

International Operating And Maintenance Manual Ice Model 416

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OPERATING AND MAINTENANCE MANUAL

ICE MODEL 416

VIBRATORY PILE DRIVER/EXTRACTOR

WITH MODEL 325 POWER PACK

Serial Numbers: 182940 & Above



INTERNATIONAL
CONSTRUCTION

SPECIALIZING IN PILE DRIVING EQUIPMENT

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OM-416/325-0796

PREFACE

This manual was prepared to acquaint the owner, operator and serviceman with the operation and maintenance of the vibratory driver/extractor. We suggest that this manual be carefully studied before operating or undertaking any maintenance work on the unit.

This manual is organized into two major categories.

The first category is for routine OPERATING INSTRUCTIONS of the unit and includes a GENERAL DESCRIPTION section, which presents a basic explanation of the driver/extractor and some of its specifications. The MAINTENANCE AND ADJUSTMENT section should be referred to periodically for normal servicing of equipment. All machines and equipment require systematic, periodic inspection and maintenance, if they are to perform satisfactorily, over a long period of time. The driver/extractor is primarily a vibrating machine and if not given the best of care, or if improperly used and maintained, it is self-destructive. Therefore, the unit should receive at least the same care and maintenance as other high quality construction equipment.

The second category is for parts reordering and it includes both a PARTS LIST and a pictorial drawing of the assembly, for easier determination of the required part. Refer to the ORDERING PARTS section of the PARTS LIST for more specific procedures regarding parts ordering. Adherence of the listed procedures will insure receipt of the required part(s) with the minimal amount of delay or error.

WARRANTY

INTERNATIONAL CONSTRUCTION EQUIPMENT STANDARD WARRANTY

International Construction Equipment (ICE) warrants new products sold by it to be free from defects in material or workmanship for a period of 90 days after date of delivery to the first user and subject to the following conditions:

ICE's obligation and liability under this WARRANTY is expressly limited to repairing or replacing, at ICE's option, any parts which appear to ICE, upon inspection, to have been defective in material or workmanship. Such parts shall be provided at no cost to the user, at the business establishment of ICE or the authorized ICE distributor of the product, during regular working hours. This WARRANTY shall not apply to component parts or accessories of products not manufactured by ICE and which may carry the warranty of the manufacturer thereof, or to normal maintenance (such as engine tune-up) or to normal maintenance parts (such as oil filters). Replacement or repair parts installed in the product covered by this WARRANTY are warranted only for the remainder of the warranty, as if such parts were original components of said product. ICE COMPANY MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, AND MAKES NO WARRANTY OF MERCHANTABILITY OR FITNESS, FOR ANY PARTICULAR PURPOSE.

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NO EMPLOYEE OR REPRESENTATIVE IS AUTHORIZED TO CHANGE THIS WARRANTY IN ANY WAY OR GRANT ANY OTHER WARRANTY UNLESS SUCH CHANGE IS MADE IN WRITING AND SIGNED BY AN OFFICER OF ICE.

