



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

OPERATING AND MAINTENANCE MANUAL

ICE MODEL 44-50

VIBRATORY PILE DRIVER/EXTRACTOR

WITH MODEL 570D POWER PACK

Serial Numbers: 186501 & Above



**INTERNATIONAL
CONSTRUCTION
EQUIPMENT, INC**

SPECIALIZING IN PILE DRIVING EQUIPMENT

CORPORATE OFFICES: 301 WAREHOUSE DR., MATHEWS, NC 28105, USA
PHONES: 800 438-9281 & 704 821-8200 FAX 704 821-6448

OM-44-50/570-0296



**MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR**

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 sections.

The first contains routine OPERATING INSTRUCTIONS for the unit and includes a GENERAL DESCRIPTION section, which presents a basic explanation of the driver/extractor and 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 the same care and maintenance as other high quality construction equipment.

The second section contains information for ordering spare parts and 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 to the listed procedures will insure receipt of the required part(s) with the minimal amount of delay or error.



**MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR**

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.

ICE's obligation under this WARRANTY shall not include any transportation charges, cost of installation, duty, taxes or any other charges whatsoever, or any liability for direct, indirect, incidental, or consequential damage of delay. If requested by ICE, products or parts for which a warranty claim is made are to be returned, transportation prepaid to ICE. Any improper use, including operation after discovery of defective or worn parts, operation beyond rated capacity, substitution of parts not approved by ICE or any alteration or repair by others in such manner as in ICE's judgment affects the product materially and adversely shall void this WARRANTY.

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.



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

TABLE OF CONTENTS

OPERATING INSTRUCTIONS

<u>I.</u>	<u>GENERAL DESCRIPTION</u>	<u>PAGE</u>
A.	General	I- 1
B.	Vibrator	I- 2
C.	Hydraulic Clamp	I- 2
D.	Power Unit	I- 2
E.	Remote-Control Pendant	I- 2
F.	Specifications	I- 3
<u>II.</u>	<u>PREPARATION FOR OPERATION</u>	
A.	General	II- 1
B.	Safety Precautions	II- 1
C.	Rigging of Vibrator	II- 2
D.	Connection of Hydraulic Clamp	II- 2
E.	Connection of Hydraulic Hoses	II- 3
F.	Bleeding Hydraulic Clamp Hoses	II- 5
G.	Filling Vibrator Pressure Hose	II- 5
<u>III.</u>	<u>OPERATING INSTRUCTIONS</u>	
A.	Completion of Set-Up and Maintenance	III- 2
B.	Control Panel	III- 2
C.	Starting and Warming Up Engine	III- 4
D.	Warming Hydraulic Oil	III- 4
E.	Operation of Remote-Control Pendant	III- 5
F.	Changing Frequency	III- 7
G.	Shutdown	III- 7
<u>IV.</u>	<u>MAINTENANCE AND ADJUSTMENTS</u>	
A.	General	IV- 1
B.	Daily Maintenance	IV- 1
C.	125 Hours (Service Meter Units)	IV- 2
D.	250, 500 Hours and Other	IV- 2
E.	Annual Maintenance	IV- 2
F.	Maintenance Under Severe Conditions	IV- 3
G.	Lubrication	IV- 4
H.	Draining and Filling Hydraulic Oil Reservoir	IV- 8
I.	Changing Hydraulic Return Filter Elements	IV- 8
J.	Bolt Torque Information	IV-10



**MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR**

OPERATING INSTRUCTIONS

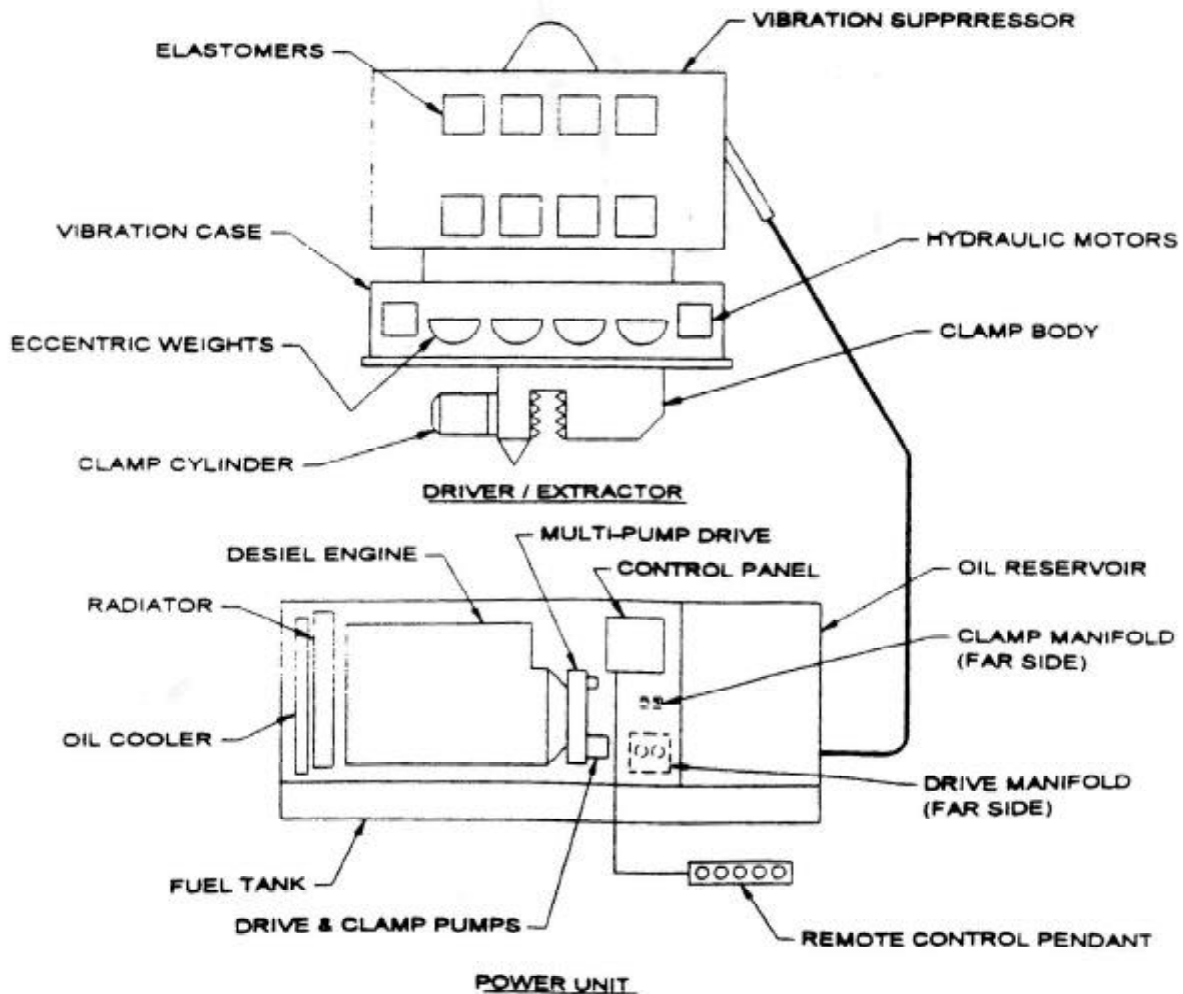
I. GENERAL DESCRIPTION

A. GENERAL

The ICE Model 44 is a variable-frequency vibratory pile driver/extractor designed to drive and extract sheet, pipe, timber and concrete piles, caissons, H-beams, I-beams and wide-flange beams.

The Model 44 operates in a frequency range of 800 to 1600 vibrations per minute to provide maximum pile penetration rates in a wide variety of soils. The unit has an eccentric moment of 4400 inch-pounds (50.7kg-M) and produces a maximum amplitude of 1.2 inch (30mm).

