

1. Specifications

		MXA110	MXA200	MXA250
Heat Output	KW	12.8	23.3	29.0
	kcal/H	11,000	20,000	25,000
Power Source	DC.V	24.0		
Power Consumption	W	55	110	170
Fuel Used		Diesel fuel Kerosene		
Range of Voltage	DC.V	22~30		
Fuel Consumption	m ³ /H	1.6×10 ⁻³	3.1×10 ⁻³	3.8×10 ⁻³
	L/H	1.6	3.1	3.8
Operational Temperature	°C	-40~60		
Storage Temperature	°C	-40~80		
Dimensions (L×W×H)	mm	529×316× 285	645×316× 283	645×316× 283
		20.0	23.0	23.0
Weight	Kg			
Operating Pressure	KPa	39~200		

Note: - Power consumption excludes water pump.

- Tolerance range of above data is ±10% unless otherwise specified.

- Specifications are subject to change without notice for improvement.

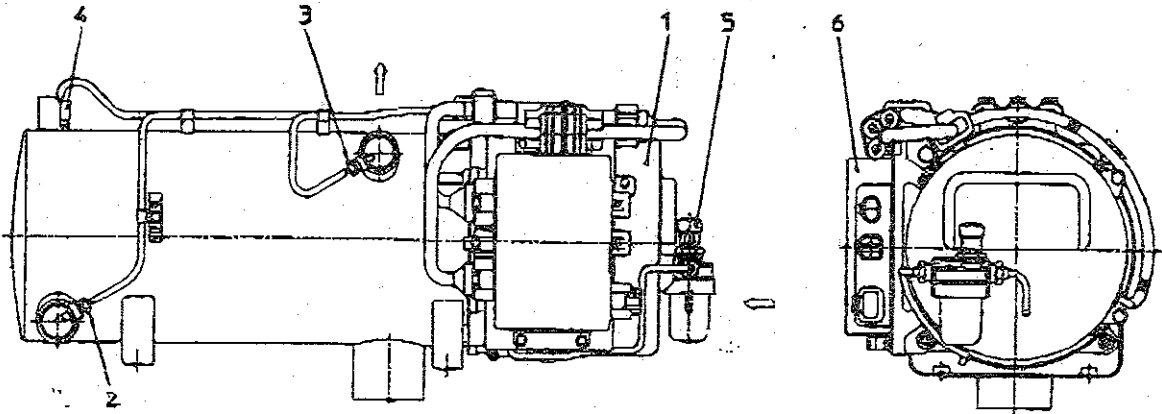
! CAUTION

Piping shall be capable of supplying the volume of water specified below. Failure to meet this requirement cannot satisfy specifications above and may shorten the life of Preheater or cause overheating.

MAX110	1,100 L/H min.
MAX200	2,000 L/H min.
MAX250	2,500 L/H min.

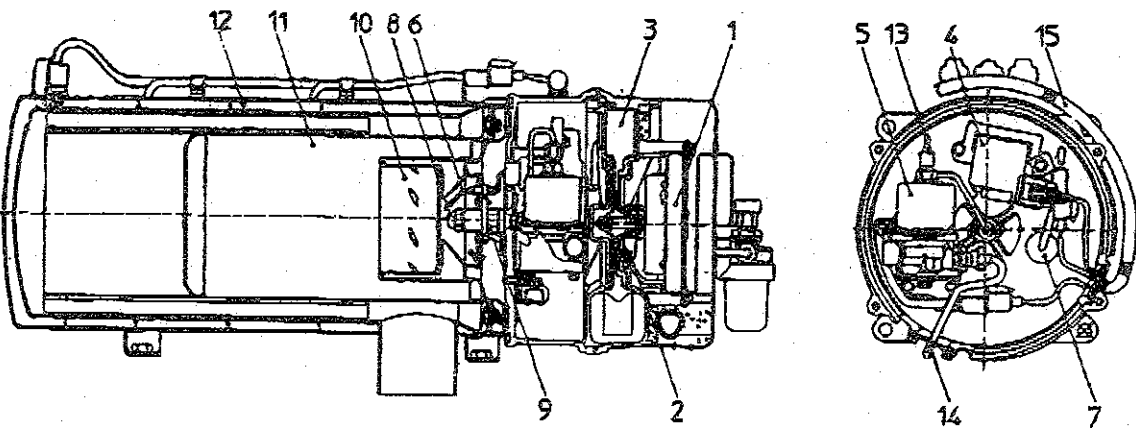
2. Names of major components

External View



- | | |
|----------------------------------|------------------------|
| 1. Burner head | 4. Overheat thermostat |
| 2. Control thermister | 5. Fuel filter |
| 3. Dry-boil detection thermister | 6. Control box |

