

# Man Diesel Operating Instructions 91 58 64 For Marine

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# Introduction

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Engines – characteristics,  
justified expectations,  
prerequisites

Engines produced by MAN B&W Diesel AG have evolved from decades of continuous, successful research and development work. They satisfy high standards and have ample redundancy of withstanding adverse or detrimental influences. However, to meet such expectations, they have to be used to purpose and serviced properly. Only if these prerequisites are fulfilled, unrestricted efficiency and long service life can be expected.

Purpose of the operating and  
working instructions

The operating instructions as well as the working instructions (work cards) are thought to assist you in becoming familiar with the engine. They are also thought to provide answers to questions that may turn up later on, and to serve as a guidance in your activities of engine operation and when carrying out maintenance work. Furthermore, we attach equal importance to familiarising you with the methods of operation, causes and consequences, and to conveying the empirical knowledge we have. Not least, in providing the operating and working instructions, we comply with our legal duty of warning the user of the hazards which can be caused by the engine or its components - in spite of a high level of development and much constructive efforts - or which an inappropriate or wrong use of our products involve.

Condition 1

The technical management and also the persons carrying out maintenance and overhaul work have to be familiar with the operating instructions and working instructions (work cards). These have to be available for consultation at all times.

**▲▲ *Caution! Lack of information and disregard of information may cause severe injury to persons, damage to property and the environment!***  
***Therefore: Please observe the operating and working instructions!***

Condition 2

Maintenance and overhaul of modern four-stroke engines requires a previous and thorough training of the personnel. The level of knowledge that is acquired during such training is a prerequisite to using the operating instructions and working instructions (work cards). No warranty claims can be derived from the fact that a corresponding note is missing in these.

**▲▲ *Caution! Untrained persons can cause severe injury to persons, damage to property and the environment! Never give orders which may exceed the level of knowledge and experience! Access must be denied to unauthorised personnel!***

Condition 3

The technical documentation is tailored to the specific plant. There may be considerable differences to other plants. Informations valid in one case may, therefore, lead to problems in others.

**▲ *Attention! Technical documents are valid for one specific plant! Using information provided for another plant or from outside sources may, therefore, result in disturbances/damages! Only use pertinent information, never use information from outside sources!***

To be observed as well ...

Please also observe the notes on product liability given in the following section and the safety regulations in Section 3.

The reliable and economically efficient operation of the engine system requires that the operator has a comprehensive knowledge. Similarly, proper performance can only then be maintained or restored by maintenance or repair work if such work is done by qualified specialists with the adequate expertise and skill. Rules of good workmanship have to be observed, negligence is to be avoided.

This Technical Documentation complements these faculties by specific information, and draws the attention to existing dangers and to the safety regulations in force. MAN B&W Diesel AG asks you to observe the following:

**▲▲ *Caution! Neglecting the Technical Documentation, and especially of the Operating/Working Instructions and Safety Regulations, the use of the system for a purpose other than intended by the supplier, or any other misuse or negligent application may involve considerable damage to property, pecuniary damage and/or personal injury, for which the supplier rejects any liability whatsoever.***

The scope of parts delivered by MAN B&W Diesel AG is to be set up and fastened in accordance with well proven engineering principles. In this connection, the relevant stipulations contained in the below-mentioned documents have to be taken into consideration, observing the order in which they are listed.

- Engineering documentation supplied by MAN B&W Diesel AG for the respective order
- Documentation our subsuppliers delivered for the installation of the accessories
- Operating instructions for engines, turbochargers and accessories
- Project guides of MAN B&W Diesel AG.

Deviations from the principles specified in the above-mentioned documents require our previous consent. It is not permitted to attach fixations and/or supports not shown or mentioned in the aforementioned documents on the scope of parts delivered by us, without prior coordination with us. We cannot assume any responsibility for damage resulting from non-observance of the above.



# How the Operating Instruction Manual is organized, and how to use it

1.3

## Instructions for use

The operating manual contains written and illustrated information. Some of it is generally useful, some of it really must be observed. This information is thought to supplement the knowledge and faculties which the persons have who are entrusted with

- the operation,
- the control and supervision,
- the maintenance and repair

of the engines. The conventional knowledge and practical experience alone will not be adequate.

The operating instructions have to be made available to these persons. The people in charge have the task to familiarise themselves with the composition of the operating manual so that they are able to find the necessary information without lengthy searching.

We attempt to render assistance by a clearly organised composition and by a clear diction of the texts.

