Air Heater Instruction

FJH－2.8AⅡ/5AⅡ

Content

Product Parameters

	Quality	Dimensions	Heat Value	Hot air volume	rated power consumption	Power consumption for ignition	Oil consumption
units	Kg	mm	KW	M/h	W	W	L/h
FJH—2.8A II	2.7	310×115×122	2.8	90	36	≤100	0.36
FJH—5A II	4.5	376×140×150	5	150	50	≤100	0.6

Service Conditions

• Storage Temperature: -55℃ to +70℃

• Operating Temperature: -41℃ to +50℃

• It is recommended to use low temperature diesel oil that is compatible with the ambient temperature for the heater. Otherwise it will cause paraffin precipitation in the pipe and the heater will not work properly:

Above 5℃	Above -5℃	Above -15℃	Above -30℃	Above -41℃
0# Diesel Oil	-10# Diesel Oil	-20# Diesel Oil	-35# Diesel Oil	-50# Diesel Oil

● Applicable Altitude: Civil≤3000m, Military≤5500m

● Normal Vehicle Speed: 0-100km/h;

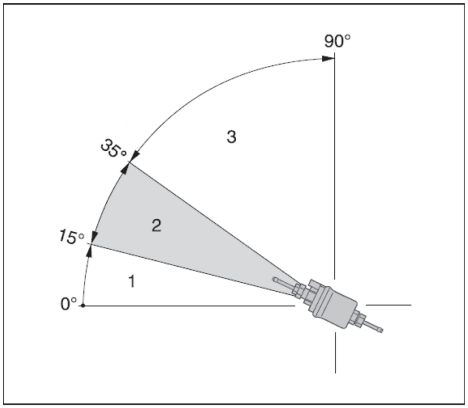
Installation Guidance

1. Select the appropriate place to install the heater where it is away from vibration, rain and water. The heater shall be installed in a protective cover or inside a bin.

• Installation of Oil Tank: Fuel oil can be sucked directly from the vehicle's tank, however the pipe used must be independent and do not share oil pipes with other equipment inside the vehicle. The oil tank shall be arranged separately if the length between the tank and the heater is too long (exceeds

10m). The height difference between the oil level in the tank and the heater shall not exceed ± 500mm.

• A Φ4x1 nylon pipe and special joints shall be adopted for the oil pipe, and the pipe clamps must be fastened, and the oil pipe shall have protective casing around it. The oil outlet of the electromagnetic pump shall be installed upwardly. (It is best to tilt upwards to 15 ° to 35 ° as shown below, but not to tilt downwards.). The length of the oil pipe from the oil tank to the electromagnetic pump shall not exceed 2 m, and the length of the oil pipe from the oil pump to the heater shall not exceed 8m.



• Installation of Intake Pipe: the inlet of the combustion air shall be connected with a hose of 0.2m-2m to the outside of the vehicle to suck fresh air and the flexible pipe shall be fixed with clamps, the bending angle of the pipe shall not exceed 90°. Exhaust gas shall be prevented from being sucked into the air inlet. The direction of the air inlet shall not be the driving direction and there shall be no obstructions within 300 mm below the air inlet

• Installation of Exhaust pipe: The exhaust gas outlet shall be connected with a metal hose and fixed with a clamp, and horse's bending angle shall not

exceed 90°. To prevent the exhaust gas from entering into the air inlet, cold air inlet, and vehicle windows, the exhaust outlet of the hose must be outside the vehicle and not directly towards the driving direction of the vehicle and must not exceed the vehicle side limits. The temperatures of the exhaust pipe and exhaust gas can be up to about 400 ℃, which shall be kept at distance with the surrounding parts, and there shall be no obstructions within 300mm below it and blocking by debris and snow shall be avoided.

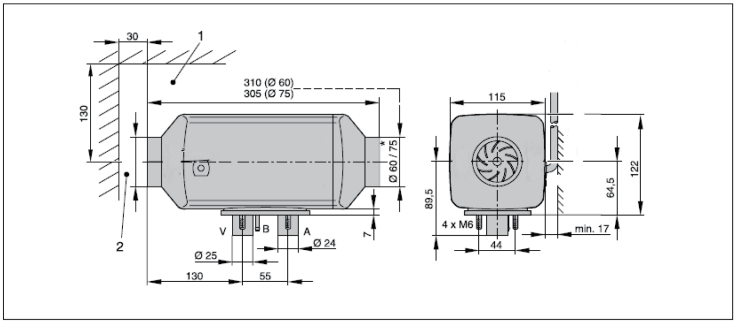
•Installation of Air Inlet Pipe: Circulating air is sucked from the cab by the cold air inlet, however, it will reduce the air volume if the pipe is too long or the suction speed is too fast, causing over-temperature of the heater body and automatic shutdown. The distance between the air inlet and the cab wall shall be equal to or greater than 50mm to avoid inadequate volume of air sucked.