Sectional view



- | | |
|-----------------|--------------------|
| 1. Air motor | 9. Nozzle holder |
| 2. Whole sensor | 10. Swaller |
| 3. Blowre | 11. Chamber |
| 4. Igniter | 12. Heat exchanger |
| 5. Fuel pump | 13. Pipe |
| 6. Plug | 14. Pipe |
| 7. Flame sensor | 15. Cable |
| 8. Nozzle | |

3. Operation Procedures

(1) Before Operating Preheater

Before operating Preheater, following checks should be performed:

- Check Preheater for fuel leaks.
- Check fuel tank to make sure it is filled with enough fuel for operation. Check fuel pipe from fuel tank to Preheater for any signs of fuel seepage, damage or crack.
- Check fuel filter elements for fouling or clogging with dirt, dust, etc.
- Check wiring for loosened terminals or connectors.
- Check Preheater air inlet and exhaust outlet for blocking with pieces of cloth, paper, snow, etc.
- Check battery to make sure its voltage level is sufficient for Preheater operation.
- Check stop valve on hot water piping to make sure it is fully open.
- Check clamps on hot water piping for any loosening.
- Check hot water piping for any water leaks.

! CAUTION

- (1) Engine may not start if Preheater is operated on a low battery.
- (2) Always fully open stop valve on hot water piping.
 - > Overheating could result if stop valve on hot water piping remains closed.

! CAUTION

- (1) Never use gasoline, heavy oil A or its mixtures. This may not only lead to damage of equipment but cause fires.
- (2) Never add any anti-freeze agent to fuel. This will bring about dangerous situations such as ignition failure and degradation of fuel.

In case diesel fuel is used for Preheater, make sure that its grade is correct particularly when the vehicle travels from flatland to mountain areas (over 1,500m above sea level) or from warm region to cold.

For instance, use of ordinary diesel fuel in areas with ambient temperatures below 0 °C, fuel will deposit paraffin before it completely freezes and this paraffin will clog the filter, thereby causing ignition failure or degradation of fuel.

This phenomenon can occur earlier than expected in units with small fuel consumption such as heaters, while relatively late in large fuel consumption units such as engines.

(There are cases where, even with the same fuel, engines may start but heaters will not.)

- (3) To use kerosene, always install a tank exclusively for Preheater.
- (4) Use of cold resistant diesel fuel or kerosene decreases fuel discharge due to difference in fuel characteristics and their heating value is also somewhat lower than ordinary diesel fuel.

! WARNING

Before filling tank with fuel, stop Preheater without fail.

-> Filling tank while operating Preheater can cause fires.

(3) Operation Procedures

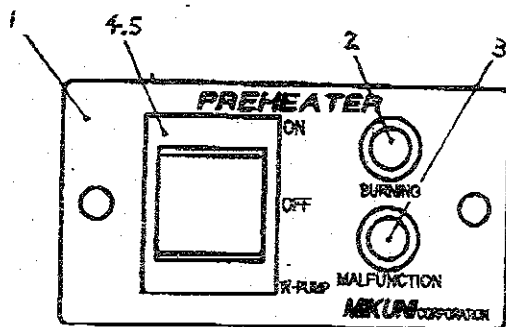
Preheater is operated with switch (on panel) located near operator's seat in the vehicle.

When Preheater is used in combination with a vehicle air-conditioner, Preheater switch is sometimes installed on air-conditioner control panel. In this case, be sure to refer to the air-conditioner instruction manual when carrying out any operations.

① Switch Panel

Switch Panel that operates Preheater is as shown below and consists of following parts:

Names of Switch Panel Parts (056635) Common to MAX 110, 200 and 250



1. Panel
2. LED (green: Burning lamp)
3. LED (red: Malfunction warning lamp)
4. Operation switch
5. LED (power and water pump lamp)

② Preheater Operation

To operate Preheater, perform following switch operation:

(see Circuit Diagram)

Operation

Turn operation switch ON. This will start automatic operation.

Water pump will also start simultaneously.