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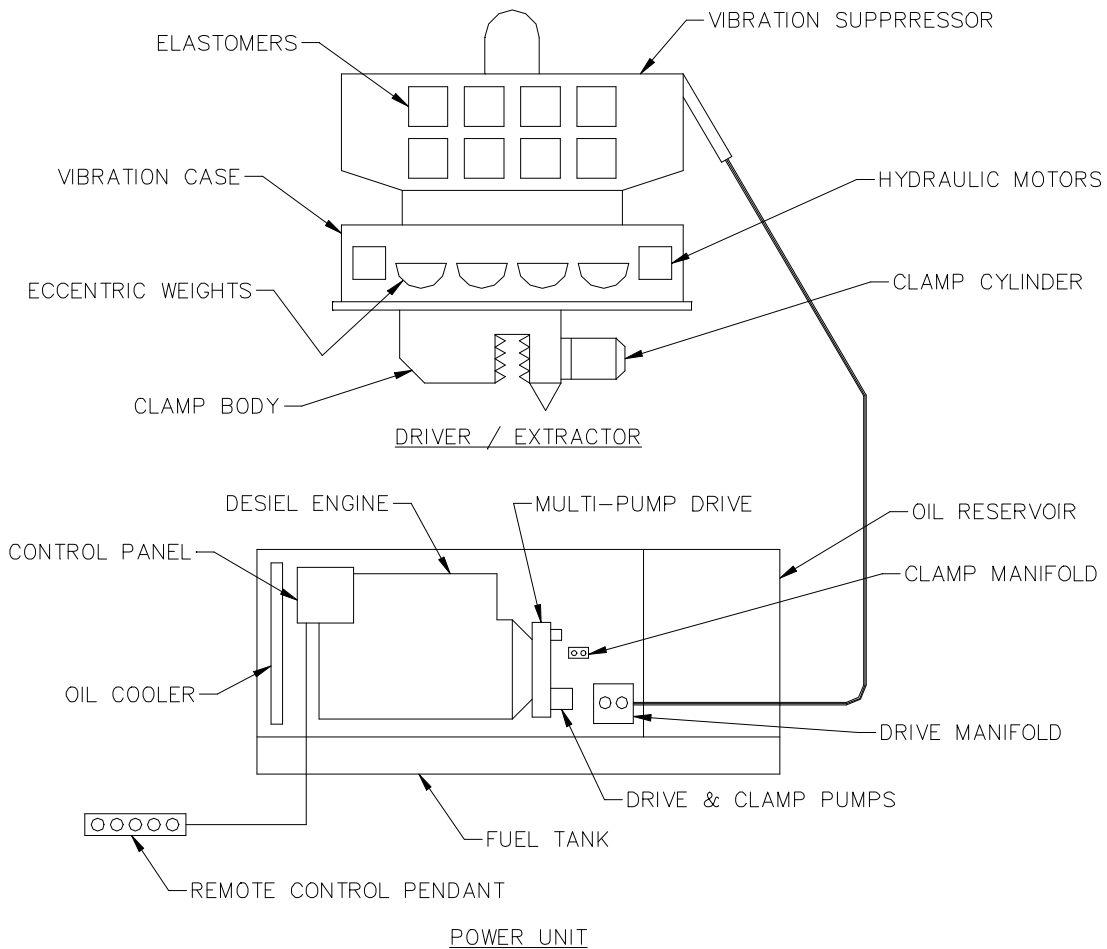
I. GENERAL DESCRIPTION

A. GENERAL

The ICE Model 416L is a low-frequency vibratory pile driver/extractor designed to drive and extract sheet, pipe, timber and concrete piles, caisson pipe and H, I and wide-flange beams.

The Model 416L operates in a frequency range of 700 to 1540 vibrations per minute to provide maximum pile penetration rates in a wide variety of soils. The unit has an eccentric moment of 2200 inch-pounds (25.3 kg-M) and produces a maximum amplitude of .1.00 inch (25.4mm).

The vibratory driver unit consists of two major components. (1) The vibrator with attached clamp and (2) the power unit with remote control pendant.



I. GENERAL DESCRIPTION

B. VIBRATOR

The vibrator consists of two major components. (1) The vibration case and (2) the vibration suppressor.

The vibration case contains four eccentric weights which rotate in a vertical plane to create vibration. The eccentric weights are driven by two hydraulic motors mounted on the vibration case. The two motors and four eccentrics are all gear connected to maintain proper synchronization. The eccentric and motor shafts are mounted in heavy-duty cylindrical roller bearings. Lubrication is provided by a splash system activated by the rotating eccentrics and gears.

A suppressor assembly is mounted to the top of the vibration case, to isolate vibration from the crane and permit pile extraction. A, heavy, outer suppressor housing is connected to the vibration case by sixteen (16) rubber elastomers. Up to forty (40) tons of crane line pull may be applied to this suppressor during extraction.

C. HYDRAULIC CLAMP

A hydraulic clamp, bolted to the bottom of the vibration case, transmits vibration to the piling. The hydraulic clamp contains two gripping jaws; one fixed and one moveable. A large hydraulic cylinder operates the moveable jaw with 125 tons of force to grip the pile. Clamping and un-clamping occurs in a few seconds.

D. POWER UNIT

The Model 325 power unit for the Model 416L vibrator is powered by a Caterpillar 3306TA diesel engine. The diesel engine develops 325 HP at 2100 RPM, which drives 3 hydraulic pumps that create the hydraulic pressures to operate the 416L vibrator motors and hydraulic clamp.

The totally enclosed power unit is mounted on a skid-type fuel tank sub-base. A Control panel at the side of the unit contain all operating gages and controls. A common reservoir supplies hydraulic fluid to three separate hydraulic pumps - two for the vibrator motors and one for the hydraulic clamp.

Three hydraulic hoses, 100 feet in length, connect the power unit to the hydraulic motors on the vibrator. Two other hydraulic hoses run from the power unit to the hydraulic clamp.