



Installation Instructions

DGK70F\FU Block Heater



Kit Contents:

- (1) 120v-1000 Watt Block Heater and Mounting Hardware
- Cable ties

**Fittings:**

- (1) 1/4 NPT M/M 6" Nipple
- (1) 1/4 FPT Tee
- (1) 5/8 x 1/4 NPT Male Hose Barb
- (1) 1/4 NPT M/F Ball Valve

**Hoses, Split Wrap and Hose Clamps**

- (1) 5/8" x 32" Heater Hose
- (1) 5/8" x 30" Heater Hose
- (1) 1" x 32" Split Wrap
- (1) 1" x 30" Split Wrap
- (4) 1" Hose Clamps



Tools & Materials Required:

- (2) 1/4" Pipe Plugs
- (1) 5/16" Vacuum Cap or equivalent
- (1) 5/8" Vacuum Cap or equivalent
- 11/16" Open-End wrench
- 17 mm Deep Well Socket - 1/2 Drive
- 10"-12" - 1/2 in Drive Extension
- 8" - 1/2" Drive Extension
- M8 Long Hex Key - 1/2 Drive
- 1/2" Ratchet Wrench
- 13 mm socket - 3/8 drive
- 3/8 ratchet or driver with 3" extension
- 3/8" Socket - 1/4 Drive
- 8"- 1/4" Drive Extension
- 1/4" Ratchet Wrench
- 7/16" closed end wrench or ratchet wrench
- #2 Phillips screwdriver
- Needle Nose Pliers
- Long Reach Bent Nose Needle Nose Pliers
- White Teflon Tape
- (2) 8" Adjustable Crescent Wrench
- 5/16" Nut Driver or equivalent

NOTES

INSTALLATION INSTRUCTIONS

- Step 1: Verify Kit Contents
- Step 2: Read through installation instructions before beginning the procedure.
- Step 3: Release the Right Enclosure rear door latch, then open both right enclosure doors. (Figure 1)

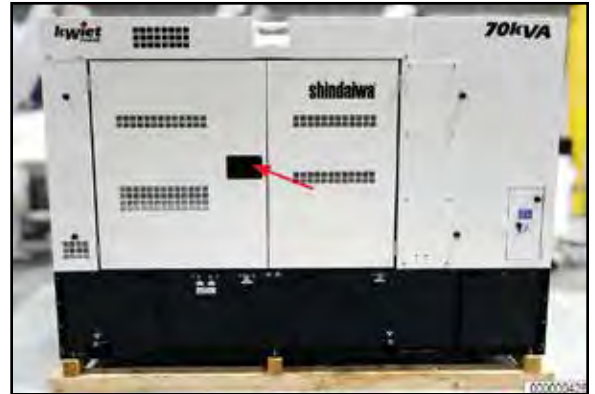


Figure 1

- Step 4: Remove nut and washer securing NEGATIVE battery cable to NEGATIVE terminal using a 13mm wrench. (Figure 2)



Figure 2

- Step 5: Position the negative battery cable out of the way, then reinstall washer and nut to battery terminal. (Figure 3)



Figure 3

- **Step 4: Prepare the treads of all the block heater piping components by applying teflon tape as shown. (Figure 4)**

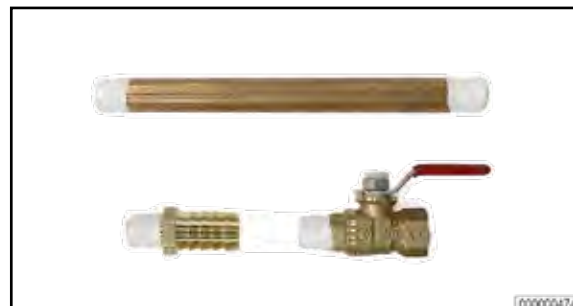


Figure 4

- **Step 5: Attach supplied hoses to the block heater. The longer of the two gets attached to the bottom. Secure hoses to block heater with two of the supplied hose clamps using a 5/16" nut driver or equivalent. DO NOT OVERTIGHTEN. (Figure 5)**



