

# Kubota Engine Thailand (KET)

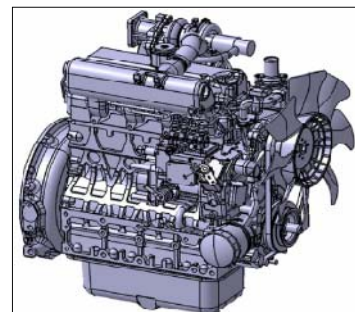
## 1. Outline

|                                    |                                                                       |
|------------------------------------|-----------------------------------------------------------------------|
| <b>Address</b>                     | No.360 Moo 3, T.Khao Hinson,<br>A.Phanomsarakarm, Chachoengsao, 24120 |
| <b>Number of employees</b>         | 485 (Dec, 2021)                                                       |
| <b>Site area</b>                   | 75,856 m <sup>2</sup>                                                 |
| <b>Establishment day</b>           | 24-Feb-11                                                             |
| <b>ISO14001 certification date</b> | 3-Jul-2015                                                            |
| <b>Site overview</b>               | Manufacturing of vertical type diesel engines                         |



## 2. Products

### Main products



Vertical type Diesel Engines

## 3. Environmental, Safety and Occupational Health Policy

KUBOTA Engine (Thailand) Co. Ltd (KET), a leading manufacturer of diesel engines for agricultural and industrial machinery recognizes the importance of environmental protection as well as the occupational health and safety of employees, local communities and society overall. The company, therefore, is committed to operate with the environment, safety and employees health in mind. Policies to support this operation as detailed in the following.

1. KET is committed to prevent accidents and occupational diseases by improving working environments which present an unacceptable risk of harm and strictly complies with the company's safety regulations.
2. KET is responsible to society by considering environmental impacts, which are caused by human activities, products including energy saving, as well as the reuse of resources, in its operations. In addition it will continue to protect the environment and prevent pollution.
3. KET has encouraged and supported employees to create a workplace in accordance with the 5S principles to improve operation, safety, and equipment maintenance as well as using an appropriate protective equipment to reduce accidents and prevent occupational diseases.
4. KET continues training activities to educate and create awareness on environmental, safety and occupational health to employees.
5. KET will continue to comply with legal and regulatory requirements related to the environment, safety and occupational health.
6. KET communicates to all employees about its environmental, safety and occupational health policy, including information on the implementation.
7. KET communicates to interested parties about its environment, safety and occupational health policy and accepts comments and complains.
8. KET continues to review objectives, targets, and results of overall operation on environmental, safety and occupational health for better improvement.

## 4. Environmental performance data (Jan. 2021 to Dec. 2021)

|                              |                         |       |
|------------------------------|-------------------------|-------|
| <b>Used amount of energy</b> | Crude oil equivalent KL | 2,597 |
| <b>Used amount of water</b>  | thousand m <sup>3</sup> | 26    |

|                                 |                        |       |
|---------------------------------|------------------------|-------|
| <b>CO<sub>2</sub> emission*</b> | tons CO <sub>2</sub> e | 4,866 |
|---------------------------------|------------------------|-------|

\*CO<sub>2</sub> emissions from energy sources.

| Air Pollutant measurement results         |                   |                       |               |                  |
|-------------------------------------------|-------------------|-----------------------|---------------|------------------|
| Main smoke and soot generation facilities |                   | Heating furnaces      |               |                  |
|                                           | Unit              | Control content       | Control value | Maximum measured |
| SOx                                       | ppm               | Concentration control | 950           | 2                |
| NOx                                       | ppm               | Concentration control | 200           | 68               |
| Particulate                               | mg/m <sup>3</sup> | Concentration control | 240           | 13               |

|                                               |                         |                             |   |
|-----------------------------------------------|-------------------------|-----------------------------|---|
| <b>Amount of discharge water</b>              | thousand m <sup>3</sup> | No external water discharge |   |
| <b>Amount of pollutant in discharge water</b> | COD                     | kg                          | - |
|                                               | Nitrogen                | kg                          | - |
|                                               | Phosphorus              | kg                          | - |