## Structure and special features

The operating instruction manual consists of five sections:

- 1 Introduction
- 2 Technical details
- 3 Operation/Operating media
- 4 Maintenance/Repair
- 5 Annex

It mainly focuses on:

- Understanding the functions/coherences
- Starting and stopping the engine
- Planning engine operation, controlling it according to operating results and economic criteria
- Maintaining the operability of the engine, carrying out preventive or scheduled maintenance work

The manual does not deal with:

- Transport, erection, and dismantling of the engine or major components of it
- Steps and checks when putting the engine into operation for the first time
- Repair work requiring special tools, facilities and experience
- Behaviour in case of/after fire, inrush of water, severe damage and average

## What is also of importance

### Engine design

The operating manual will be continually updated, and matched to the design of the engine as ordered. There may nevertheless be deviations between the sheets of a primarily describing/illustrating content and the definite design.

Usually a thematic differentiation is made between marine propulsion engines, marine auxiliary engines and engines for stationary plants. Where the factual differences are but slight, the subject is dealt with in a general manner. Such passages are to be read selectively, with the appropriate reservations.

### Technical details

For technical details of your engine, please refer to:

- Section 2, "Technical Details"
- Volume A1, to the publication "..... Continuous Development"
- Volume B2, Work Card 000.30
- Volume B5, test run record and commissioning record
- Volume D1, list of measuring, control and regulating instruments
- Volume E1, installation drawing

With the exception of the above-mentioned publication, all documents have been specifically matched to the respective engine.

### Maintenance schedule/ work cards

The maintenance schedule is closely related to the work cards of Volume B2. The work cards describe how a job is to be done, and which tools and facilities are required for doing it. The maintenance schedule, on the other hand, gives the periodical intervals and the average requirements in personnel and time.

# Addresses/Telephone numbers

# 1.4

## Addresses

Table 1 contains the addresses of Works of the MBD and of the Technical Branch Office in Hamburg. The addresses of MAN B&W service centers, agencies and authorised repair workshops can be looked up in the brochure "Diesel and Turbocharger Service Worldwide" in Volume A1.

<b>Company</b>	<b>Address</b>
Work Augsburg	MAN B&W Diesel AG D-86224 Augsburg Phone +49 (0)821 322 0 Fax +49 (0)821 322 3382
Work Hamburg	MAN B&W Diesel AG Service Center, Werk Hamburg Rossweg 6 D-20457 Hamburg Phone +49 (0)40 7409 0 Fax +49 (0)40 7409 104
Technical Branch Office Hamburg	MAN B&W Diesel AG Vertriebsbüro Hamburg Admiralitätstraße 56 D-20459 Hamburg Phone +49 (0)40 378515 0 Fax +49 (0)40 378515 10
MAN B&W Service Center, agencies and authorised repair workshops	Please look up in the brochure "Diesel and Turbocharger Service Worldwide"

Table 1. Companies and addresses of the MAN B&W Diesel AG

## Contact

Table 2 contains the names, telephone and fax numbers of the competent persons who can give advise and render assistance to you if required.

	<b>Your contact</b>		
	Work Augsburg Phone: +49 (0)821 322 ..... Fax: +49 (0)821 322 .....	Work Hamburg Service Center Phone: +49 (0)40 7409 ..... Fax: +49 (0)40 7409 .....	MAN B&W Service Center, agencies, authorised repair workshops
Service Engines	Waschezek MST Phone ..... 3930 Fax ..... 3838	Taucke MST4 Phone ..... 149 Fax ..... 249	Look up in the brochure "Diesel and Turbocharger Service Worldwide" in Volume A1
Service Turcharger	Nickel TS Phone ..... 3994 Fax ..... 3998		
Service Spare parts	Stadler MSC Phone ..... 3580 Fax ..... 3720		

Table 2. Persons to be contacted, telephone and fax numbers

## Technical details

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# MAN B&W Diesel AG's Scope of Supply/Technical Specification

2.1.1

Items supplied	The next page is a list of the items we have supplied. We are giving you this list to ensure that you contact the right partner for obtaining information/assistance.
For all items supplied by us ...	For all questions you have on items supplied by us, please contact <ul style="list-style-type: none"><li>● MAN B&amp;W Diesel AG in Augsburg,</li></ul> and for typical service questions, <ul style="list-style-type: none"><li>● MAN B&amp;W service centers,</li><li>● agencies and</li><li>● authorised repair workshops all over the world.</li></ul>
For all items not supplied by us ...	For all items not supplied by us, please directly contact the sub-suppliers, except the components/systems supplied by MAN B&W Diesel AG are concerned to a major extent or similar, obvious reasons apply.
Technical Specification	The order confirmation, technical specification related to order confirmation and technical specification of the engine contain supplementary information.