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





**MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR**

OPERATING INSTRUCTIONS

I. GENERAL DESCRIPTION

B. VIBRATOR

The vibrator consists of two major components; The vibration case and 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. The vibration suppressor contains 16 rubber elastomers (20 or 24 optional) to isolate the vibration case from the crane line. The suppressor is designed for a maximum line pull of 80 tons (712kN) during extraction.

C. HYDRAULIC CLAMP

The hydraulic clamp attaches the vibrator to the pile. Five types of hydraulic clamps are available for the Model 44 vibrator. The Model 126 universal clamp will drive and extract most types of sheet piling, 14" (355mm) H-beams, and wide flange beams. The Model 127 Z-pile clamp is designed to drive and extract single Z-sheets and can also be used on Z-pile doubles. The Model 80 caisson clamps are used in pairs with either the 7-foot (2.13m) or 11-foot (3.35m) caisson beam to drive and extract pipe from 15" (381mm)ID to 136" (3454mm)OD. The Model 25 & 50 wood pile clamp is designed to drive and extract wood piles from 8" (203mm) OD to 18" (457mm)OD. The model 165 concrete pile clamp will extract square concrete piles from 18" (457mm) to 24" (610mm).

D. POWER UNIT

The Model 44 vibrator is powered by the ICE Model 570 power pack. The 570 power pack is powered by a Caterpillar 3408TA diesel engine. The engine develops 505 horsepower (377kW) at 2100 RPM, and is mounted on a tubular sub-base which serves as a fuel tank. The Power Unit and Vibrator are operated from the control panel or remote control pendant. Hydraulic oil is stored in a the reservoir. Oil cooling is accomplished by a air to oil heat exchanger mounted in front of the engine radiator. All of the above components are contained in a sheet metal enclosure with lockable doors and a central lifting bale.

E. HOSES

Three hydraulic hoses, 150 feet (45.7m) 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.

F. REMOTE-CONTROL PENDANT

The vibrator is operated by the hand-held remote control pendant. The pendant has 1 palm button, 2 switches and 2 push buttons, 1 with a light. The red palm button (EMERGENCY STOP) shuts down diesel engine instantly in the event of an emergency. The (OPEN CLOSE) switch opens and closes the hydraulic clamp. The light in the (START) button indicates that adequate clamping pressure exists. The (START) button starts vibration. The (STOP) button stops vibration. The (THROTTLE) switch raises and lowers the diesel engine speed. Note: Controls are duplicated on the control panel for use if the pendant becomes damaged. (See pg.III-6, Section E-g)



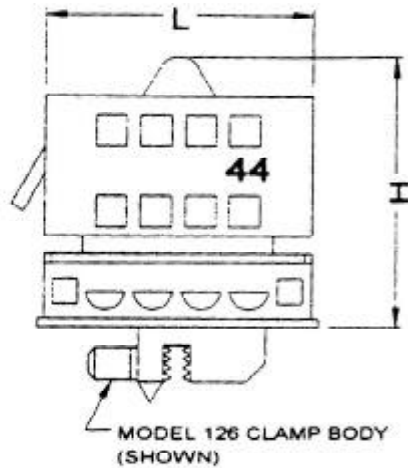
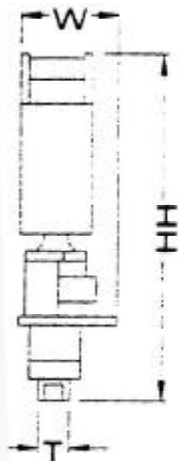
**MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR**

OPERATING INSTRUCTIONS

I. GENERAL DESCRIPTION

G. SPECIFICATIONS

1. Constant improvement and engineering progress make it necessary that we reserve the right to make specification changes without notice.

