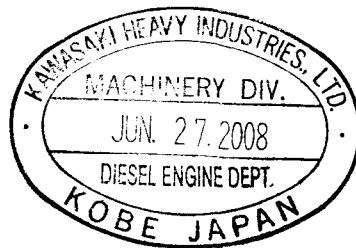


# KAWASAKI – MAN B&W

## L46-80MC-C DIESEL ENGINE


### VOLUME I – OPERATION



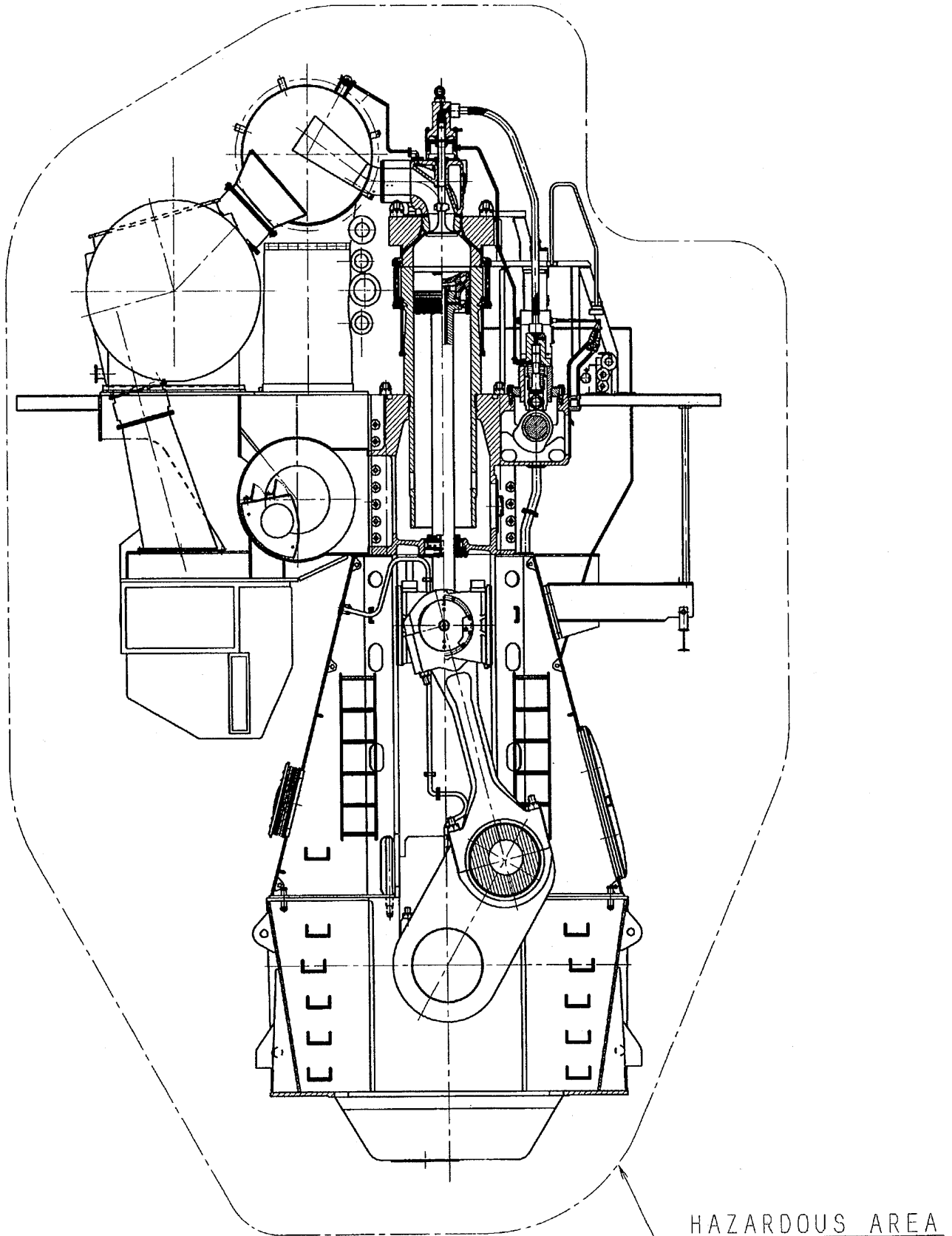
**KAWASAKI HEAVY INDUSTRIES, LTD.**  
**KOBE WORKS, JAPAN**