Figure 5

- **Step 6: Place the split-loom hose over the heater hoses. (Figure 6)**



Figure 6

- **Step 7: Prepare block heater mounting installation template for use; using scissors or safety knife, cut out the template following the dashed lines.**
- **Step 8: Place and secure using masking tape, the block heater mounting template onto the the side of the battery tray as shown. (Figure 7)**

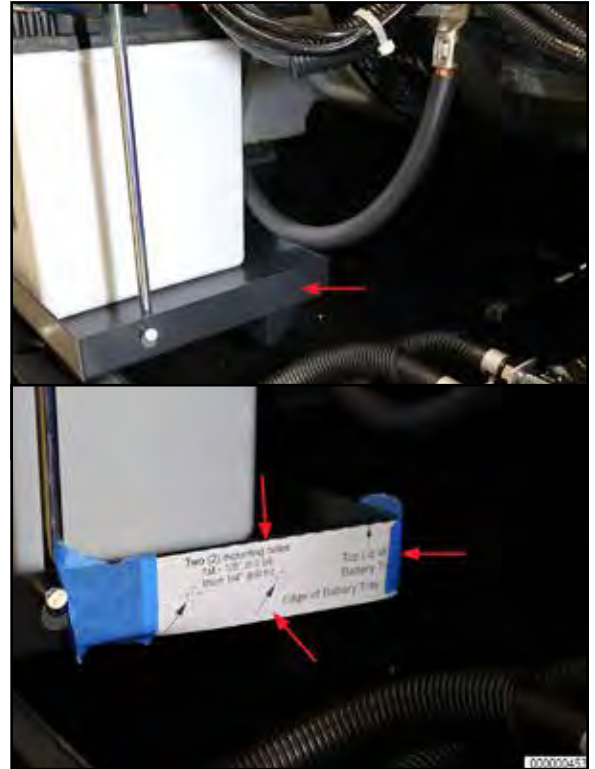


Figure 7

- **Step 9: Use center punch to mark centers of holes indicated on template.**
- **Step 10: Using a 1/8" drill bit and drill, create pilot holes at previously marked center points on template.**
- **Step 11: Using a 1/4" drill bit, open pilot holes to final size. Now remove and discard template. (Figure 8)**



Figure 8

- **Step 12: Attach Block Heater Mount Bracket to battery tray with two (2) of the supplied bolts and whiz-lock nuts, using a 3/8" socket, ratchet and 7/16" wrench. as shown. (Figure 9)**



Figure 9

- **Step 13: Attach and secure Block Heater to Mounting Bracket with two (2) of the supplied bolts and whiz-lock nuts, using a 3/8" socket, ratchet and 7/16" wrench. Note: Route block heater supply (lower hose) under engine and position upper hose as shown. (Figure 10)**



Figure 10

- **Step 14: Release latch on Left Enclosure door, and open the door. (Figure 11)**



Figure 11

- **Step 15:** Locate the coolant drain hose connection on the left side of the engine block. Split and pull back on the split-loom covering the drain hose approximately 8-10 inches. (Figure 12)

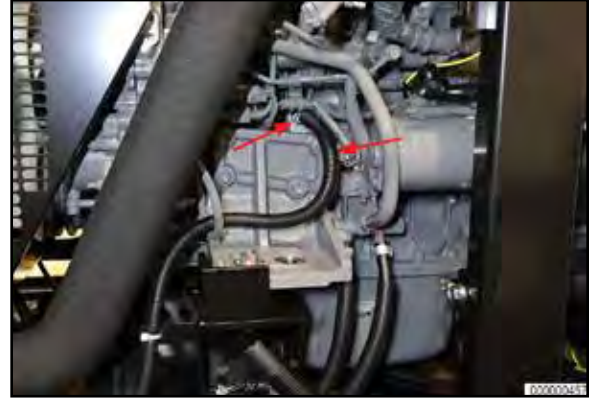


Figure 12

- **Step 16:** Pre-assemble the block heater drain piping intended to be attached to the engine block. The Tee fitting is attached to one end of the 6 inch threaded pipe as shown. (Figure 13)
- **Step 17:** Place an absorbent pad or equivalent underneath the block drain hose.
- **Step 18:** Remove hose clamp from engine block drain hose using needle nose pliers.(Figure 14)