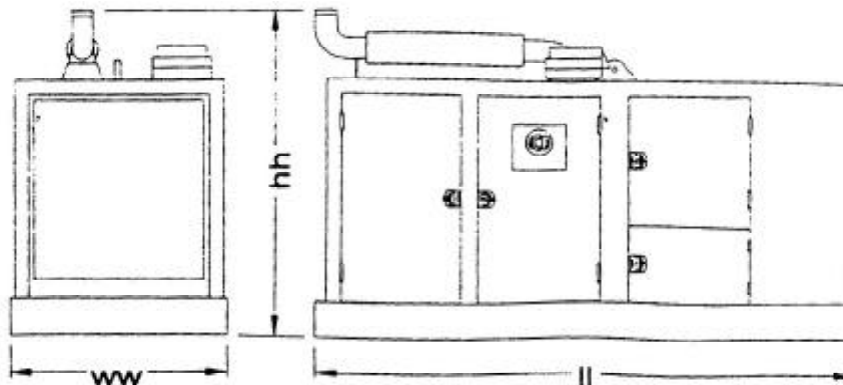


2. MODEL 44-50 VIBRATOR
(with hydraulic clamp)

Type	Hydraulic
Eccentric Moment	4400 in-lbs (50.7kg-M)
Frequency	800-1600 VPM
Amplitude	1.2 in. (13-30mm)
Pile Clamping Force	125 Tons (1112kN)
Max. Line Pull for	
Extraction	80 Tons (712kN)
Suspended Weight with 126 Clamp and	
half hoses	15,100 lbs. (6849kg)
Length [L]	97 in. (246cm)
Width [W]	21 in. (55cm)
Throat Width [T]	14.25 in. (36cm)
Height with Clamp [HH]	121 in. (307cm)
Height without clamp [H]	83 in. (211cm)

3. MODEL 570 POWER UNIT

Type	Diesel
Engine	CAT 3408TA
Horsepower (2100 RPM)	505 (377kW)
Weight	15388 lbs. (6980kg)
Length [ll]	154 in. (391cm)
Width [ww]	60 in. (152cm)
Height [hh]	95 in. (241cm)





**MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR**

OPERATING INSTRUCTIONS

II. PREPARATION FOR OPERATION

F. BLEEDING HYDRAULIC CLAMP HOSES

1. When the vibrator and hydraulic clamp are shipped with all hoses attached (between vibrator and clamp and five main hoses connected to the vibrator), the hoses are usually full of oil and may be used immediately. However, if any of the clamp hoses are connected at the job site or if air is present in hoses, they must be bled prior to operation.
2. Read SECTION III - OPERATING INSTRUCTIONS.
3. Start and warm up the diesel engine in accordance with SECTION III-C - STARTING AND WARMING UP ENGINE.
4. With the engine warmed-up and running at 1200 RPM, loosen the close-clamp line at the hydraulic clamp. Turn the clamp switch on the remote-control pendant to CLOSE. Wait until oil flows from the connection at the hydraulic clamp. When oil flows without air, tighten the connection.
5. After the line has been bled, alternately turn the clamp switch to CLOSE and OPEN to insure that the clamp is working properly. It may be necessary to bleed the line more than once. The open-clamp line may also require bleeding.

G. FILLING VIBRATOR PRESSURE HOSE

1. The vibrator is usually shipped with the vibrator hydraulic hoses full of oil and the unit may be used immediately. However, if the pressure hose has been removed from the vibrator, the hose should be allowed to fill with hydraulic oil prior to fullspeed operation.
2. Read SECTION III - OPERATING INSTRUCTIONS.
3. Start and warm up the diesel engine in accordance with SECTION III-C - STARTING AND WARMING UP ENGINE.
4. Turn the VIBRO-AUGER switch (inside Control Box) to the AUGER position.
5. With the diesel engine running at 1800 RPM, hold the CLAMP switch in the OPEN-REV position for 5 minutes. The Vibrator hoses will fill with oil.
6. Return the VIBRO-AUGER switch to the VIBRO position before proceeding.



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

OPERATING INSTRUCTIONS

II. PREPARATION FOR OPERATION

C. RIGGING OF VIBRATOR

A steel wire rope sling must be connected to the lifting pin of the vibration suppressor. The required strength of this sling depends on the capacity of the crane and the work to be carried out. A safety factor of five is recommended, (5 x 80 ton). Several turns of a smaller diameter cable will usually last longer than one turn of a larger diameter cable. Inspect daily for damage to sling or clamps.

