
E25	ECU INTERFACE CONNECTOR



**CONTROL PANEL PHOTO**



PHOTO 6(A)

**OPTIONAL POWER CONTROL MODULE PHOTO**



PHOTO 6(B)

**CONTROL PANEL DESCRIPTION**

1. The Control Panel is a bespoke Electromechanical assembly which is custom made for the car.
2. The Control Panel main functions are Power Distribution, Circuit Switching and Electrical Over Current Protection.
3. Main components are Switches, Circuit Breakers, Fuses and Relays.
4. Control Panel interfaces to the Chassis Loom by means of two Interface Connectors.

**OPTIONAL POWER CONTROL MODULE DESCRIPTION**

1. Instead of the Control Panel described above, the use of a Power Control Module is permitted.
2. The allowed module is the PCM2, manufactured by OBR Control Systems (UK).
3. When the PCM2 is used, a compatible Membrane Switching Panel is allowed.
4. The Power Control Module interfaces to the Chassis Loom by means of three Interface Connectors.

**COMPLIMENTARY INFORMATION**

1. Looms are custom made and no specific material specifications are prescribed.
2. The addition of wiring to incorporate accessories, which are free by regulation, is permitted.
3. The addition of Interface Connectors, to split looms into smaller sub-looms, is permitted as long as the electrical interconnection and functionality is not altered.
4. The addition of sensors and devices for data logging purposes, which are free by regulation, is permitted.
5. Provision is made in the wiring loom for the addition of a 2D CAN Datalogger, which is optional only and does not have to be installed