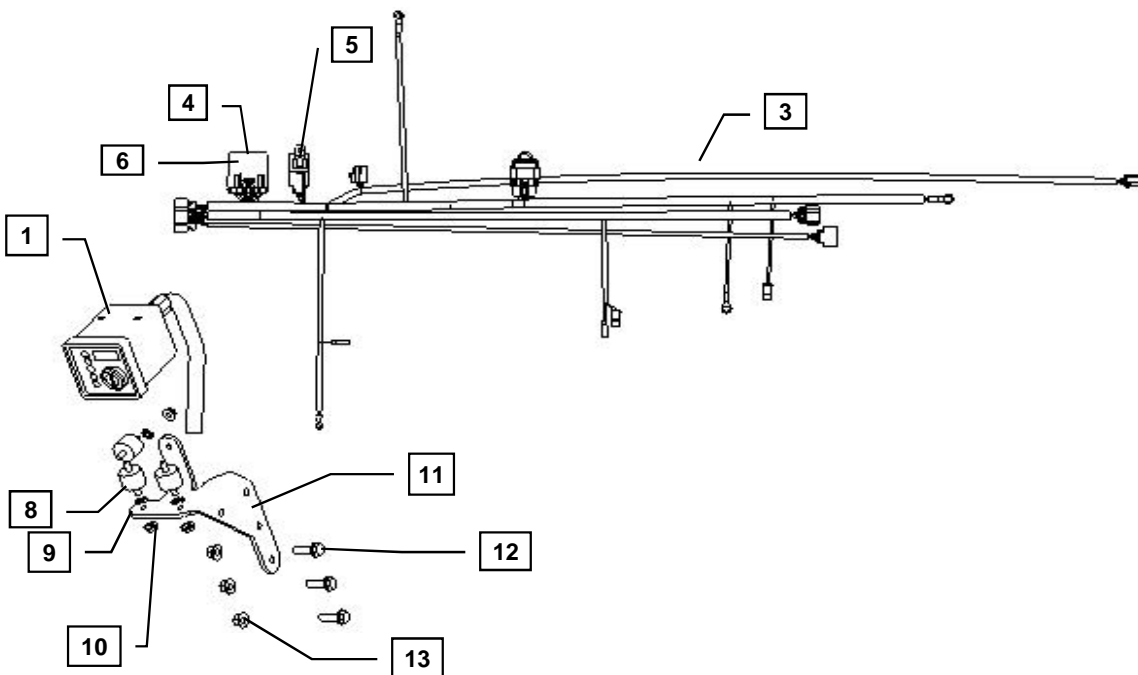




YANMAR CO., LTD.
YANMAR AMERICA CORP.

Item	Part No.	Description	Quantity	Remarks
1	129689-91110	Control Panel (DI)	1	
2	129689-91190	Ignition Key, Engine Control Panel	2	
3	129687-91100	Wiring Harness (DI) Assembly2	1	(B)
4	119749-91420	Control Module Timer	1	
5	119749-91460	Relay 70A 12V Sealed	1	
6	119749-91440	Control Module Housing	1	
7	1908-00	Switch Retainer	2	
8	129689-92100	Isolator Mount M6 x 1.0	3	
9	129689-91130	Panel Mounting Bracket	1	(A)
10	26366-060002	Nut, M6 x 1.0 (Flanged hex head)	4	
11	129689-91130	Panel Mounting Bracket	1	
12	26106-080252	Bolt, M8 x 1.25 - 25 (Flanged hex head)	3	
13	26366-080002	Nut, M8 x 1.25 (Flanged hex head)	4	



TIER 2 MODELS

3TNV82A
3TNV88
3TNV84T
4TNV88
4TNV84T
4TNV98
4TNV98T

TIER 3 MODELS

3TNV82A-GGE
3TNV84T
4TNV84T-BGGE

Remarks: (A) 129689-91180 is not a service part and does not need to be replaced.
(B) When utilizing the Yanmar harness to a control panel that has 10 ft. or more of wiring between them, you must install a relay, 119749-91400.



