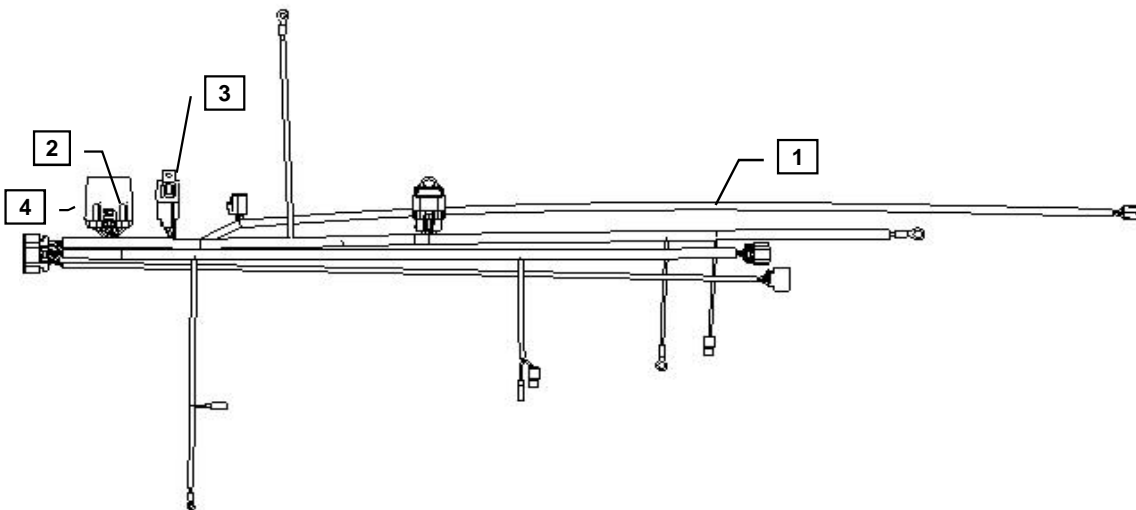




YANMAR CO., LTD.
YANMAR AMERICA CORP.

Item	Part No.	Description	Quantity	Remarks
1	129689-91090	Wiring Harness (DI)	1	(A)
2	119749-91420	Control Module Timer	1	
3	119749-91460	Relay 70A 12V Sealed	1	
4	119749-91440	Control Module Housing	1	
5	1908-00	Switch Retainer	2	
6	119749-91500	60" Harness Extension	1	(A)



ENGINE MODELS

3TNV82A-BDSAX
 3TNV88-B
 4TNV88-B

Remarks: (A) When utilizing Yanmar harness PN: 129689-91090 (included) to a control panel that requires 10 feet or more of wiring from the power source you must modify the 60" Yanmar harness extension PN: 119749-91500 to desired length and install LOFA starter relay kit PN: LPN010-0002-06 (sold separately*). When using an unmodified 60" harness extension, the starter relay kit is not required.



Installation Instructions

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. Connect harness terminals to appropriate locations. See engine wiring harness diagram and schematics provided with panel kit.

NOTE: If Denso starter is being used you must replace the starter solenoid spade connector with the Denso ring terminal included in the loose parts bag.

2. Use the Retainer Clips (5) to attach the Wire Harness (3) to two 8 mm open thread bores on the rear fuel injection side of the cylinder head.
3. After connecting all terminals to appropriate locations, check the following:
 - a) Make sure the wires do not contact the exhaust manifold or muffler and are away from all heat sources.
 - b) Make sure the wires do not contact any sharp or abrasive surfaces.
 - c) Use wire ties to secure the wire harness to the engine.
 - d) Cover all harness terminals not used after assembly is completed

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.

NOTE: When utilizing Yanmar harness PN: 129689-91090 (included) to a control panel that requires 10 feet or more of wiring from the power source you must modify Yanmar harness extension PN: 119749-91500 to desired length and install LOFA starter relay kit PN: LPN010-0002-06 (sold separately). When using an unmodified 60" harness extension, the starter relay kit is not required. LOFA contact number 1-770-569-9828.

NOTE: In the event that the 60" wire harness extension need 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.