When switch is set to ON:

1. Operation switch lamp and burning lamp will come on.
2. At the same time, combustion motor and water pump motor are energized and combustion chamber is pre-purged for about 15 seconds.
3. Then, igniter is energized and plug will start discharging sparks.

4. In 1 second after discharging sparks, fuel pump is activated to start spraying fuel into combustion chamber.
5. This will start ignition and combustion.
6. Immediately upon ignition of fuel, flame sensor detects flames and deenergizes igniter. Preheater will then maintain steady combustion.

Automatic Control

1. When control thermostat reaches 78°C temperature upper limit, fuel pump is deenergized, thereby stopping fuel supply.
2. Simultaneously, post-purging for 120 seconds starts.
3. After combustion chamber is cooled by post-purging, combustion motor is shut off but both water pump and operation switch lamp stay ON. Combustion lamp changes from ON to ON-OFF mode.
4. When control thermostat reaches preset temperature lower limit, Preheater returns to operation start mode.

Stopping Operation

Turn operation switch OFF. Operation will stop after post-purging for about 120 seconds.

When turning operation switch OFF:

1. Fuel pump is deenergized, and fuel spray is stopped.
2. Simultaneously, combustion chamber is post-purged for 120 seconds.
3. After this post-purging, both operation switch and burning lamp go off.

! CAUTION

When stopping Preheater, never shut off power with key switch (battery switch).

- > If key switch (battery switch) is turned off or battery removed, when Preheater is still in burning operation, this will not only cause Preheater malfunctions but also overheat Preheater itself, thereby bringing about potentially dangerous situations such as fires and burns.

Malfunctions

The table below shows the method of displaying malfunctions as they have developed, description and detected items of such malfunctions and processing of these malfunctions after development.

- 1) Development of malfunctions is displayed by the number of blinks of malfunction lamp on switch panel. In case the number of blinks would exceed more than 10, one long blink is used to represent 10 blinks.
- 2) Stop after post-purging
This mode stops Preheater functions after cooling it with post-purging.
- 3) Immediate stop
This mode stops Preheater functions without post-purging.