•Installation of Air Outlet Pipe: the outlet of the hot air can be connected with an aluminum horse to the cab for heating and defrost and fixed with a clamp, however, it will reduce the air volume if the pipe is too long or the suction speed is too fast, causing over-temperature of the heater body and automatic shutdown. The distance between the air inlet and the cab wall shall be equal to or greater than 50mm to avoid inadequate volume of air sucked.

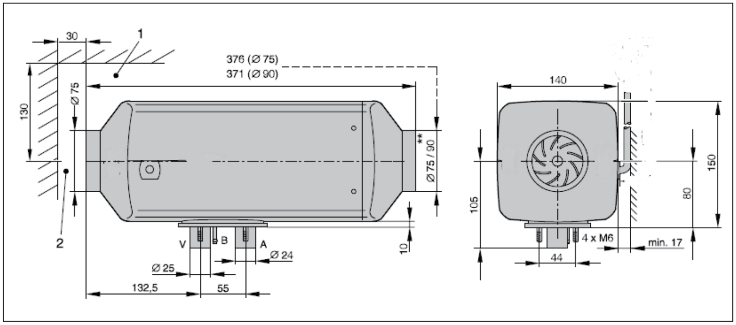
• Installation of Wiring Harnesses and Switches: drill a hole on the dashboard, insert the switch board into the hole, and tighten the harness connector. The control harness shall be added with rubber casing when going through a vehicle's body, one end of the control harness is connected to a switch or a switch transition line, one end is connected to the heater and one end is connected to the electromagnetic pump.

•☉Notice: Check whether the oil circuit connection and the electric circuit connection are correct before starting. Check whether there are foreign matters entering into the air inlet/outlet pipe and the intake/exhaust pipe. Do not place any combustible or flammable and explosive dangerous goods near the heater.

FJH-2.8AⅡ Outline Dimensional Drawing



FJH-5AⅡ Outline Dimensional Drawing

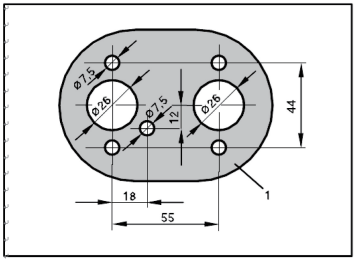


1. The minimum installing spacing (free space) used to open the cover, remove the ignition plug and the controller

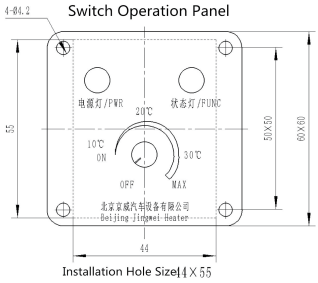
2. The minimum installing spacing (free space) used to suck heated air