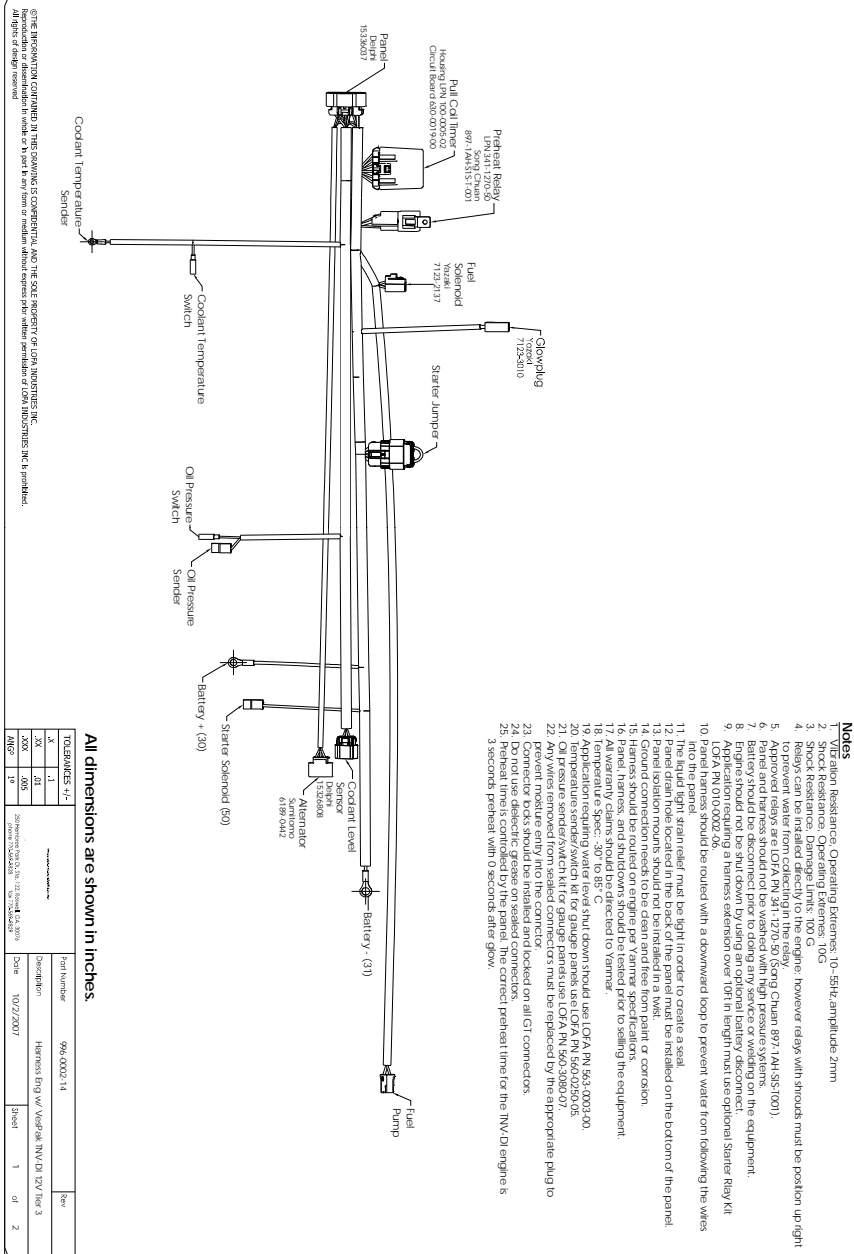
Refer to harness drawing for additional design requirements for consideration of application. A troubleshooting guide is available through Yanmar's Distributor Website or by contacting Yanmar America's Service Department.

Table 1: Proper torque specifications for bolts and nuts.

Diameter x Pitch	Kgf-m	Foot-lbf	N-m
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