Malfunction

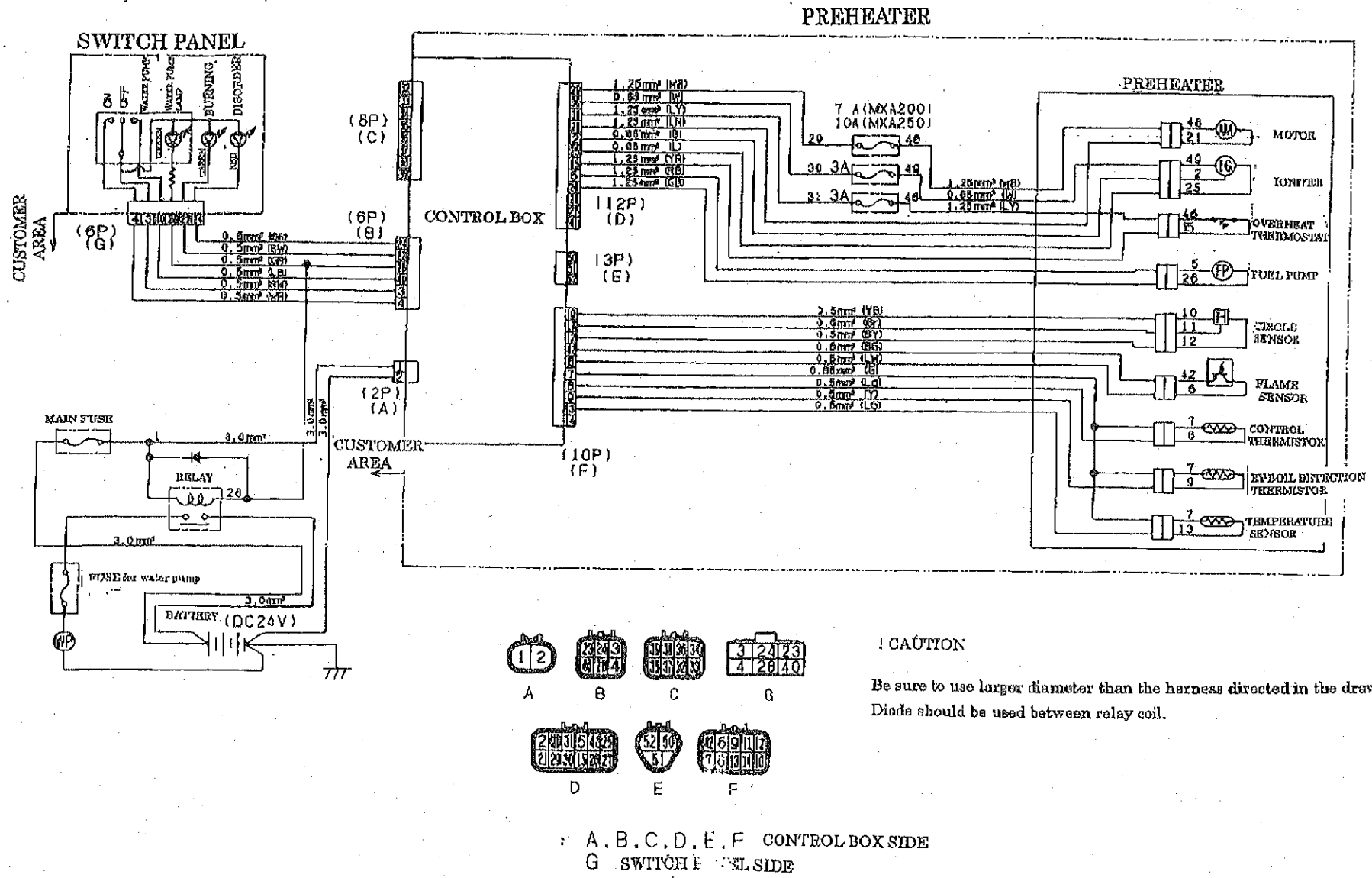
display	Item	Detection	Processing
1 blink	- No ignition	- Check on combustion state 15 sec after start of ignition operation reveals no combustion is taking place. - In case no combustion occurs 15 sec after starting re-ignition following interrupted combustion.	- Display malfunction upon detection. - Stop Preheater after post-purging. (Immediately stop during pre-purging.)
2 blinks	-Flame sensor malfunction - Pseudo-fire	-Sensor short-circuited.	- Display malfunction upon detection. - Stop Preheater after pre-purging. (Immediately stop during pre-purging)
3 blinks	- Inlet water temp. sensor malfunction - Outer water temp. sensor malfunction	- Sensor disconnected, or short-circuited. - Sensor disconnected, or short-circuited.	- Display malfunction upon detection. - Stop Preheater after post-purging. (Immediately stop during pre-purging.)
5 blinks	- Rotation malfunction	- Motor disconnected, short-circuited, locked, or rotation sensor disconnected or short-circuited.	- Display malfunction upon detection - Immediately stop Preheater upon development of malfunction.

- | | | |
|-------------------------------------|---|--|
| 6 blinks - Fuel pump
malfunction | - Pump disconnected. | - Display malfunction
upon detection.
- Stop Preheater
after post-purging.
(Immediately stop
during pre-purging.) |
| 8 blinks - Abnormal voltage | - Fixed point voltage:
Below 22V continues
for 30 seconds.
- High voltage:
Above 30V continues
for 30 seconds. | - Display malfunction
upon detection.
- Stop Preheater
after post-purging. |
| 9 blinks - Hot water overheating | - Hot water inlet temp.
above 98°C
- Outlet water temp. is
over 40°C higher than
inlet water temp. | - Display malfunction
upon detection.
- Stop Preheater
after post-purging. |
| 13 blinks - Dry boiling | - Overheat thermostat
is activated (110°C)
- Inlet water temp. is
over 20°C higher than
outlet water temp. | - Display malfunction
upon detection.
- Stop Preheater
after post-purging. |

! CAUTION

- (1) Do not attempt to re-ignite more than three times. Remove the cause before restarting operation.
-> Repeated attempts to re-ignite will allow fuel to accumulate in Preheater and its exhaust pipe, thereby causing fire.
- (2) In case of malfunctions other than ignition failure, be sure to set operation switch to OFF and set it to ON again after determining the causes and taking measures against them.

4. WIRING DIAGRAM



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5. Maintenance

Preheater is a system to safely burn fuel to produce hot water and provide heating with this hot water.

Since Preheater is installed under vehicle floor where it is exposed to corrosive condition, its operating conditions are extremely severe.

Therefore, routine and periodical inspections as well as maintenance of its various parts are indispensable to performance of the system with safety and at full capacity at all times.