D. CONNECTION OF HYDRAULIC CLAMP

The vibrator is usually shipped with the hydraulic clamp already attached.

If the clamp is not attached, it will be necessary to attach it to the bottom of the vibrator. Orient the clamp to the vibrator with the clamp cylinder end (movable jaw) at the same end of the vibrator at which the hose chute is mounted. All eight (1.5-6UNCx5.00) bolts must be in place and torqued to approximately 2800 ft-lbs. (387 Kg-M)

For caisson work, the caisson beam must be attached to the bottom of the vibrator and tightened as above. The 7 foot caisson beam uses (1.5-6UNCx8.00) bolts. Then slide the clamps into position on the caisson beam.



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

OPERATING INSTRUCTIONS

II. PREPARATION FOR OPERATION

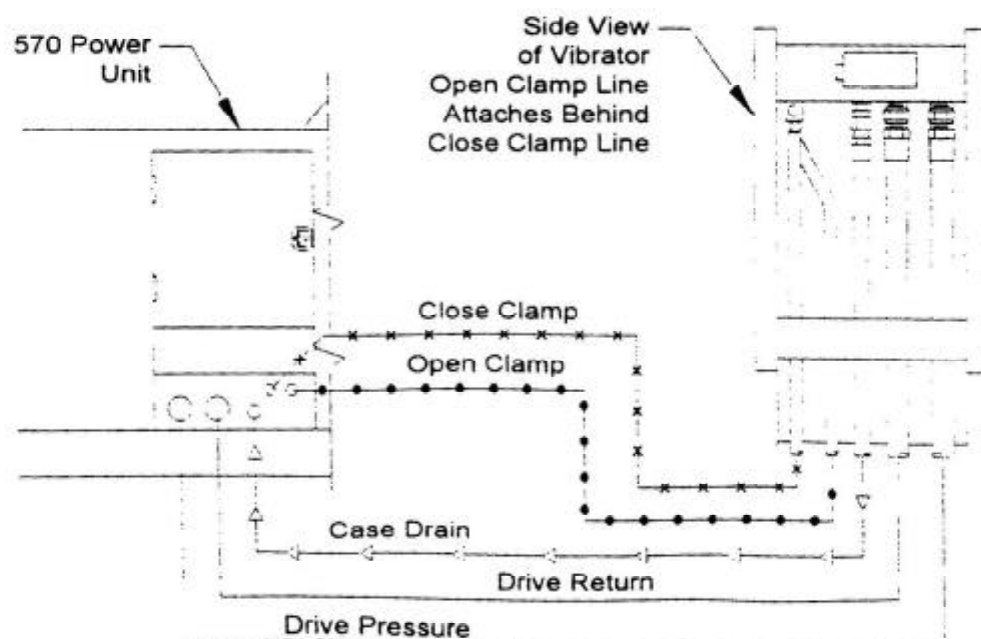
E. CONNECTION OF HYDRAULIC HOSES

1. Connection of hoses at power unit.

- a. The vibrator and hydraulic clamp are connected to the power unit by five hydraulic hoses (Fig. 1).

CAUTION: The power unit must be shut down during connection of the hydraulic hoses.

- b. The hoses connect to the power unit with quick-disconnect couplers. The hose couplers are arranged to insure correct connections at the power unit. See the diagram (Fig. 1) below for correct hose connection.
- c. Clean couplers with a lint-free cloth before making connections.
- d. Make sure that the couplers are fully run up. They should be fully hand tight. Do not use wrenches to tighten.
- e. Tighten the set screws on the two large couplers.



