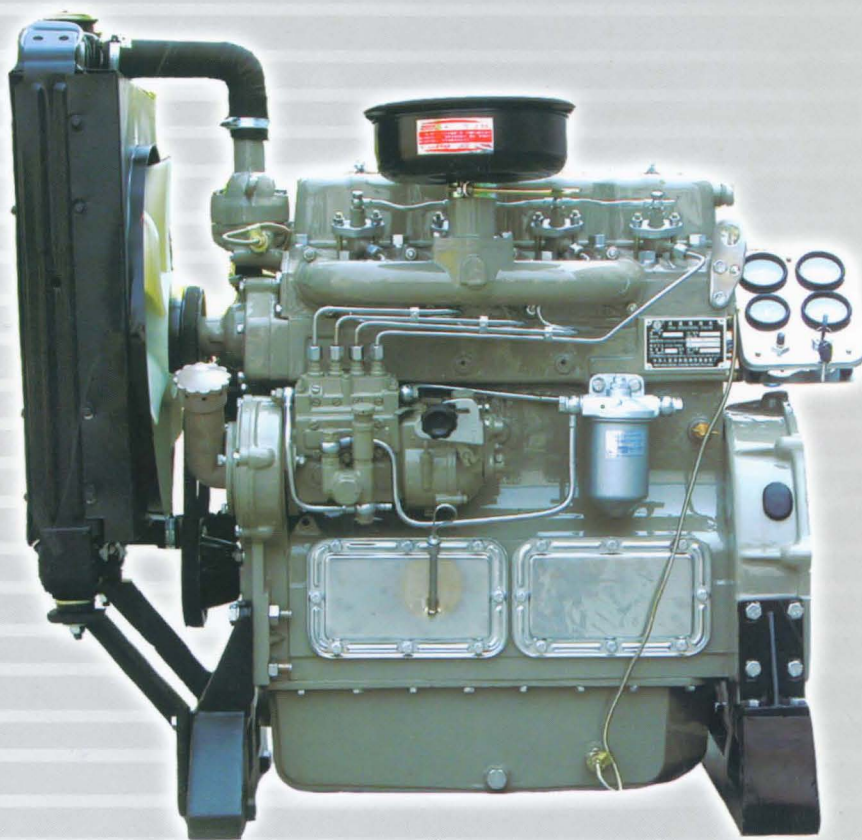




HUAFENGDONGLI

495 Series Diesel Engine

OPERATION AND MAINTENANCE MANUAL



Shandong Weichai Huafeng Power Co., Ltd

Preface

HUAFENGDONGLI brand **495** series diesel engine is a four – stroke, vertical, water – cooled, swirl combustion chamber, four – cylinder diesel engine. In **1980**, our company adopted the comet V combustion system and diesel design technique of Ricardo Consulting Engineers Company and have make great improvement in design. Thus, the power, economy and liability reached a advanced level among the same kind products all over the world.

HUAFENGDONGLI brand **495** series diesel engine was prized by the National Science Congress and it's easy to adapt. According to the different application, some parts are changed accordingly. It can be matched with middle – sized tractors, engineering machinery, middle – sized vehicles, generating sets, irrigating machines and agricultural products process machines etc. The output range of various version of **495** series diesel engine is **26.5 – 51.5KW**, and its rated speed is **1500 – 2800r/min**. Model **K4100** is developed from Model **495** through cylinder expansion. As a result, the output range has been enlarged. **ZH4100** is developed from **K4100**. It adopts the direct injecting combustion chamber, and improved its economy further. The model, its make – up rule and the meaning of the symbol for every type is as follows:

ZH 4 100 □ □ □—□

K 4 100 □ □ □—□

4 95 □ □ □—□

⑦ ⑥ ⑤ ④ ③ ② ①

①: distinguish symbol, Expressed with number sequence

②: Version symbol, expressed with number sequence

③: application featrue symbol, expressed with alphabet

no alphabet: for common use; T: for tractor; G: for engineering machinery; Q: for vehicle; D: for generating set;

C: for marine use; P: for power take-off unit; Y: for transporting vehicle use.

④: construction feature symbol, expressed with alphabet; no alphabet: for natural aspirated model;

Z: for turbocharged model.

⑤: cylingder bore (mm)

⑥: cylinder number

⑦: cylinder expanded (ZH: Direct injecting combustion chamber)

In order to keep the diesel engine in good condition in most time, prolong the guarantee period maximally, reduce the cost of usage, we compiled this manual on the basis of the " National Rated **495** Diesel Engine Manual" and the change and improvement of the products to introduce the operation and maintenance knowledge to

the customers.

This operation manual mainly introduces common usage type. For the products is changing and improving continually, there may be some slight difference between the produces and that described in this manual and the users are advised to notice it kindly.

The manual is compiled by Zhao Ruian, Wang Jinghai, Sun Chuanhai, Yu Caihong, Yang Lin, Li Zhiyong, advised by Li Peiyan, Chen Ling, and finally examined and approved by Li Huaiqing.

For the limit of the compilers, there may be mistakes in the manual, if you find any, please kindly point out so that they can be corrected. Also, it will be appreciated if you give us your suggestions about our products.

The compiler
May, 2006

Attention

1. The diesel engine operators must familiarize themselves with this manual as well as engine construction and strictly follow the procedures of operation and maintenance especially the regulations for safety operation described in this manual.
2. Before operating an engine at full load, the **60** hours running in should be carried out as specified in the manual.
3. Increase its speed gradually after starting a cold engine, never let it run at high speed abruptly, and don't stop the engine instantly while its cooling water is still hot, also don't let the engine running long time without load.
4. If the ambient temperature falls below $+5^{\circ}\text{C}$, drain the cooling water out of the radiator, the lubricating oil cooler and the diesel engine itself completely after stopping the engine. Continuous keeping the water in the oil cooler should be forbidden.
5. Never run the diesel engine without an air cleaner so as to prevent the unfiltered air from entering the cylinders.
6. The engine must be filled with specified grade fuel and lubricating oil, and a special and clean container for each oil should be used. The fuel oil should be settled for **72** hours and filtered before using.
7. The inspection and repair of the components in electrical system must be carried out by the person who has a good knowledge of electricity.
8. The working environment of the diesel engine should be well ventilated to avoid being polluted by waste gas or smoke.
9. The power rating and amending of the diesel engine is according to **GB6072.1 - 2000** the first section of reciprocating internal combustion engine: standard basic condition, the rating and testing method of power, fuel consumption and engine oil consumption.
10. The manufacturing of the diesel engine is according to the common technical requirement for low and middle level powered diesel engine in **JB/T8895 - 1999** and **Q/WCG004**.

–**2004 495** series diesel engine enterprise standard.

- 11.** The No. of production license of this series diesel engine is: **XK06 – 205 – 00160**, **XK06 – 205 – 00161**, **XK06 – 205 – 00279**.
- 12.** The position of safety warning marks:
 - (1)** There's a guard against burning mark at the end of the cylinder cover which is beside the exhaust manifold of the diesel engine.
 - (2)** There's a guard against fire mark at the oil filler.
 - (3)** There's a guard against twinning mark on the inlet manifold.
 - (4)** There's a flywheel rotating direction mark on the flywheel housing.

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