Given below are the inspection standards for Preheater, its various parts requiring maintenance and a basic guide as to when to carry out maintenance and inspection. Be sure that these services are carried out.

The inspection standards given below are for use in climatically and geographically normal conditions where the maximum annual operation of Preheater is estimated at 800 hours. If Preheater is used in more severe conditions, i.e. for longer hours, more frequent and elaborate inspection and maintenance should be performed in good time depending on given operating conditions.

Recommended Inspection and Maintenance

		Responsible person	Description of work
1	Routine inspection every day	Operator	Mainly visual inspection of external appearance
2	Periodical inspection	Mechanic	Mainly visual inspection of
	Make inspection before starting Preheater.		
	Make inspection when performing		

	once/month	periodical vehicle inspection.		external appearance
3	Periodical inspection once/year	Make inspection of function parts when performing periodical vehicle inspection.	Mechanic	Mainly visual inspection of external appearance
4	Periodical maintenance	Some of parts used in Preheater deteriorate or wear in use over a long period. It is recommend that periodical renewal parts be replaced as required to ensure safety.	Mechanic	Disassembly and maintenance of Preheater Replacement of periodical renewal parts

Inspection Procedures

(1) Routine inspection

- ① Check Preheater exhaust pipe for emission of any smoke (white or black smoke).
- ② Check Preheater for any abnormal sound.
- ③ Check fuel tank for fuel level. (Should fuel be exhausted, without fail prime pump.)

If any malfunction develops, immediately turn off switch and remove its cause before restarting operation.

(2) Periodical inspection (once a month)

- ① Check fuel hoses to ensure they are securely clamped. Inspect fuel hoses and their connections for oil leaks. Use caution because oil leaks can cause fires.

- ② Check fuel filter for contamination or presence of water. If fuel filter is contaminated or has admitted water, clean or replace filter.
- ③ Check the heat exchanger for water leaks, damaged water hoses or loosened clamps.

(3) Periodical inspection (once a year)

- ① Check fuel hose fittings for slackness and oil leaks. Oil leaks can be ignited, causing fire.
- ② Check wiring for loosened connections, corroded terminals, or damaged cable shielding that may be caused by interference with vehicle floors or walls, or Preheater body due to vibration.

Prevent interference by rerouting wiring and replace wires with damaged shielding.

Sparks due to short-circuiting of wiring with damaged shielding can cause fire.

- ③ Check fuel pump proper, connections, nozzle, etc. for oil leaks. Oil leaks can cause fire.

In case of oil leaks, find and repair leaking points.

- ④ Check flame sensor for contamination. Clean if necessary.
- ⑤ Check plug to ensure its insulator is free from damage and end clearance is normal.
- ⑥ Check heat exchanger for damage and carbon deposits. Replace or clean exchanger as required.

- ⑦ Check exhaust pipe of Preheater for clogging or interference with other parts of the vehicle.

If exhaust pipe is clogged, normal combustion could not be performed. Since exhaust pipe is heated to high temperatures, its contact with flammable materials can cause fire.

- ⑧ Check combustion air intake for clogging. If it is clogged, normal combustion could not be performed.
- ⑨ Check hot water pipe for secure connection. Confirm this by tightening them.

(4) Periodical maintenance

(Sightseeing vehicles : Once 5 years)

(Highway route vehicles: Once 3 years)

For periodical maintenance, check periodical inspection items and replace parts specified as periodical renewal parts in the Inspection and Maintenance Standards.

Periodical Maintenance Points

Without fail, perform overhauling every five seasons after Preheater was delivered to you (every three seasons for application to highway route vehicles), referring to this manual's Disassembly and Reassembly. Use genuine Mikuni parts for replacement parts.

- Remove carbon deposits from both combustion chamber and heat exchanger.
- Check and repair electrodes or replace them if damaged.
- Remove carbon deposits near flame sensor and replace it if damaged.
- Replace burner nozzle with a new product.

Clogging of minute filter within burner nozzle can cause combustion failure.

When replacing burner nozzle, use care not to allow dirt, dust, etc. cling to filter.

- Replace motor if it generates abnormal sound.
- Replace fuel pump if it leaks fuel.

! WARNING

① For safe use and long serviceable life of Preheater, MIKUNI has established "Preheater Inspection and Maintenance Standards." Make sure to perform inspection and maintenance according to the Standards.