A = **Exhaust Gas**
B = **Fuel**
V = **Combustion Air**

Installation Hole Drawing

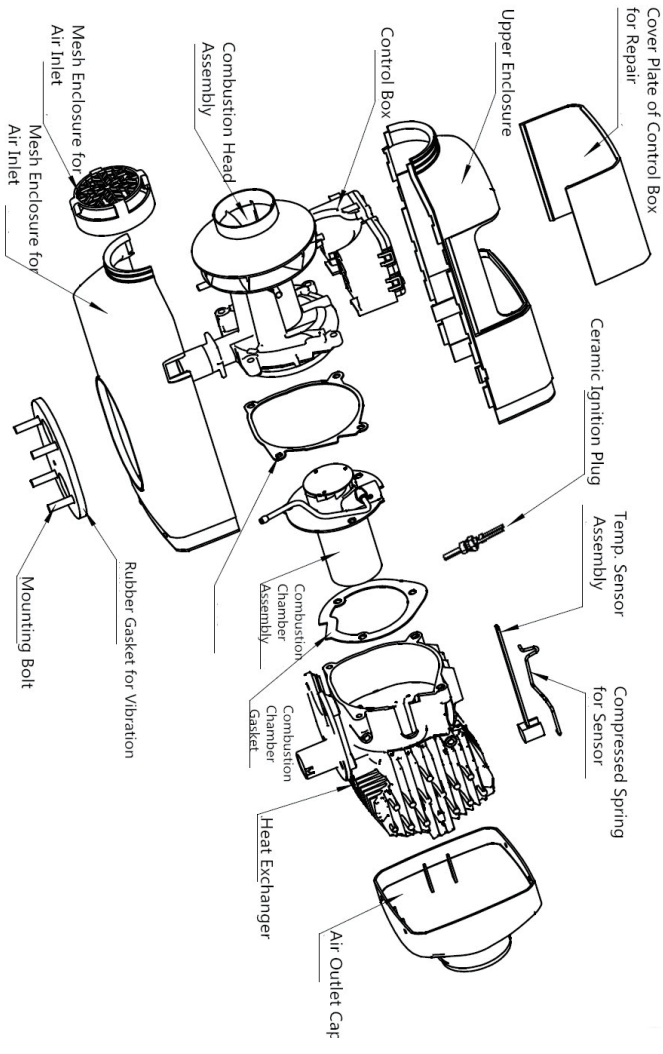


Switch Operation Panel

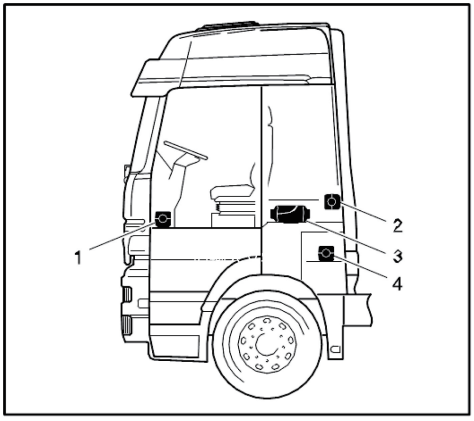


Installation Hole Size 44 X 55

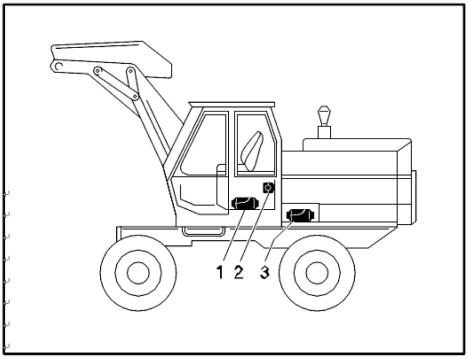
Heater Body Structure Diagram



Installation Position Diagram



1 The heater is located below the front passage seat
2 The heater is located on the rear wall of the cab
3 The heater is located under driver’ s seat back
4 The heater is located in the tool box



1 The heater is located in the box of the driver’ s seat
2 The heater is located on the rear wall of the cab
3 The heater is located in the protection box

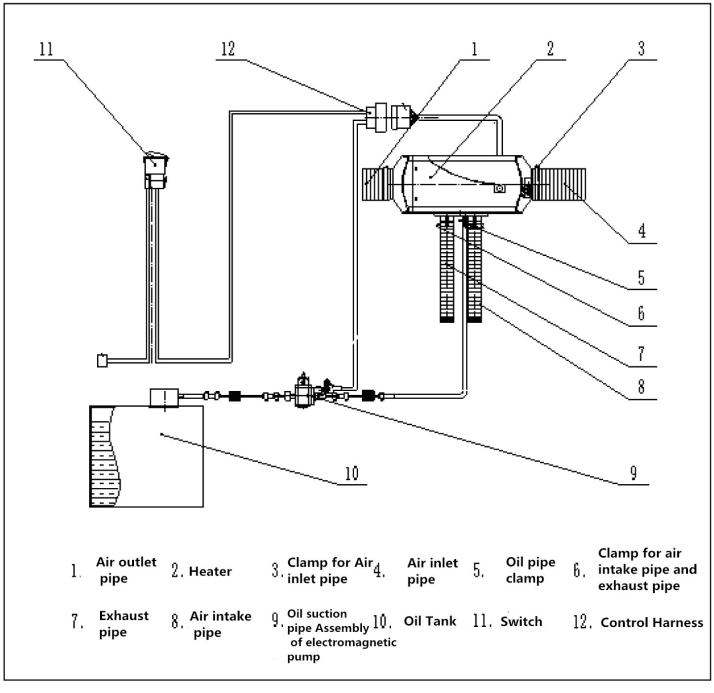
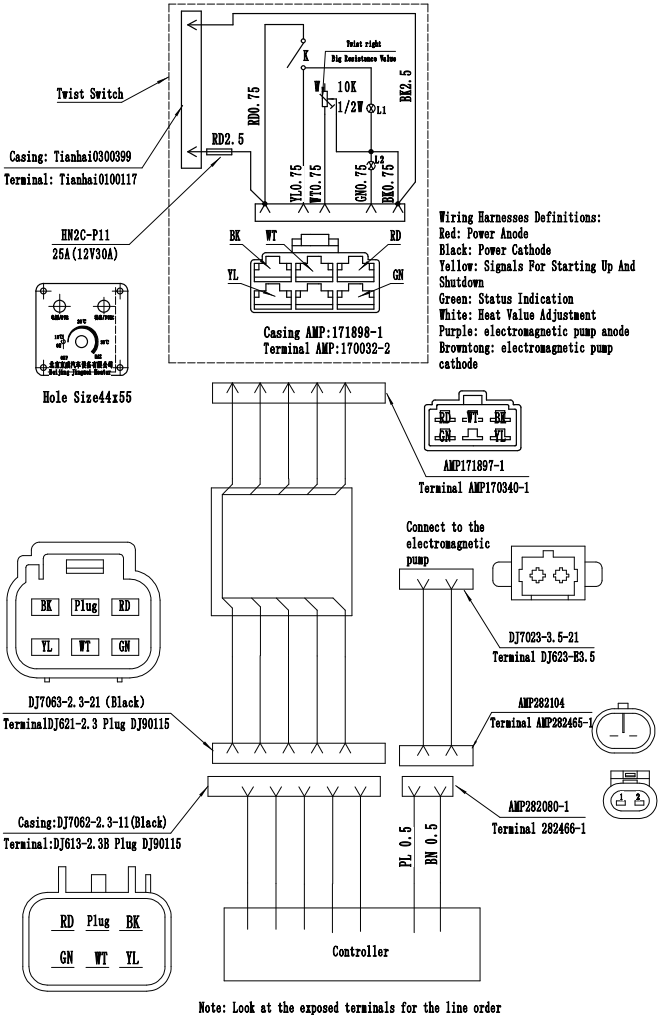