<b>2.1</b>	<b>Scope of supply/Technical specification</b>
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# Characteristics

## 2.2.1

L 58/64 CD engine - an important member of the medium-speed engine family

Characteristics in key words

Engines with the designation L 58/64 CD are supercharged four-stroke engines in in-line design with a cylinder bore of 580 mm and a piston stroke of 640 mm. They are used for power generation in ships and in stationary power plants.

When viewing onto the coupling, the exhaust gas pipe is located on the right (exhaust side, AS) and the charge air pipe on the left (exhaust counter side, AGS).

The camshaft lies in a trough on the exhaust counter side. It serves for actuating the inlet and exhaust valves and for driving the injection pumps. The injection timing can be changed by means of an adjusting device.

Turbocharger and charge-air cooler are located on the coupling end on most propeller propulsion engines, and on the free engine end on engines driving generators. Cooling water and lube oil pumps can be driven via a drive unit on the free engine end.

The engine is suitable for fuels up to 700 mm<sup>2</sup>/s at 50° C up to, and including CIMAC H/K 55. On demand, the engine can be adapted for operation on MDO.

Engines of this series have a large stroke/bore ratio and a high compression ratio. These characteristics facilitate an optimisation of the combustion chamber design and contribute to a good part-load behaviour and a high efficiency.

The engines are equipped with MAN B&W turbochargers of the TCA series.