Figure 13



Figure 14

- **Step 19:** Using a hose clamp or equivalent, pinch closed the block drain hose approximately 8-10 inches from the engine block. (Figure 15)

NOTE: Have a 5/16" vacuum cap ready for the next step to reduce spillage of coolant.



Figure 15

- **Step 20:** Using long reach bent needle nose pliers, carefully remove the engine block drain hose from the fitting. Immediately cap off the fitting using the 5/16" vacuum cap. (Figure 16)



Figure 16

- **Step 21:** Remove the block drain hose fitting from the engine block using a 1/2" drive - 17 mm deep well socket, with a 10" or 12" drive extension and 1/2" ratchet. (Figure 17)

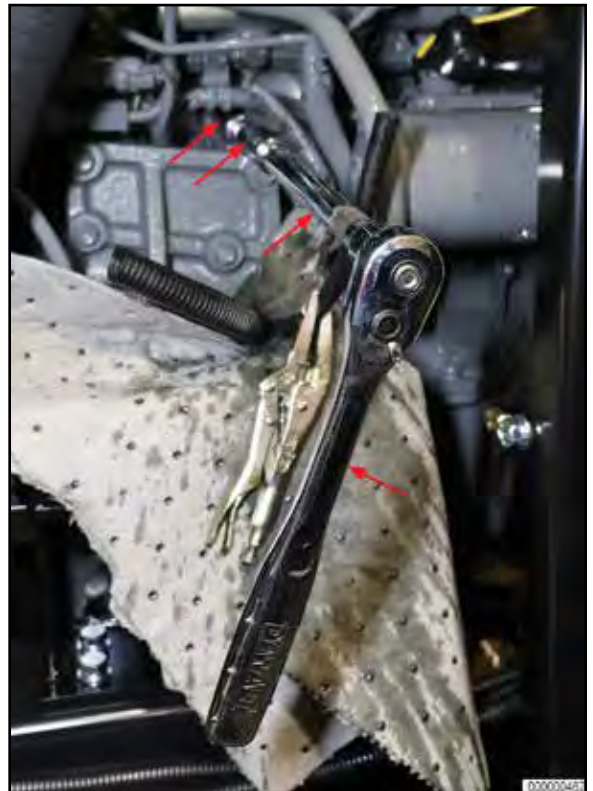


Figure 17

- **Step 21:** Immediately upon removal of the block drain fitting, install the 6" pipe with tee fitting where the block drain fitting was removed. Snug the pipe into the block by using a crescent wrench on the tee fitting, rotate fitting till the tee is vertical as shown. (Figure 18)



Figure 18

- **Step 27:** Wrap new teflon tape onto threads of block drain fitting previously removed in step 21.
- **Step 28:** Remove the Pipe Plug from the end of the Tee Fitting and quickly replace it with the Block Drain Fitting. Secure the block drain fitting to the tee fitting to prevent leaks. (Figure 19)



Figure 19

- **Step 29:** Remove vacuum cap and attach block drain hose to barb fitting, then secure with hose clamp. Reposition split loom over hose. (Figure 20)

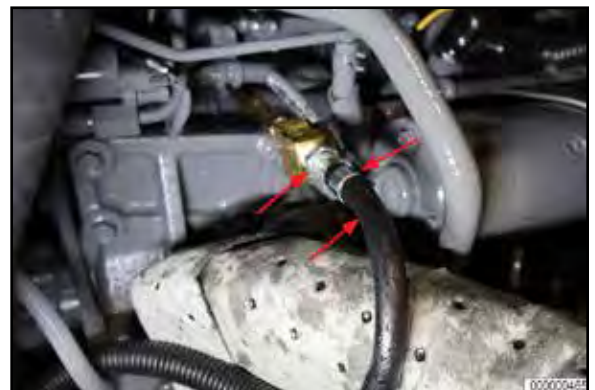


Figure 20

- **Step 30:** Remove the remaining pipe plug from the tee fitting and install the ball valve and hose barb assembly. Orient the ball valve assembly as shown. (Figure 21)



