YANMAR

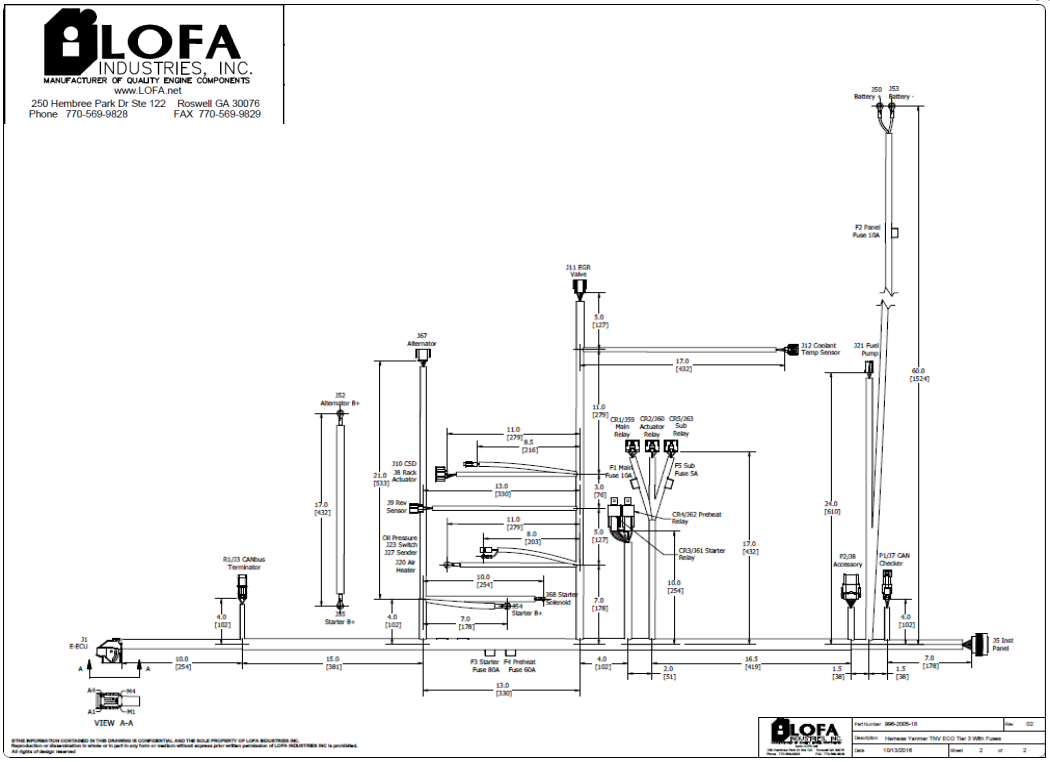
Supplement to Yanmar Kit Installation Instructions

SAFETY

This product is designed and intended only for use with a YANMAR engine. All safety and warning information contained in the Yanmar Operation Manual and Service Manual is adopted and incorporated to apply to the components, accessories, and parts that are utilized with Yanmar engines. Follow all instructions and precautions before installing this product, before operating, during operation, and during periodic maintenance procedures for your safety, the safety of others, and to protect the performance of your engine.

Item	Part No.	Description	Quantity	Remarks
1	129989-09000	Main Harness Assembly	1	
2	198461-52950*	Relay	2	Included w/ engine
3	129989-09020	Alternator Sub Harness	1	

MODELS
4TNV84T-Z
4TNV98-Z
4TNV98T-Z



NOTE: Sub relay is optional and not included with the engine.
Service parts are denoted by an asterisk. To replace non-service parts, the entire kit will need to be purchased.

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NOTE: Only the Main and Rack Actuator Relays are required for the function of the Yanmar ECO engines. These relays are supplied with the distributor standard specification engines in the loose parts box. The optional Sub-Relay connector (CR5) is intended to activate 4 optional features such as engine stop switch, droop-switch, ECO lamp, and engine speed monitor. All of these optional features are located in the accessory connector (J18) in the wire harness on pins 3,4,5, and 6. In the event that these features need to be activated one additional relay P/N: 198461-52950 must be ordered

Yanmar America Part Department Phone # : 1-800-966-7685

Hand tighten all bolts and nuts until assembly is completed, then torque according to specifications in Table 1. The numbers in () represent the item numbers.

1. See the next page for specific instructions on mounting the harness to an engine
2. The use of the KECMB1 kit is recommended for securing the ECU to the engine for proper harness routing and vibration resistance.
3. A relay mounting bracket has been provided with the kit. This bracket will allow the relays to be securely fastened to the engine to reduce vibration and water damage.