-> Failure to meet this requirement will result in premature wear or deterioration of parts which could cause fire due to oil leaks, etc.

② For periodical inspection and maintenance, do not use parts other than genuine Mikuni parts.

-> Mikuni assumes no responsibility for any accident or damage resulting from use of such other parts.

! CAUTION

Check to make sure that wiring around Preheater is not in contact with or rubbing against Preheater body or floors or walls of the vehicle.

-> Damage to shielding of wiring could cause fire due to short-circuiting.

6. Preheater Inspection and Maintenance Standards

Inspection & Work maintnenace item	Work	Maintenance standards	Inspection/maintenance frequency					Replacement standard	Remarks
			Routine	Once a month	Once a year	Once 3 years	Once 5 years		
Preheater assy	Check	Water leak	○					Check parked ground for signs of leaks	
					○			Check Preheater for water leaks	
	Check	Oil leak	○					Check parked ground for signs of oil leaks	
					○			Check Preheater for oil leaks	
Fuel system	Check	White/black smoke	○						
		Abnormal sound	○		○				
Filter	Check	Oil leak		○				Tighten or replace depending on cause of	
		Damage						oil leaks or damage	
Cables, connectors, clamps	Check	Contamination, water		○				Remove water. For contamination with dirt, dust, etc., clean or replace	
		Damage, slackness interference		○				Contamination, rust, deteriorated, damaged, frayed or discolored shielding	
Fuel pump	Check	Oil leak				○	○	Adjust pressure after 4000 hours, thereafter once a year.	
								Replace if pressure would not rise.	
Nozzle	Check	Contamination, clogging				○	○	4000 hr Replace if pressure would not rise. Replace if spray defects or oil drips	
Flame sensor	Check	Contamination				○	○	4000 hr Clean light receiver	
Plug	Clean	Fouling						4000 hr Clean insulator, adjust plug tip, replace cracked or damaged plug	
Motor	Replace					○	○	4000 hr	
Heat exchanger	Check			○				Water leaks	
	Clean					○	○	Remove inner carbon deposits	
Chamber	Check	Burn				○	○	Check every 3 years (highway, long- distance).	
								every 5 years (route, sightseeing), thereafter every year, and replace if burned	
Swirler	Check	Burn				○	○	Check every 3 years (highway, long- distance).	
								every 5 years (route, sightseeing), thereafter every year, and replace if burned	

Yardstick for Inspection and Maintenance

Our yardstick for hours of use of Preheater is as shown below although this varies with application, the length of the vehicle's use and seasonal temperature changes. For greater frequency or length of use, carry out inspection and maintenance earlier than indicated above.

800 hours/year
1200 hours/year

7. Relations with Vehicle Air-Conditioner

If a vehicle air conditioner is not effectively functioning even though Preheater is normally operating, Preheater is not responsible for this condition. Therefore, investigate other probable causes.

For reference, the effect of water temperature heating is governed by following factors:

- (1) Coolant temperature → should be high enough.

Good heating effect could not be obtained unless the temperature of cooling water is above 50°C. An ideal temperature range is between 70°C and 80°C..

- (2) Air flow → should be adequate.

Clogging of filters fitted to a vehicle air conditioner or defroster is a major cause of reduction in air supply. Because filters are liable to collect dirt, dust and other foreign matter, always clean filters before the heating season and at least once a month during the season.

- (3) Water flow → should be adequate.

Heating effect will drop if water flow is not adequate. Trapping air in piping will extremely reduce water supply, thereby making heating ineffective. Thoroughly bleed piping of air. Also pay attention to leaks from airtight joints of piping. Reduction in water supply may be caused by insufficient capacity or deterioration of water pump and high resistance of hot water piping, among others.

How to bleed air

- (1) Start water pump.
- (2) Open air release valve on defroster and bleed air in core.

- (3) Open air release valve on vehicle air-conditioner, bleed air in core.
- (4) While running engine at high speed, repeat steps (2) and (3) until air is no longer discharged.
- (5) Check for engine coolant level and add coolant as required.

Before the heating season sets in, always change engine coolant to LLC or antifreeze.

During the season, introduce LLC or antifreeze if coolant is drained or added for maintenance.

In off-season too, fill hot water piping with coolant.