Diagram of Accessories installation Structure



Note: Look at the exposed terminals for the line order

Electric Schematic Diagram

Operating Method

Starting Up

As shown in the schematic diagram, the switch is a twist switch. Turn the knob to the maximum position, the status indicator light is on, and the heater startups. When the combustion indicator light is on the heater's working condition can be adjusted according to the comfort level.

Shutdown

Turn the knob to the position NO, the indicator light is off, the heater stops burning. At this point the heater fan will continue to run for 3 minutes to cool the heater body, and then the heater shuts down.

Notice

Before turning off the main power switch of the vehicle, please turn off the heater for more than three minutes in advance. Otherwise, the heat in the heater will not be released and the heater will be damaged.

Maintenance

• Please, firstly, check the condition of the heater and make sure that the air inlet/outlet and the air intake and exhaust are unblocked when using the heater for the first time every year. Clean it, if necessary and start it for trail run to make sure whether it is normal.

• In the season when the heater is not used, please start it and keep working for 15 minutes each month to keep it in a good condition.

Repair

• When the switch power indicator light is not on, please check:

- Please check whether the main power is on,
- Whether the heater fuse is blown,

- Whether the contact of the harness connector is good and solid;

• The switch status indicator light flashes, please check:

- Please check whether the power supply is stable,
- Whether the capacity of the regulated power supply is sufficient.
- Whether the control box is damaged.

• The indicator light is on but the heater does not work after starting up

- Start again, check whether the oil is not sufficient in the oil circuit when starting up for the first time.
- check whether there is fuel in the tank,
- check whether the oil circuit is loose,
- check whether the air inlet/outlet, air intake/exhaust port is blocked.
- Check whether the ignition plug is carbonized or blown
- Check whether the sensor and the control box is damaged.

• Smoke is released when burning:

- Check whether the residual fuel oil is excess due to the failure to start last time
- Check whether the voltage is normal.

• When the combustion is unstable:

- Check whether there are oil dripping and smoke in the exhaust port
- Check if the oil circuit is blocked or it is loose

• Disruption in combustion and shutdown:

- Start again, check whether the electric circuit and the oil circuit is normal.
- Check whether the sensor and control box are normal.

• When the heater is self-cooled and shuts down

- Check whether the air inlet and outlet are unblocked.
- Check if the inlet air temperature is too high.

Fault Code

When a fault occurs, the switch indicator light will flashes and indicate a fault. The indicator light flashes 5 times each time, the flashing time is divided into two kinds of time: long time and short time, a long time is 1s which represents 1, and a short time is 0.2s which represents 0, the interval time is 0.5s, the interval time of each group is 3s. For example, a short time flash for five times means a fault code 00000.

00000: Open circuit of the combustion sensor

00010: Voltage of the power supply is too high

00011: Voltage of the power supply is too low

00100: Short circuit of the combustion sensor(the resistance value is too small)

00101: Open circuit of the overheating sensor

00110: Short circuit of the overheating sensor

01000: The self-checking current is large after the electromagnetic pump starts up

01101: Fail to ignite

10011: The self-checking current is large after the ignition plug starts up

10101: The self-checking current is large after the main motor starts up

11011: The heater is overheated (the temperature at the air outlet is too high)

11101:The Hall sensor does not detect the magnet(the motor dose not rotate, stall or the controller is not placed well)

Service

If you have any questions, please contact our service department.

Tel:00861059711608/59711619

After-sales service department