Please see the next page for detailed installation instructions.

WARNING: Be sure battery cables are connected correctly. Disconnecting either the positive or negative battery cable while the equipment is operating will cause premature failure of electronic components. Also, never weld on equipment with the ECU connected to the wire harness.

NOTE: In the event that the 60" wire harness extension needs to be extended, please follow the manufacturer's assembly and wiring procedures. Please visit www.deutschip.com and click on the Connector Repair or Helpful Hints link to download a more detailed procedure on how to properly assemble a connector. As always, never use scotch locks or butt connectors to extend the wire harness. All extended wires must be soldered and sealed.

Constant Speed Applications:

Enabling Engine Speed Switch #1 -

Locate the 12 pin Deutsch accessory connector and jumper the pin #2 (ground) with pin #11 engine speed switch #1. Use the female connector that comes attached to each wire harness to make the connections. This will enable the Engine Speed Switch #1 for constant speed.

Enabling Engine Speed Switch #2 -

Locate the 12 pin Deutsch accessory connector and jumper the pin #2 (ground) with pin #12 engine speed switch #2. Use the female connector that comes attached to each wire harness to make the connections. This will enable the Engine Speed Switch #2 for constant speed.

Remote Mounted ECU Applications:

For applications that remotely mount the ECU within the wire harnesses reach please use the following ECU mounting guidelines:

1- Install the ECU in a location that is not subject to steam or high-pressure water for cleaning
2- Install the ECU in a location that is well ventilated and not subject to direct sunlight.
3- Install the ECU so that the connector faces downward. Failure to do so may trap water in the connector, resulting in corrosion of connector pins.
4- Ensure no water is trapped inside the connector when plugging the connector. Water inside the connector may corrode connector pins, resulting in malfunctioning of the ECU.

Refer to harness drawing for additional design requirements for consideration of application. A troubleshooting guide is available through Yanmar's Distributor Website or by contacting Yanmar America's Service Department.

Table 1: Comply with torque standards in the table to avoid unexpected damage during installation or in the future.

Diameter x Pitch	Kgf-m	Foot-lbf	N-m
M5x0.8	0.4 ~ 0.7	3 ~ 5	4 ~ 6.7
M6 x 1.0	1.0~1.2	7 ~ 9	9.8 ~ 11.8
M8 x 1.25	1.5 ~ 2.9	10.6 ~ 20.9	14.4 ~ 28.3
M12 x 1.75	8.0 ~ 10.0	57.8 ~ 72.3	78.4 ~ 98.0

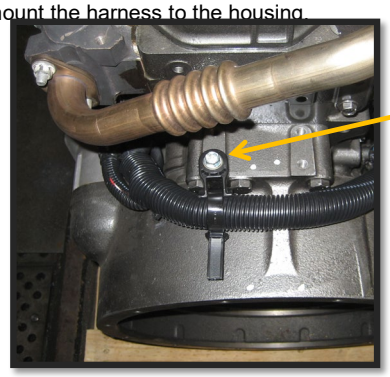
Harness Routing Instructions

1. Lay the loose harness on engine to gauge fitment and placement of where the relays, ECU, and connectors should go based on the wiring diagrams provided. Please refer to TNV application manual for cautionary measures to be taken when mounting a harness to an engine.

2. Secure largest section of loom to the flywheel housing with the large zip tie and bolt down mount. There will be a series of bolt holes on the top of the housing that will be M8 or M10 depending on the flywheel housing. See charts below for which housing will require which bolt to mount the harness to the housing.