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. Fasten Control Panel (1) to the Mounting Bracket (11) using Isolators (8), Star Washers (9) and Lock Nuts (10). Star washers should be installed between Isolators and Bracket.

NOTE: Make sure Isolators are not twisted during installation to avoid premature failure of components.

2. Assemble Control Panel (1) and Mounting Bracket (11) assembly to injection pump side rear engine leg using M8x1.25 - 25 Bolts (12) and M8x1.25 Flange Nuts (13).
3. Connect harness terminals to appropriate locations. See engine wiring harness diagram and schematics provided with panel kit.

NOTE: The spare ring terminal in the kit is for the S-Terminal on the Denso starter. The spade connector, for the Hitachi starter, will have to be replaced with the ring terminal if Denso Starter is equipped.

4. Use the Retainer Clip (7) to mount the Relay (5) to an open thread bore on the cylinder head.
5. After connecting all terminals to appropriate locations, check the following:
 - a) Make sure the wires do not contact the exhaust manifold or muffler.
 - 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 before operation. If at any time during operation, the battery cables are removed, the harness could fail prematurely.

NOTE: Application requiring a harness extension to a control panel over 10Ft in length must use the starter relay at the connector labeled Starter Jumper, 119749-91400.

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.

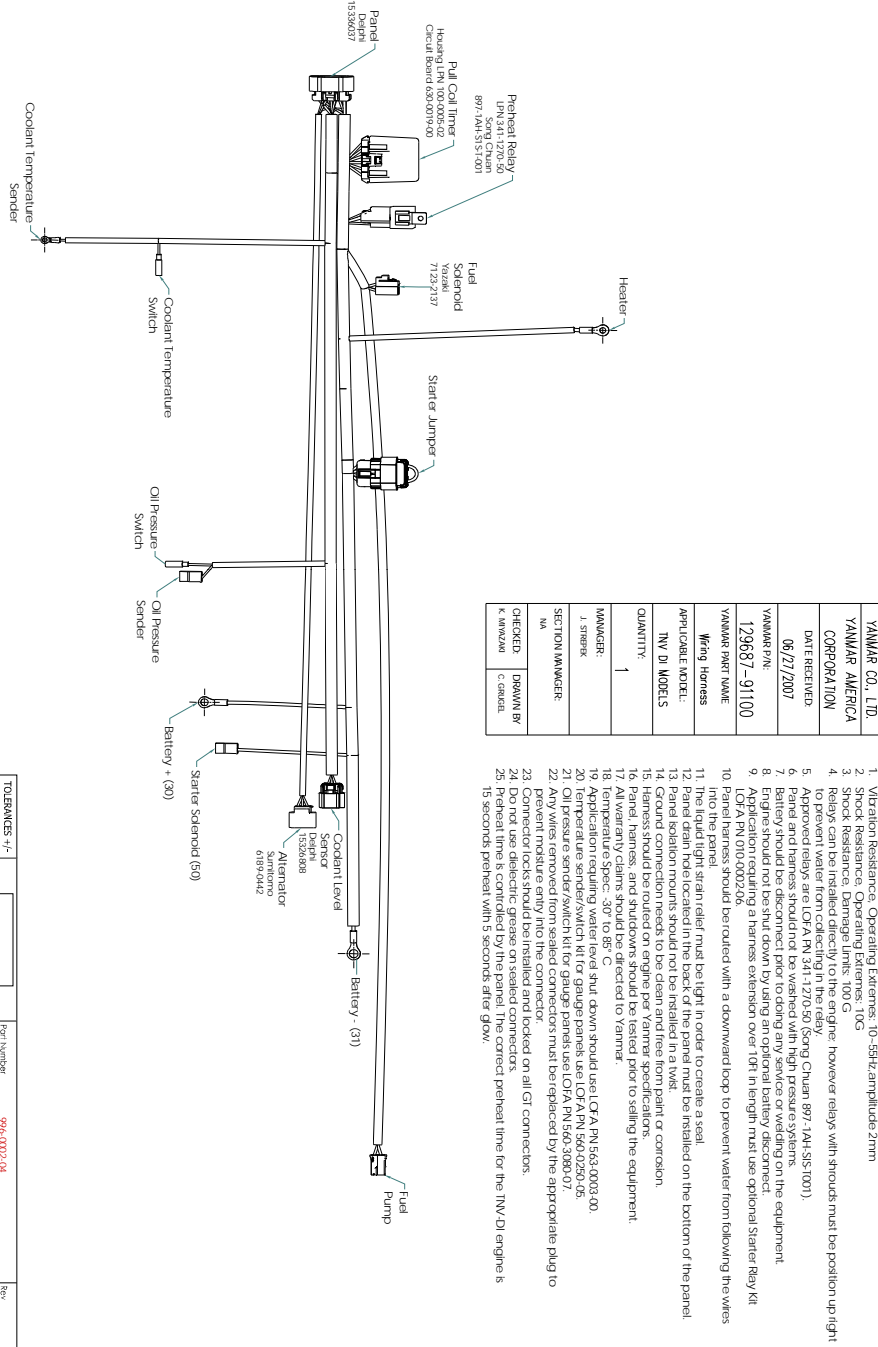
Table 1: Proper torque specifications for bolts and nuts.