! CAUTION

- When performing electric welding on vehicle, disconnect plus (+) and minus (-) cables from battery.
 - > Otherwise, system failure such as control circuit malfunction can occur.
- Make sure temperature around control box and fuel pump will not exceed 80°C.
(This condition may develop in paint baking process for vehicle.)
 - > This can lead to system failure such as control board circuit malfunction and deterioration of rubber seals.
- Thoroughly bleed air when engine coolant has been drained.
 - > Inadequate air bleeding not only will cause overheating due to lack of water but also can cause hoses to slip off under abnormal pressure buildup in piping, thereby bringing about the danger of burns.
- Perform air bleeding with extreme care.
 - > Hot water that is discharged from air release valve can cause burn injuries.
(No air release valve is fitted on heater proper.)

8. Troubleshooting

Item	Probable cause	Remedial action
Failure to ignite	1 Out of fuel	Supply fuel
	2 Clogged fuel filter	Clean or replace
	3 Frozen fuel	Change fuel or mix cold temperature/light oil
	4 Water mixed into fuel	Drain water and change fuel
	5 Air lock	Bleed fuel pipe of air
	6 Flame sensor failure (except short)	Replace
	7 Flame sensor connection failure	Inspect, repair
	8 Igniter failure	Replace
	9 Improper plug position	Adjust or replace
	10 Noize failure or slackened	Replace or tighten
	11 Fuel pump failure	Replace
	12 Clogged fuel filter	Clean or replace
Flame sensor malfunction	1 Contaminated flame sensor	Clean
	2 Flame sensor failure	Replace
	3 Control box failure	Replace
	4 Defective harness	Repair or replace
Inlet/outlet water volum sensor malfunction	1 Thermistor failure	Replace
	2 Defective harness	Repair or replace
Rotation malfunction	1 Motor failure	Replace
	2 Defective harness (incl. connection failure)	Repair or replace
	3 Blower failure (magnet fell off, interfering with blower)	Repair, adjust or replace
	4 Rotation sensor failure	Replace
	5 Control box failure	Replace
Fuel pump malfunction	1 Fuel pump failure	Replace
	2 Defective harness (incl. connection failure)	Repair or replace
	3 Overheating thermostat failure	Replace
	4 Control box failure	Replace
Voltage abnormal	1 Defective harness (incl. connection failure)	Repair or replace
	2 Battery failure	Adjust or replace
	3 Control box failure	Replace
Hot water over heating	1 Water pump failure	Repair or replace
	2 Air lock	Bleed hot water pipe
	3 Hot water pipe valve not full open	Fully open valve
	4 Frozen cooling water	After melting, mix proper amount of anti-freeze solution
	5 Increased resistance of hot water circuit (insufficient water supply)	Check, clean or replace radiator and hot water filter of interior heater
	6 Thermistor failure	Replace
	7 Heating empty or dry water pipe	

Heating empty or dry water pipe	1 Connection failure of hot water pipe	Repair after inspecting connection
	2 Empty heating thermostat failure	Replace
	3 Defective harness (incl. connection failure)	Repair or replace
Blownout fuse	1 Blower locked	Repair or replace
	2 Fuel pump failure	Replace
	3 Igniter failure	Replace
	4 Harness failure (shorted)	Repair or replace
	5 Fuse capacity shortage	Replace with adequate capacity fuse
Combustion failure (black or white smoke)	1 Insufficient combustion air (suction port blocked)	Inspect
	2 Improper fuel	Change to right fuel
	3 Carbon, scale deposits on heat exchanger	Clean
	4 Improper fuel consumption	Adjust fuel pump pressurer or replace
	5 Faulty fuel discharge	Replace burner nozzle
	6 Improper control box (wrong model)	Replace
	7 Control box failure	Replace
Oil leaks	1 Fuel pump failure	Replace
	2 Slackened fuel pipe	Tighten

2005年5月24日

会議・出張報告書

報告者:

環境機器ユニット 角田 正弘

訪問先: 新キャタピラ三菱機 明石事業所

日時: 05年 5月 12日

場所: 兵庫県西明石市

13時00分 ~ 16時00分

件名: ロシア向けパワーショベル用エンジンプレウォーマー 引合いの件

出席者: 応用設計部澤田次長 応用機設計課 日比主任 西菱エンジニアリング アタッチメント設計G 堀主事
アプリケーション技術部 坂東様 購買部 中島様 ミクニ 報告者