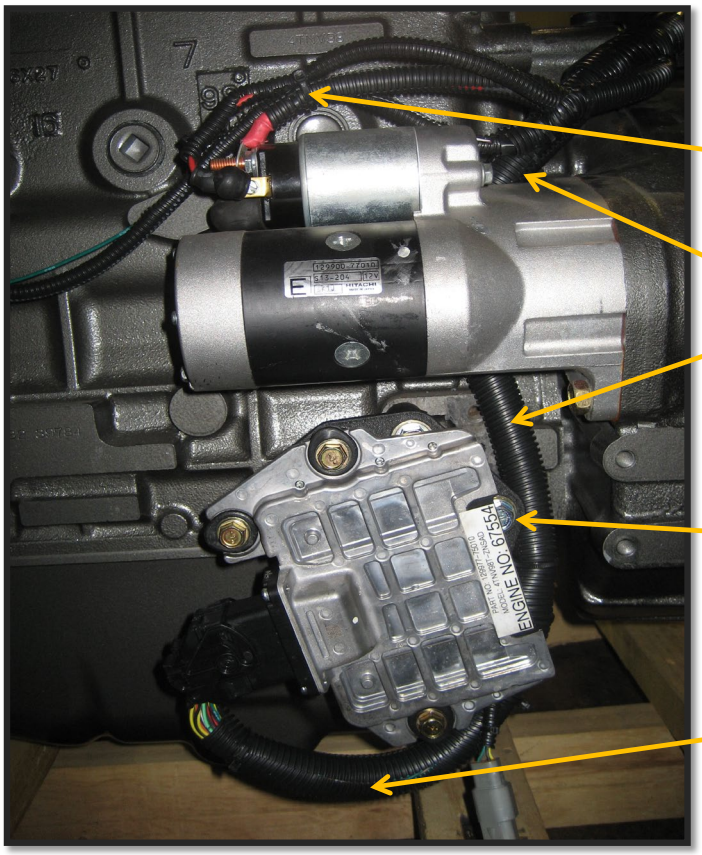
4TNV98(T)	
SAE #3	M10 bolt
SAE #4	M8 bolt

4TNV84T	
SAE #4	M10 bolt
SAE #5	M10 bolt



HellermanTyton mount and large wire tie to hold down the large section of loom to the flywheel housing. Make sure mount and loom have the proper orientation to allow the loom to rest close to the flywheel barrel.

3. Secure the ECU such that the connector faces down and there is a downward loop in the extra harness length to prevent water from pooling in the connector. An optional ECU mounting bracket (Kit # KECMB1) was used to mount the ECU to the engine in the following photos.



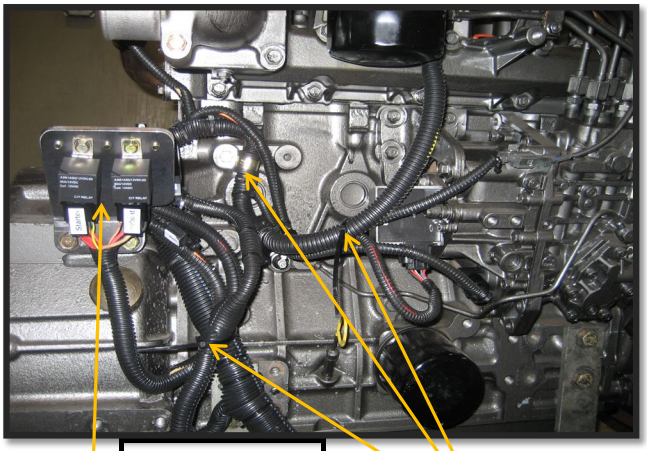
Wire tie the starter and alternator loom together above the starter.

Route ECU loom behind the starter, this will allow a drainage loop in the harness to prevent water pooling.

ECU is mounted to engine using the KECMB1 kit, shown behind the ECU in this picture.

Downward loop

4. Using the 15mm P-Clamp secure the fuel injection pump harness branch to the block. The mounting points for the turbo engines will differ from the naturally aspirated engines. Please see the pictures below for reference on exact positioning. This will allow routing of the harness behind the fuel filter and cooler lines up to the EGR and coolant sensor. Please refer to the corresponding picture below for reference:



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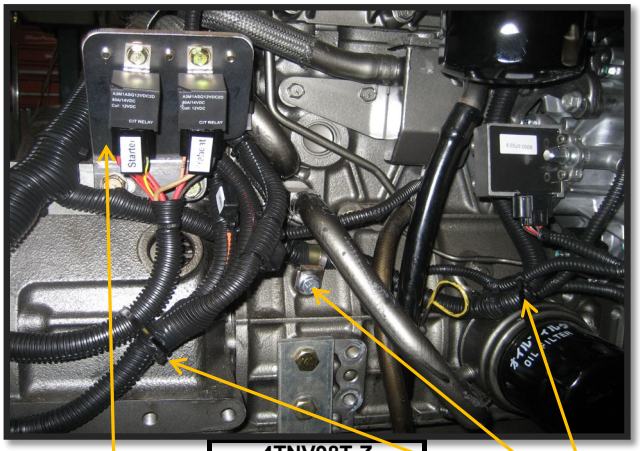
Relay mounting bracket fixed to flywheel housing

Use P-clamp to secure harness to block to allow for loose routing of air heater wire and fuel injection pump wiring. Use wire ties to bundle loose loom