Diameter x Pitch	Kgf-m	Foot-lbf	N-m
M8 x 1.25	1.5 ~ 2.9	10.6 ~ 20.9	14.4 ~ 28.3
M10 x 1.50	4.5 ~ 5.5	32.5 ~ 39.8	44.0 ~ 54.0
M12 x 1.75	8.0 ~ 10.0	57.8 ~ 72.3	78.4 ~ 98.0



Installation Instructions

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Notes

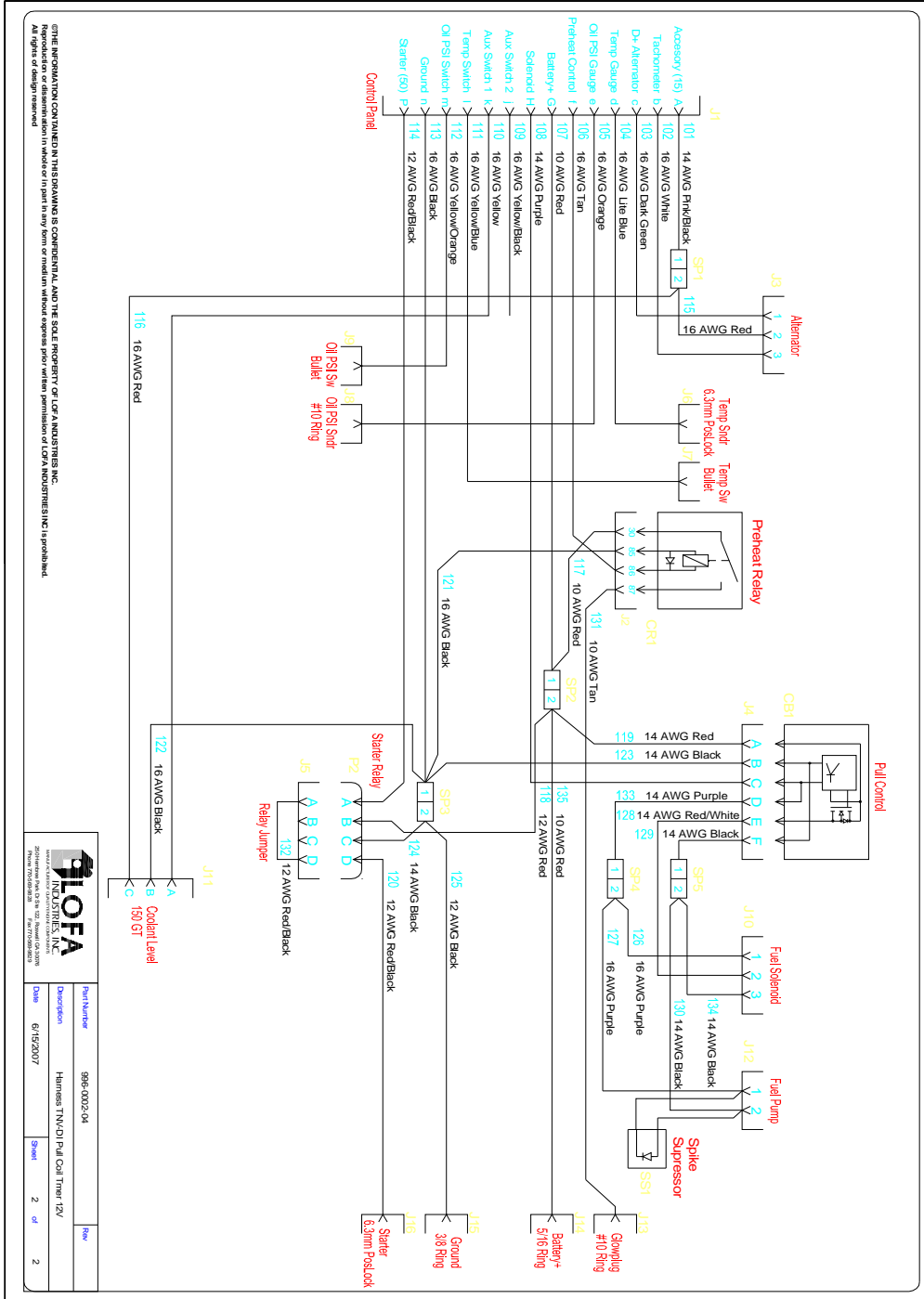
- Vibration Resistance, Operating Extremes: 10-55Hz/amplitude 2mm
- Shock Resistance, Operating Extremes: 10G
- Preheat Relay should be installed on the engine.
- Relays can be installed directly to the engine however relays with shrouds must be position up right to prevent water from collecting in the relay.
- Approved relays are LOFA PN 341-1270-50 (Song Chuan 897-1A4-S15-1001).
- Panel and harness should not be washed with high pressure systems.
- Battery should be disconnected prior to doing any service or working on the equipment.
- Do not use electrical grease on any electrical connectors.
- Application requiring a harness extension over 10ft in length must use optional Starter Relay Kit LOFA PN 010-000206.
- Panel harness should be routed with a downward loop to prevent water from following the wires into the panel.
- Preheat light strain relief must be tight in order to create a seal.
- Preheat light strain relief must be installed in the seal kit.
- Panel isolation mounts should not be installed in a twist.