| Water pollutant measurement results |                                    |        |               |                  |
|-------------------------------------|------------------------------------|--------|---------------|------------------|
|                                     |                                    | unit   | Control value | Maximum measured |
| Treated water* (Recycled)           | pH                                 | -      | 5.5 ~ 9.0     | 6.9, 7.5         |
|                                     | BOD                                | mg/L   | < 20          | 2.0              |
|                                     | COD                                | mg/L   | <120          | 37.00            |
|                                     | Nitrogen                           | mg/L   | < 100         | 2.11             |
|                                     | Phosphorus                         | mg/L   | -             | 26.50            |
|                                     | Hexavalent chromium                | mg/L   | < 0.25        | 0.1              |
|                                     | Lead                               | mg/L   | < 5           | <0.05            |
|                                     | COD, total emission control        | kg/day | -             | 1.34             |
|                                     | Nitrogen, total emission control   | kg/day | -             | 0.08             |
|                                     | Phosphorus, total emission control | kg/day | -             | 1.03             |
| SS                                  | mg/L                               | < 50   | 1             |                  |

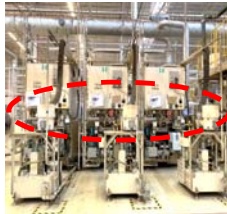
|                        |      |       |
|------------------------|------|-------|
| <b>Waste discharge</b> | tons | 643   |
| <b>Recycling ratio</b> | %    | 99.7% |
| <b>VOC emission</b>    | tons | 3     |

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## 5.Environmental Topics

### 1. Electrical reduction (Energy Just In Time Concept).

#### 1.1 Control On/off oil mist collector CH1-OP30 on the lunch break and midnight



#### 1.2 Reduce working time of conveyor at CH1 line



#### 1.3 Control On/off air condition for blowing to reduce the heat of Cylinder head after the washing process at CH1-OP80



#### 1.4 Control On/off for oil mist collector at CH2-OP10,20,40,50 on break time



| PMC MAINTENANCE   |         |        |     | RUN |
|-------------------|---------|--------|-----|-----|
| PMC PARAM (TIMER) |         | (PAGE  | 1/  |     |
| NO.               | ADDRESS | PRESET | ACC |     |
| 1                 | T0000   | 0      | 48  |     |
| 2                 | T0002   | 0      | 48  |     |
| 3                 | T0004   | 900000 | 48  |     |
| 4                 | T0006   | 60000  | 48  |     |
| 5                 | T0008   | 100000 | 48  |     |
| 6                 | T0010   | 900000 | 48  |     |
| 7                 | T0012   | 0      | 48  |     |
| 8                 | T0014   | 240000 | 48  |     |

TH0003 (POWER SAVE OFF DELAY)

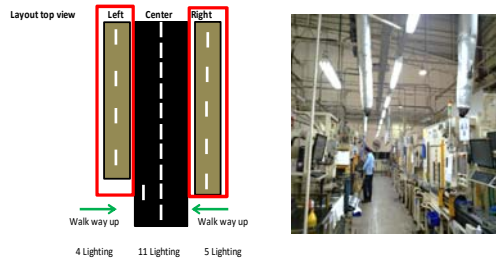
| MAINTENANCE   |         |        |     | RUN |
|---------------|---------|--------|-----|-----|
| PARAM (TIMER) |         | (PAGE  | 1/  |     |
| NO.           | ADDRESS | PRESET | ACC |     |
| 1             | T0000   | 600000 | 48  |     |
| 2             | T0002   | 0      | 48  |     |
| 3             | T0004   | 0      | 48  |     |
| 4             | T0006   | 0      | 48  |     |
| 5             | T0008   | 0      | 48  |     |
| 6             | T0010   | 0      | 48  |     |
| 7             | T0012   | 0      | 48  |     |
| 8             | T0014   | 0      | 48  |     |