# SAFETY NOTICE

1. Recognize the engine shown in the sketch as a hazardous area.
2. Read and understand this manual before operation, routine inspection, maintenance and adjustment.
3. Keep this manual with much care.
4. Wear head protector, safety shoes, long-sleeved clothing, gloves and other protective equipment (eye protector, rubber gloves etc.) as required by job condition on the engine.
5. Do not wear loose clothing that can catch on equipment and parts of the engine.
6. Before turning the crankshaft, make sure nobody works in the crank chamber, chain case, scavenging receiver and combustion space.  
Also give a warning to others who work on the parts moving together with the crankshaft.
7. Always use proper lifting equipment for heavy parts.  
Make sure that loads are properly secured.

Kawasaki cannot anticipate every circumstance, which might involve a potential hazard. Warning, Caution or Attention plates on the engine and  marked or underlined descriptions in this manual are therefore not all inclusive.

If operation, inspection, maintenance or adjustment is not performed as recommended by this manual, you must satisfy yourself that it is safe for yourself and others, and also ensure that the engine will not be damaged or made unsafe.



## INSTRUCTION FOR MAIN ENGINE

This book forms part of a set of books consisting of three volumes entitled:

- Vol. I OPERATION
- Vol. II MAINTENANCE
- Vol. III COMPONENTS AND DESCRIPTIONS

The purpose of these books is to provide general guidance on operation and maintenance and to describe the constructional features of a standard version of the above engine type. Deviations may be found in a specific plant. In addition, the books can be used for reference purposes, for instance in correspondence and when ordering spare parts.

It is essential that the following data is stated in spare parts orders as it is used by us to ensure the supply of the correct parts for the individual engines:

1. Name of vessel
2. Engine No. XXXX Built by KHI
3. Plate No.
4. Item No.
5. Quantity required (and description)

Please use the order sheet of the next page.

Reliable and economical operation of the diesel engines is conditional upon its correct operation and maintenance in accordance with KAWASAKI instructions. Emissions related maintenance of the diesel engine shall be performed as specified in KAWASAKI instructions and any additional instructions to that effect included in the Technical File.

Consequently, it is essential that the engine room personnel are fully acquainted with the contents of this book and, in respect of instructions on emissions related maintenance of the diesel engine, also the additional instructions to that effect set out in the Technical File.

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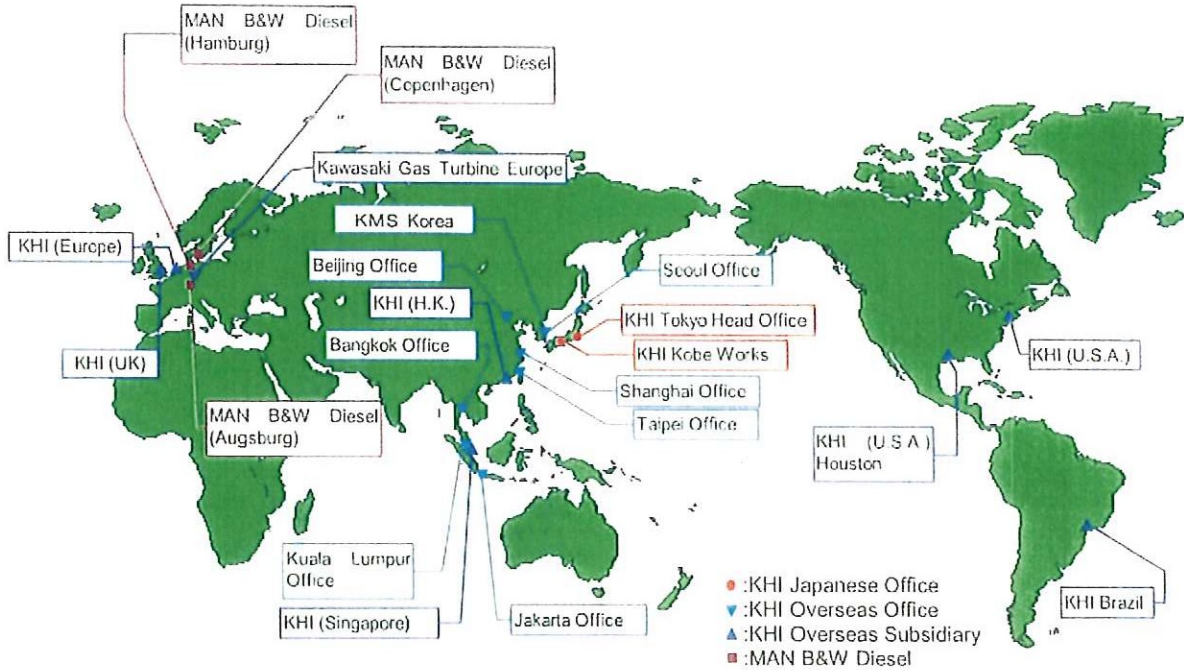
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## After-Sales Service Organization for KAWASAKI-MAN B&W Diesel Engine