引合い内容

新キャタピラ三菱機より、ロシア向けパワーショベルにミクニ製エンジン予熱器を搭載したいとの引合い要求を受け250WHKを紹介していたが本格的に搭載検討するとの話を受け訪問した。

詳細

新キャタピラ三菱機のロシア向けパワーショベルは、ヨーロッパの工場にて生産、エンジン予熱器は同じヨーロッパのメーカーのものを搭載しロシアに出荷していた。

(予熱器メーカーはどことは言わなかったが多分ベベスタか) ← Z2人

しかし、ロシアのユーザーより、予熱器の容量が足りなく大容量の予熱器の搭載要求を受けていた。

ロシアで調査の結果、コマツのパワーショベルにミクニ製エンジン予熱器が搭載されており、評判がよいとの情報があり、コマツ製パワーショベルにて実績のある予熱器(250WHK)の引合いを受けた。

搭載台数については、新キャタ三菱機としては現状予測はないが、初年度は年間10台前後と見込んでいるとの事。プレヒーター搭載機種のロシアでの評判がよければ増加するものと予測

(コマツ製パワーショベルは、ロシア向けに250WHK-12を搭載、年間約100台

シェアはほぼ同じ(約20%)との事で、今後の動向では、数量の大幅増加が見込まれる)

紹介機種

搭載機種の年間販売数量は新キャタ三菱機としても予測がつかず初年度は10台程度との事からミクニとしては新型式は起こさず、現行の250WHKのラインナップより搭載可能な機種を選定していただく事で申し入れし、250WHK-13にて検討して頂く事とした。

但し、今後の数量によって、専用型式もある旨説明。

搭載車輛は新キャタ型式330(30tクラス) 345(45tクラス)のパワーショベル

(コマツのPC400と同クラスでPC400には250WHK-12が搭載)

搭載にあたって

250WHKの設置要領書(以前に送付済)に基づいた設置をして頂くべく、依頼しているが、現行のパワーショベルに搭載したいとの事で、設置場所が無く、かなり苦慮している模様。基本的に設置要領は説明し納得頂き、検討して頂く事とした。

又、250WHKの仕様として温水径路耐圧0.2MPa 耐震性 7G を説明 搭載にあたってそれぞれをクリアーするよう重ねて依頼した。

(新キャタピラ三菱殿より、建設機械の基本耐震性は10Gとの話が出たが、ミクニスペックは7Gの為、プレウオーマー設置にあたり、防振ゴム等の追加により7Gを超えないよう依頼)

又、設置に関する詳細は別途協議打ち合わせする事とした。

今後の日程について

搭載場所検討、図面出図	5月末
車輛搭載(テスト車輛)	7月末 (1台)
量産移行	8月末～

新キャタピラ三菱殿よりの依頼事項

今回、ミクニエンジンプレウオーマーを搭載検討するにあたり、プレウオーマーが実際に燃焼している状態を見たいとの事。

簡単に燃焼させる事は無理、ミクニ盛岡事業所にて、250WHKの生産があるときの出荷検査であれば見れると説明、調整後、後日回答することにした。

新キャタピラ三菱殿 購買殿との打合せ

ヒーターとして新キャタピラ三菱殿購買殿とは初めてになるので挨拶をした。

今後の日程を受け、購買殿より、250WHK-13を正式注文するにあたり、見積依頼と先行手配の依頼を受ける。見積は後日提出、ヒーターは先行手配をすることとした。

今後、新キャタピラ三菱殿明石事業所との取引をするにあたり、購買、品質保証を含め、新規に契約する必要があるとの話を受けた。又、工場監査も必要との事。



ミクニとしてヒーター関係は、新キャタピラ三菱殿相模事業所との取引があると説明したが、明石事業所と相模事業所では、システムが全く違う為、明石事業所にて個別に取り交わす必要があるとの事。

(明石事業所は三菱重工より新キャタピラ三菱殿に変わった為、会社自体のシステムが全く違い明石事業所として個別に対応しなければならないとの事)

取引をするにあたり、個別に打合せをしたいとの事から、後日改めて訪問する事にした。(6月初予定)

新キャタピラ三菱殿明石事業所からの引合いを受け、新規の取引となり、工場監査等もありますので、盛岡事業所 関係各位の御協力を御願い申し上げます。

生田 JTB, 和村 FJB, 盛岡生産管理部, 品管 3Ar, 技七 7-Gr, 環境機器エント

				
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