DIMENSIONS HAVE BEEN REMOVED

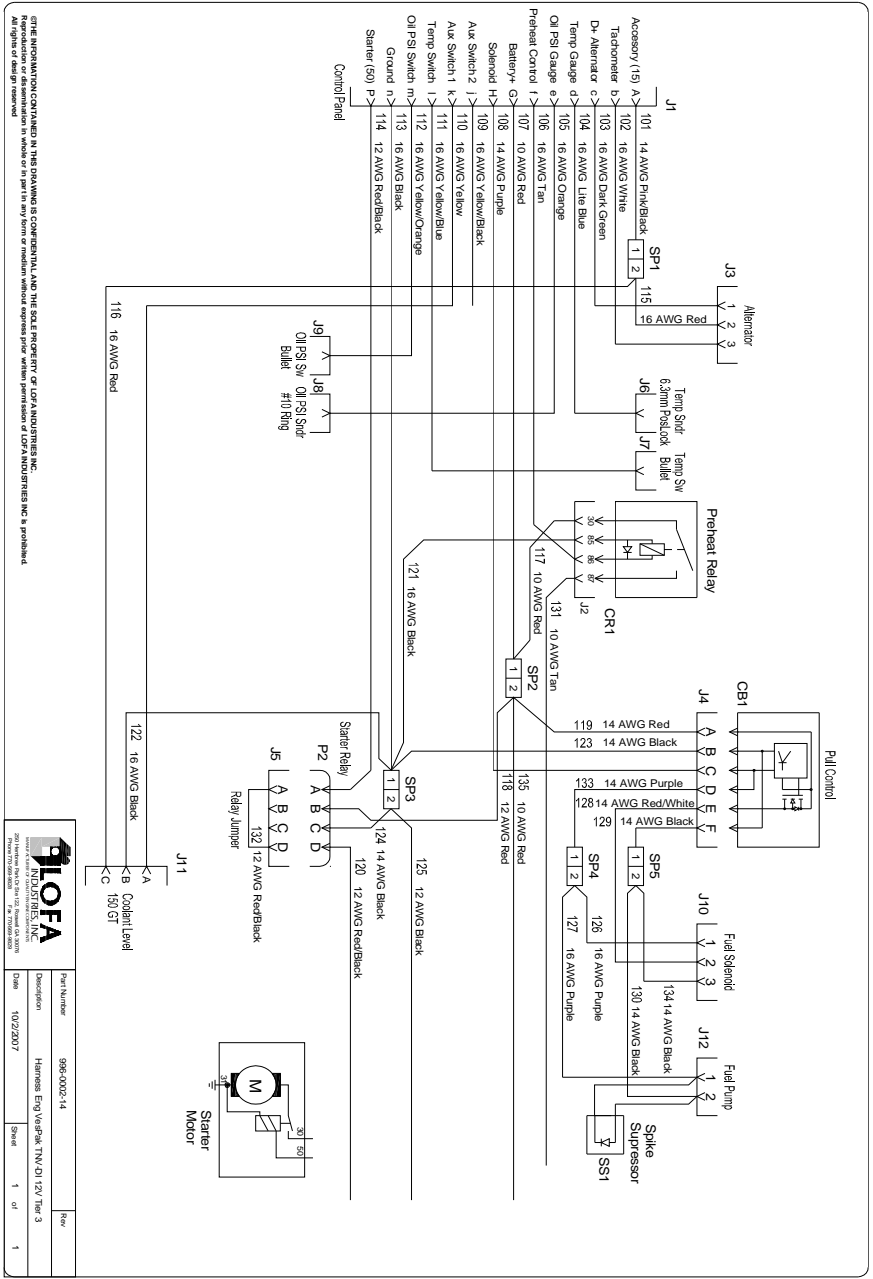


- Notes**
1. Vibration Resistance: Operating Extremes: 10-50Hz amplitude z/r/m
 2. Shock Resistance: Operating Extremes: 10G
 3. Shock Resistance: Damage Limits: 100 G
 4. All electrical components should be installed on the engine; however relays with shrouds must be position up right to prevent water from collecting in the relay.
 5. Approved relays are LOFA RN 341-1270-50 (Song Chuan 897-1A4-351-001).
 6. Panel and harness should not be washed with high pressure systems.
 7. Engine should be shut down by using an optional battery disconnect.
 8. Engine should not be shut down by using an optional battery disconnect.
 9. Application requiring a harness extension over 10ft in length must use optional Starter Relay Kit
 10. Panel harness should be routed with a downward loop to prevent water from following the wires into the panel.
 11. The liquid tight strain relief must be tight in order to create a seal.
 12. Panel harness should not be installed on the bottom of the panel.
 13. Panel isolation mounts should not be installed in a wet.
 14. Ground connection needs to be clean and free from paint or corrosion.
 15. Harness should be routed on engine per Yanmar specifications.
 16. All electrical components should be protected for corrosion.
 17. All warranty claims should be directed to Yanmar.
 18. Temperature Spec: -30° to 85° C
 19. Application requiring water level shut down should use LOFA RN 503-0003-00.
 20. Oil pressure sender/switch kit for gauge harness use LOFA RN 560-3080-07.
 21. Oil pressure sender/switch kit for gauge harness use LOFA RN 560-3080-07.
 22. Any wires removed from sealed connectors must be replaced by the appropriate plug to prevent moisture entry into the connector.
 23. All electrical components should be locked on all GI connectors.
 24. Do not use dielectric grease on sealed connectors.
 25. Preheat time is controlled by the panel. The correct preheat time for the (NV/D) engine is 3 seconds preheat with 0 seconds after glow.

All dimensions are shown in inches.

TOLERANCES +/-	Part Number	Rev
.005	996-0003-14	3
.005	Harness Eng w/ VSEP-38 (NV/D) 2V tier 3	3
.005	Drawn: 10/22/2007	1
.005	Sheet	1
.005	of	2

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LOFA INDUSTRIES, INC.		Part Number	996-0002-14	Rev	
200 W. Highway 100, Box 122, Fresno, CA 93701		Designer	Harrison, Eng, Varkap, TN, Q1, 12/18/03		
Date	10/2/2007	Scale	1 of 1		
		Sheet	1	of	1