Figure 21

- **Step 31:** Attach Block Heater Hose to Hose Barb, secure with hose clamp, then reattach Ball Valve Lever and secure using previously remove nut. (Figure 22)



Figure 22

- **Step 32:** Place an absorbent pad or equivalent underneath the engine water piping - cap and hose clamp as shown. (Figure 23)



Figure 23

- **Step 33:** Using needlenose pliers to remove the hose clamp and pliers to grasp the hose cap, proceed with removing the cap over the water pipe. (Figure 24)

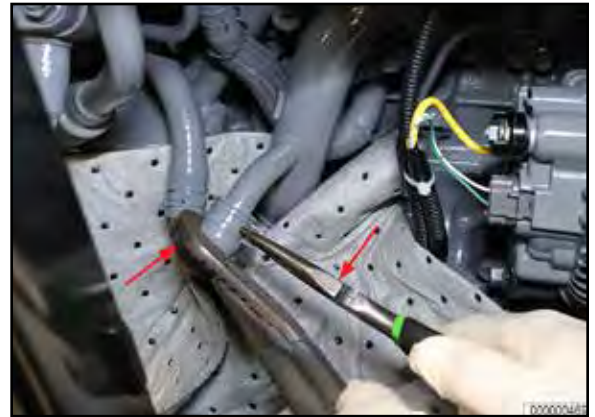


Figure 24

- **Step 34:** Slide upper block heater hose over water pipe; secure hose to water pipe with a hose clamp using a 5/16" nut driver or equivalent. (Figure 25)



Figure 25

- **Step 35:** Slide split loom cover up over upper block heater hose as shown. (Figure 26)



Figure 26

- **Step 36:** Route the block heater A\C power cord back along the Frame Base towards the Control Cabinet.

- **Step 37:** Using a 13mm socket and driver, remove eight (8) bolts securing the Front Enclosure Frame Lower Panel to the Front Enclosure Frame. (Figure 27)
- **Step 38:** Open the Fuel door, and using your right hand lift up on the fuel door opening to remove the Front Enclosure Frame Lower Panel. Store front enclosure frame lower panel in a safe secure manner. Retain the bolts for reinstallation.



Figure 27

- **Step 39:** Attach the Block Heater A\C power plug to a receptical from Shore Power. Wrap the A\C block heater power cord plug and shore power receptacle with electrical tape to prevent them from separating. (Figure 28)



Figure 28

- **Step 40:** Position the A\C power cord along the back of the frame base, securing the cord to the alternator mounts as shown using a cable ties. (Figure 29) Remove excess tails from cable ties when complete.



Figure 29

- **Step 41:** Reinstall the Front Enclosure Frame Lower Panel, securing in place using a 13 mm socket and driver, and the eight (8) previously removed bolts.(Figure 30)



Figure 30

- **Step 42:** Moving back to the Left Enclosure side, open the ball valve installed in step 31; this allows coolant to flow into the block heater for normal operation.
- **Step 43:** Close the Left Enclosure side Left door, making sure the door completely latches closed.
- **Step 44:** Remove bolt and lockwasher from NEGATIVE battery terminal. Reposition and reattach NEGATIVE battery cable to NEGATIVE battery terminal, along with any other wires to Negative battery cable. Secure the bolt and washer using a 13mm wrench. DO NOT OVERTIGHTEN bolt - Snug only. (Figure 31)



Figure 31

- **Step 35:** Top off the radiator reservoir to replace any fluid lost during installation using a 50/50 mix of "green" coolant.
- **Step 36:** Close both Right Side Enclosure doors, making sure they latch completely.

The Block Heater Installation is now complete