- Ground connection needs to be clean and free from paint or corrosion.
- Harness should be routed on engine per Yanmar specifications.
- Panel, harness, and studowns should be tested prior to selling the equipment.
- All warranty claims should be directed to Yanmar.
- Application requiring water level shut down should use LOFA PN 563-0003-00.
- Temperature sender/switch kit for gauge panels use LOFA PN 560-0250-05.
- Oil pressure sender/switch kit for gauge panels use LOFA PN 560-3080-07.
- Any wires removed from sealed connectors must be replaced by the appropriate plug to prevent moisture entry to the connector.
- Do not use electrical grease on any electrical connectors.
- Do not use dielectric grease on sealed connectors.
- Preheat time is controlled by the panel. The correct preheat time for the TNV-DI engine is 15 seconds preheat with 5 seconds after glow.

TOLERANCES +/-		Part Number		Rev	
X	.1	996-0002-04			
.XX	.01				
.XXX	.005				
MFG	1P				

Description	Date	Sheet	of
Harness TNV/DI/Pull Coil Timer 12V	6/15/2007	1	2



Installation Instructions



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LOFA INDUSTRIES, INC. 20000 Highway 100, Suite 100 P.O. Box 999999 Houston, TX 77299-9999	Part Number 996-0002-04	Revision Rev
Description Hilmaris THV(D) Fuel Cool Ther 12V	Date 6/15/2007	Sheet 2 of 2