October 2007

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1079, LH Amsterdam, The Netherlands  
KHI (H. K.) LTD. : Room 4211-16, Sun Hung Kai Centre  
30 Harbour Road, Wanchain, Hong Kong

## Contents

This instruction book is divided into **nine Chapters** and an **Index** – as listed below:

Chapter	Title
701	Safety Precautions and Engine Data
702	Checks during Standstill Periods
703	Starting, Manoeuvring and Running
704	Special Running Conditions
705	Fuel and Fuel Treatment
706	Performance Evaluation & General Operation
707	Cylinder Condition
708	Bearings and Circulating Oil
709	Water Cooling Systems
710	Others

Each **Chapter** is subdivided into separate sections and sub-sections. For convenience, the main titles and topics are summarized on the first page(s) of each chapter.

The **Index** gives a comprehensive list of the subjects covered.

### IMPORTANT:

All sketches and diagrams contained here-in are for guidance only and illustrate the essential principles of the circuits and their correlation.

The correct details must be found in the drawings and diagrams specifically prepared for the plant.



## Service Letters

In order to ensure the most efficient, economic, and up-to-date operation of the KHI - MAN B&W engines, we regularly send out 'Service News', containing first-hand information regarding accumulated service experience.

The Service News can either deal with specific engine types, or contain general instructions and recommendations for all engine types, and are used as a reference when we prepare up-dated instruction book editions.

Therefore, since *new Service News* could be of great importance to the operation of the plant, we recommend that the engine staff file them to supplement the relevant chapters *of this instruction book*.

## 701 SAFETY PRECAUTIONS AND ENGINE DATA

Sikkerhedsforanstaltninger og motordata  
Sicherheitsmassnahmen und Motordaten  
Mesures de sécurité et données du moteur  
Precauciones de seguridad y datos del motor

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## 702 CHECKS DURING STANDSTILL PERIODS

Eftersyn under stilstand  
Kontrolle bei abgestelltem Motor  
Contrôles en périodes de repos  
Controles durante los periodos de parada

---

## 703 STARTING, MANOEUVRING AND RUNNING

Start, manøvrering og kørsel  
Anlass, Manövrieren und Betrieb  
Démarrage, manoeuvres et marche  
Arranque, maniobra y funcionamiento

---

## 704 SPECIAL RUNNING CONDITIONS

Specielle driftsforhold  
Besondere Betriebsbedingungen  
Conditions de marche spéciales  
Condiciones especiales de funcionamiento

---

## 705 FUEL AND FUEL TREATMENT

Brændolie og brændoliebehandling  
Kraftstoff und Kraftstoffbehandlung  
Combustible et conditionnement du combustible  
Combustible y tratamiento del mismo

---

## 706 PERFORMANCE EVALUATION AND GENERAL OPERATION

Vurdering af driftstilstand samt betjening  
Auswertung des Betriebszustandes und Bedienung  
Performance et conduite  
Evaluacion de las mediciones y datos generales de funcionamiento

---

## 707 CYLINDER CONDITION

Cylindertilstand  
Zylinderzustand  
Etat des cylindres  
Estado de los cilindros

---

## 708 BEARINGS, AND CIRCULATING OIL

Lejer og systemolie  
Lager und Ölzirkulation  
Paliers et huile de circulation  
Cojinetes y sistema de aceite lubricante

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## 709 WATER COOLING SYSTEMS

Kølevandssystemer  
Kühlwassersysteme  
Systèmes de refroidissement  
Sistema de agua de refrigeracion

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## 710 OTHERS