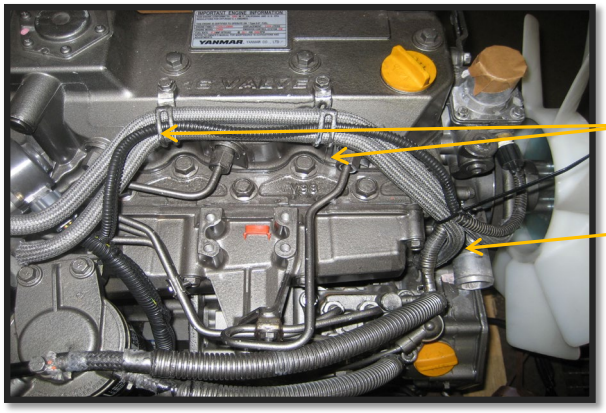


4TNV98T-Z
4TNV84T-Z

Relay mounting bracket fixed to flywheel housing

Use P-Clamp on lower bolt hole to secure harness and wire ties to bundle loose loom.

5. Route the EGR branch behind the cooling hoses and fuel injection pump up to the EGR connector. Route the coolant sensor pig tail across the valve cover using the existing metal clamps to secure the loom.



Coolant sensor wire routed through the EGR coolant clips. The coolant hoses and harness are secured with a wire tire close to the thermostat.

Refer to harness drawing for additional design requirements for consideration of application. A troubleshooting guide is available through Yanmar's Distributor Website or by contacting Yanmar America's Service Department.

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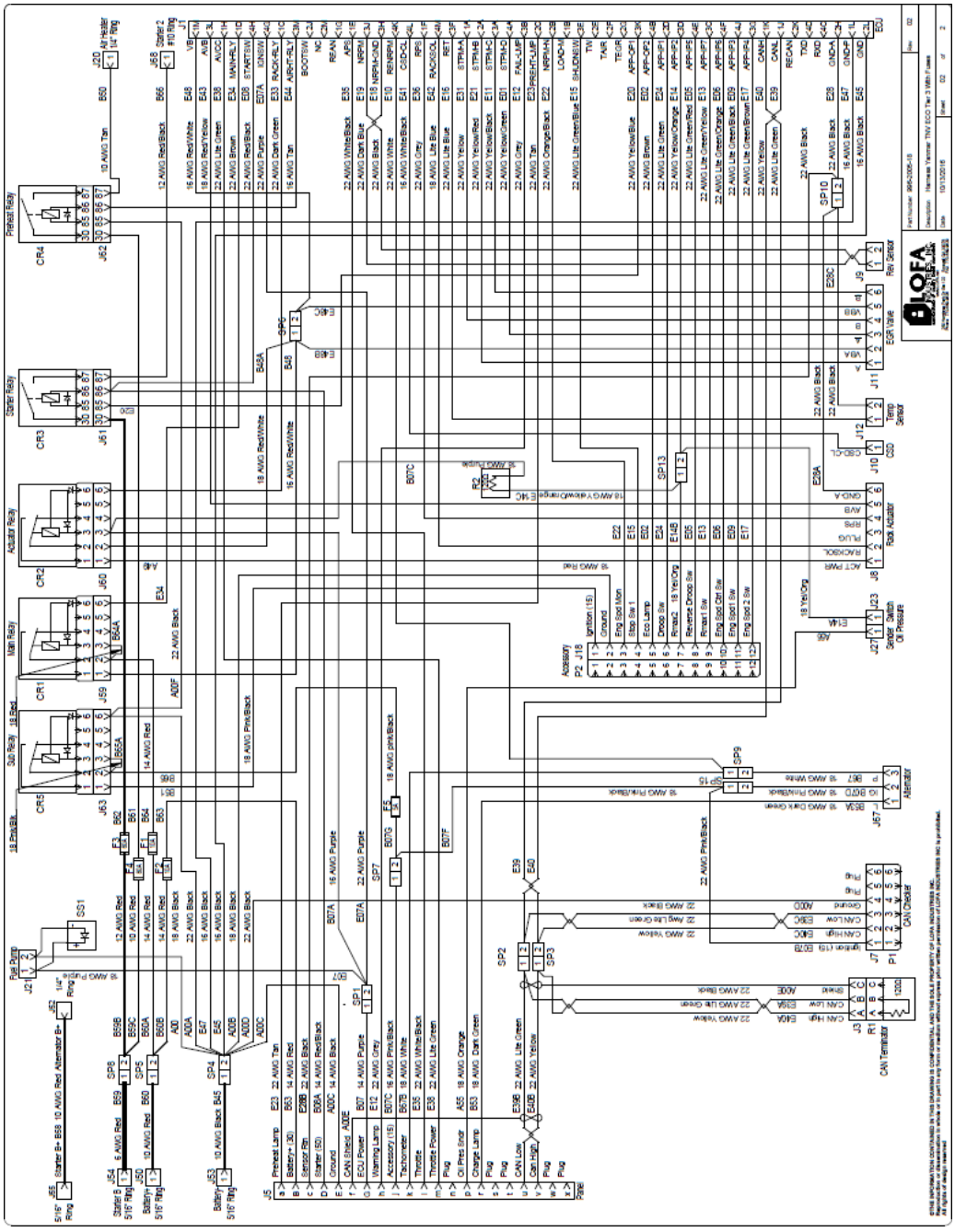