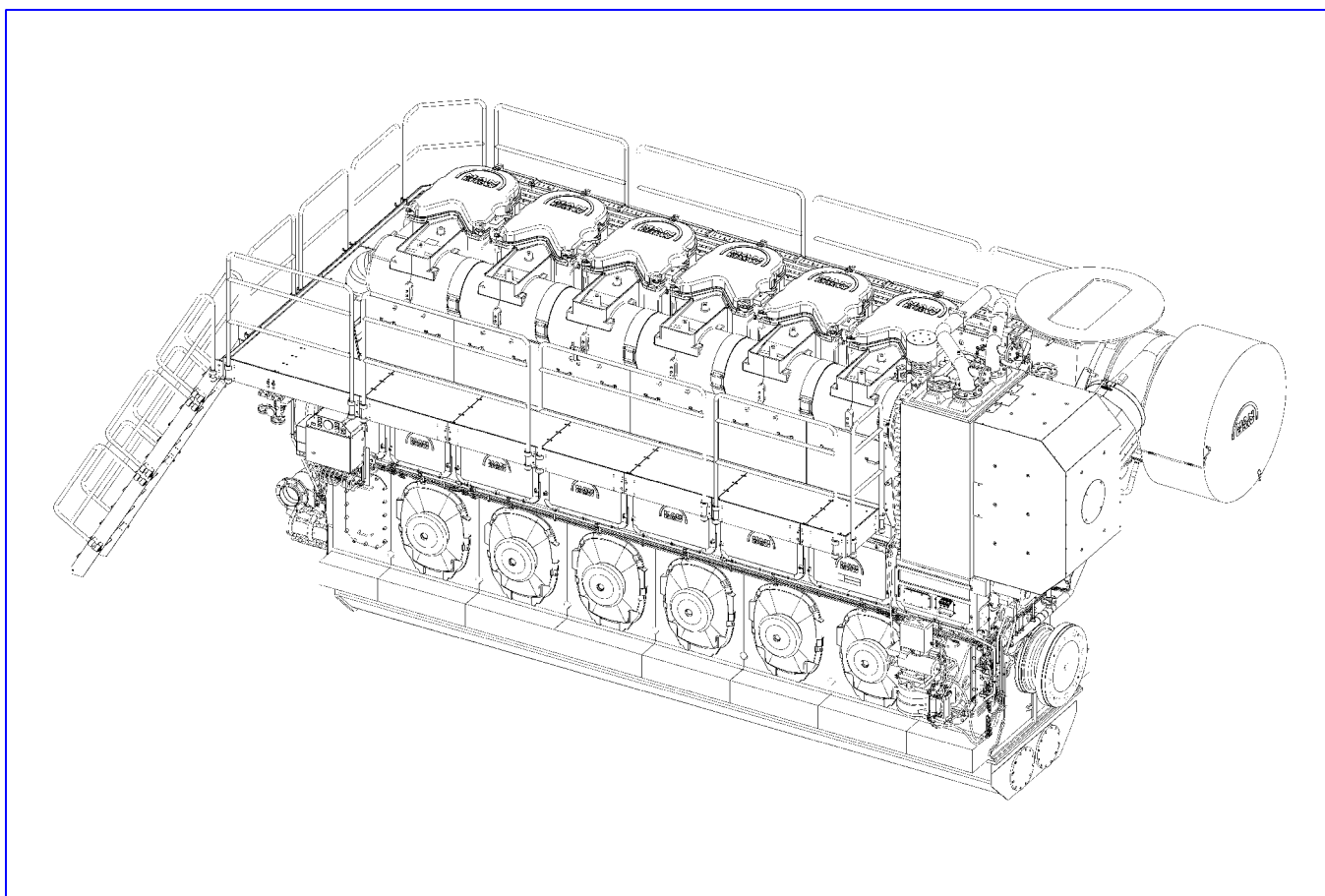


Figure 1. 6-cylinder engine L 58/64 CD, viewed from the exhaust counter side

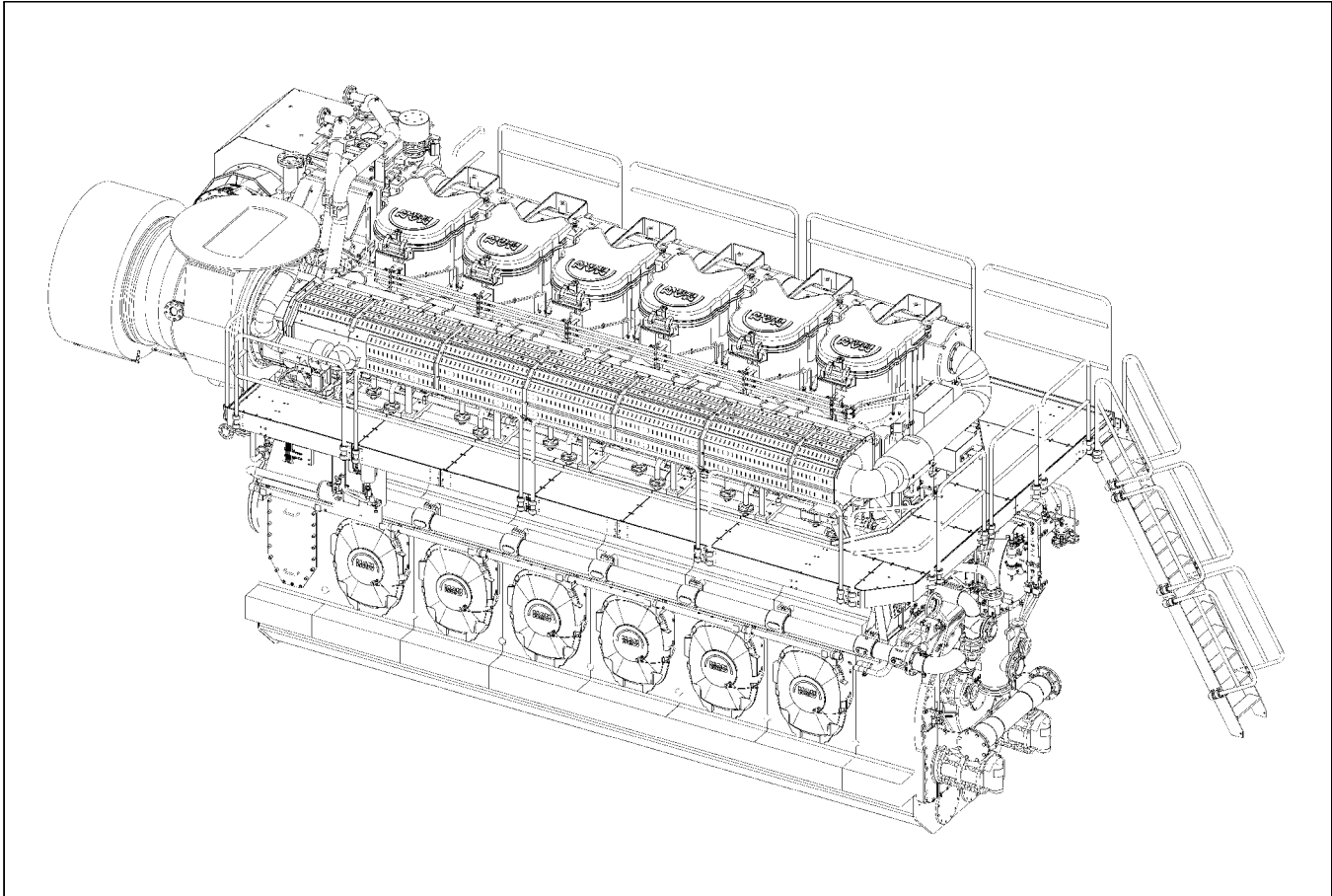