#### 1.5 Stop hydraulic motor during break time at CH2-OP8

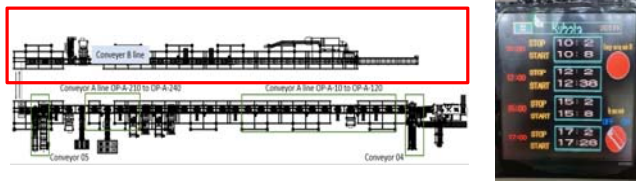


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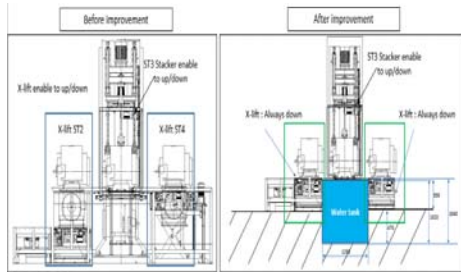
1.6 Turn off the light on the walkway of the CH2 line



1.7 Stop Conveyor during the break time of Conveyor B line at the main line



1.8 Cancel X-lift motor in the leak test process at Main line



1.9 Turn off speakers at the OP-A-40 during lunch and midnight breaks



1.10 Stop motor pump of Machine press gear fuel camshaft at OP-A-90 during lunch and midnight breaks



1.11 Stop conveyor return pallet OP-A-290 by stopping the Conveyor when the Conveyor does not have a full Pallet or Pallet



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1.12 Stop machine press gear fuel camshaft motor pump at the Sub line during lunch and midnight breaks



1.13 Stop motor pump of the machine water leak at the Main line OP-C-130 during lunch and midnight breaks.



1.14 Overhaul air compressor no. 1-4 then aroun air compressor applications according to the efficiency of the air compressor and load of machine used



1.15 Installing film filters in the seminar room



1.16 Installing film filters in the office zone



## 2. Water reduction

2.1 Change tap water to RO reject water for general cleaning work : Painting line, RO plant, glove washer



2.2 Install sensor faucet at the sink at the cafeteria and toilet in the whole factory



# Kubota Engine Thailand (KET)

## 6. Environmental Communication

### 1. CSR Y 2022

On 28 June 2022 at Sawang Sattha Thammassathan School  
Donation of the canteen and improve the city water pipe system



### 2. Eco-challenge activity. [Campaign the environment month]

On June - July 2022 at KET.

**ประกวดภาพถ่ายสิ่งแวดล้อม Eco-Challenge**  
Kubota Engine Thailand (KET) ขอเชิญพนักงานทุกท่าน  
ร่วมประกวดภาพถ่ายสิ่งแวดล้อม  
ระหว่างวันที่ 6 มิ.ย. - 15 ก.ค. 2022  
หัวข้อประกวด  
ภาพถ่ายที่แสดงถึงความรับผิดชอบต่อสังคมขององค์กร  
สิ่งแวดล้อม รางวัล: 1,000 บาท

**หัวข้อประกวด**  
1. วัสดุรีไซเคิล (Waste Recycle/Reuse)  
2. อนุรักษ์พลังงาน (Energy Conservation)  
3. อนุรักษ์น้ำ (Water Conservation)  
4. อนุรักษ์ดิน (Soil Conservation)  
5. อนุรักษ์สัตว์ (Animal Conservation)  
6. อนุรักษ์ป่าไม้ (Forest Conservation)

**วิธีการส่งประกวด**  
1. ส่งรูป 3-5 รูป พร้อมคำบรรยาย 100 คำ  
2. ส่งรูป 1 รูป พร้อมคำบรรยาย 100 คำ  
3. ส่งรูป 1 รูป พร้อมคำบรรยาย 100 คำ  
4. ส่งรูป 1 รูป พร้อมคำบรรยาย 100 คำ

**ตัวอย่าง**  
หัวข้อ: อนุรักษ์พลังงาน  
หัวข้อ: อนุรักษ์น้ำ  
หัวข้อ: อนุรักษ์ดิน



### 3. Safety & Environment & Energy week

On 1 - 3 Aug 2022 at KET.