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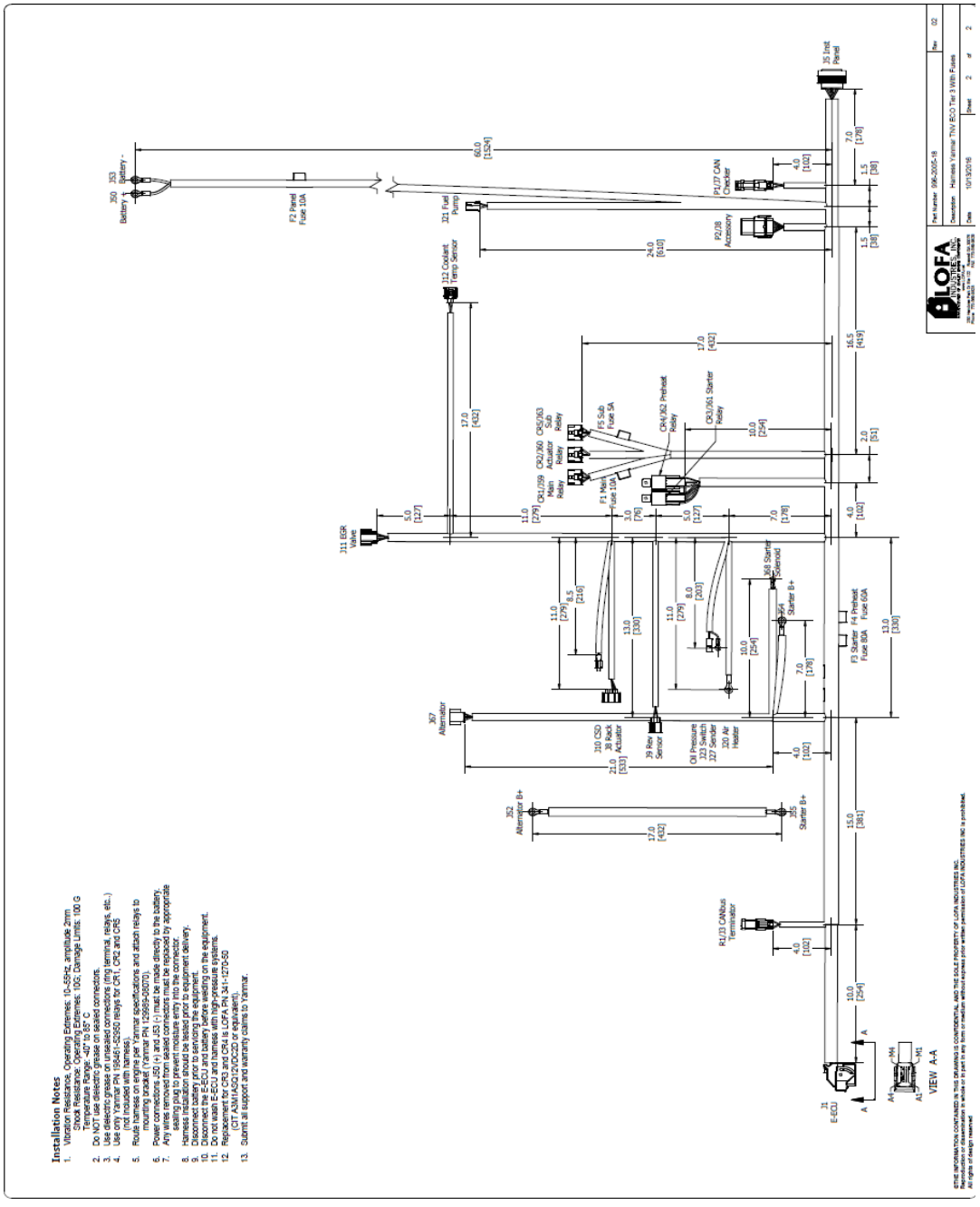

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