Figure 2. Engine 6L 58/64 CD, viewed from the exhaust side

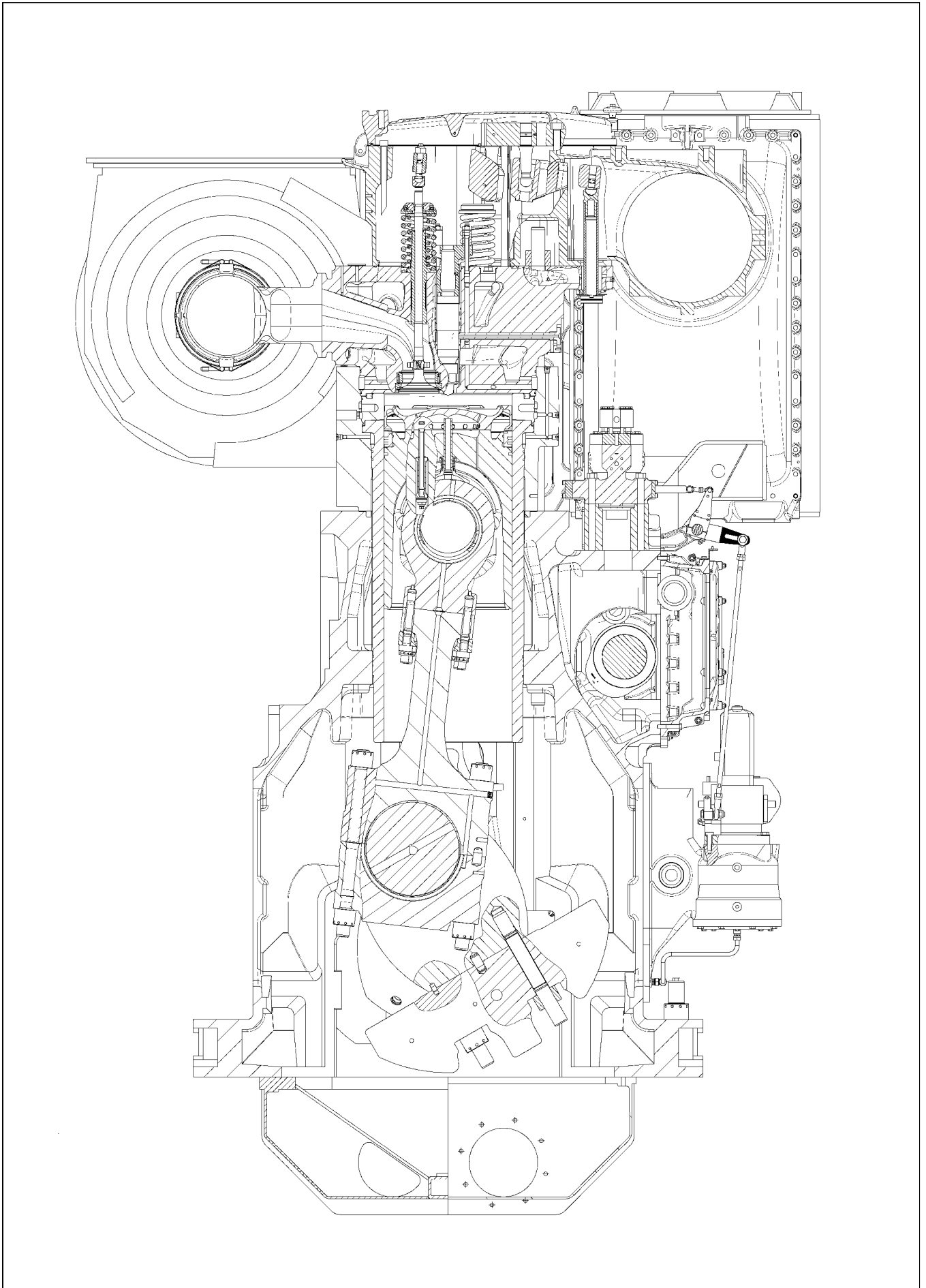


Figure 3. Engine cross section, viewed from the coupling side