(Fig. 1)



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

OPERATING INSTRUCTIONS

II. PREPARATION FOR OPERATION

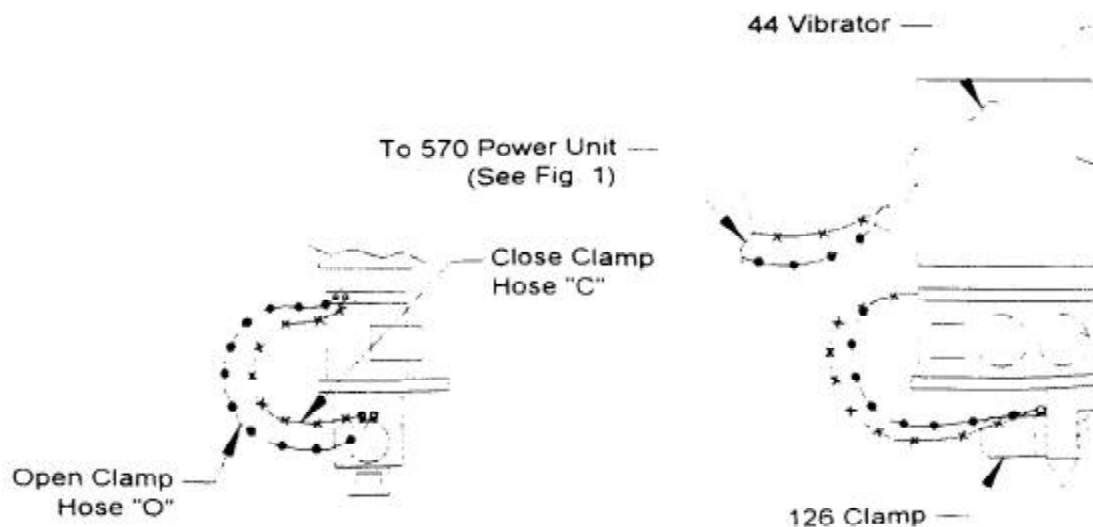
E. CONNECTION OF HYDRAULIC HOSES (CONTINUED)

2. Connection of hoses at vibrator.

- a. The vibrator is usually shipped with the hoses attached to the vibrator. If the hoses have been shipped separately, they must be connected in the field. Fig. 1 on the previous page shows the correct arrangement of the 5 hoses connecting the power unit to the vibrator.

CAUTION: Starting the vibrator with the hoses reversed will result in low power or possible ruptured hoses.

- b. The vibrator is usually shipped with the hydraulic clamp and hoses attached. If the clamp has been shipped separately, the two hoses connecting the clamp to the vibrator must be connected. Fig. 2 shows the correct arrangement of these hoses. For caisson clamps, four hoses must be connected. The two connections on the opposite end of the vibrator are reversed from the positions shown on the drawing below. Both ends are stamped with an "O" and a "C" to insure correct connection. The clamp connections are the same



(Fig. 2)



**MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR**

OPERATING INSTRUCTIONS

II. PREPARATION FOR OPERATION

A. GENERAL

When unloading and unpacking the vibratory driver, use extreme care. For your protection, make a thorough inspection of the unit immediately on delivery. In case of any damage or shortage, notify the transit agent at once and have the delivering carrier make a notation on the freight bill.

B. SAFETY PRECAUTIONS

Safety is basically common sense. There are standard safety rules, but each situation has its own peculiarities which cannot always be covered by rules. Therefore, your experience and common sense will be your best guide to safety. Be ever watchful for safety hazards and correct deficiencies promptly.

Use the following safety precautions as a general guide to safe operations:

1. When operating in a closed area, pipe exhaust fumes outside. Continued breathing of exhaust fumes may be fatal.
2. When servicing batteries, do not smoke or use an open flame in the vicinity. Batteries generate explosive gas during charging. There must be proper ventilation when charging batteries.
3. When filling fuel tank, do not smoke or use open flame in the vicinity.
4. Never adjust or repair the unit while it is in operation.
5. Never operate diesel engine with governor linkage disconnected.
6. Remove all tools and electrical cords before starting engine.
7. Store oily rags in containers.
8. Never store flammable liquids near the engine.

REMEMBER SAFETY IS EVERYONE'S BUSINESS.

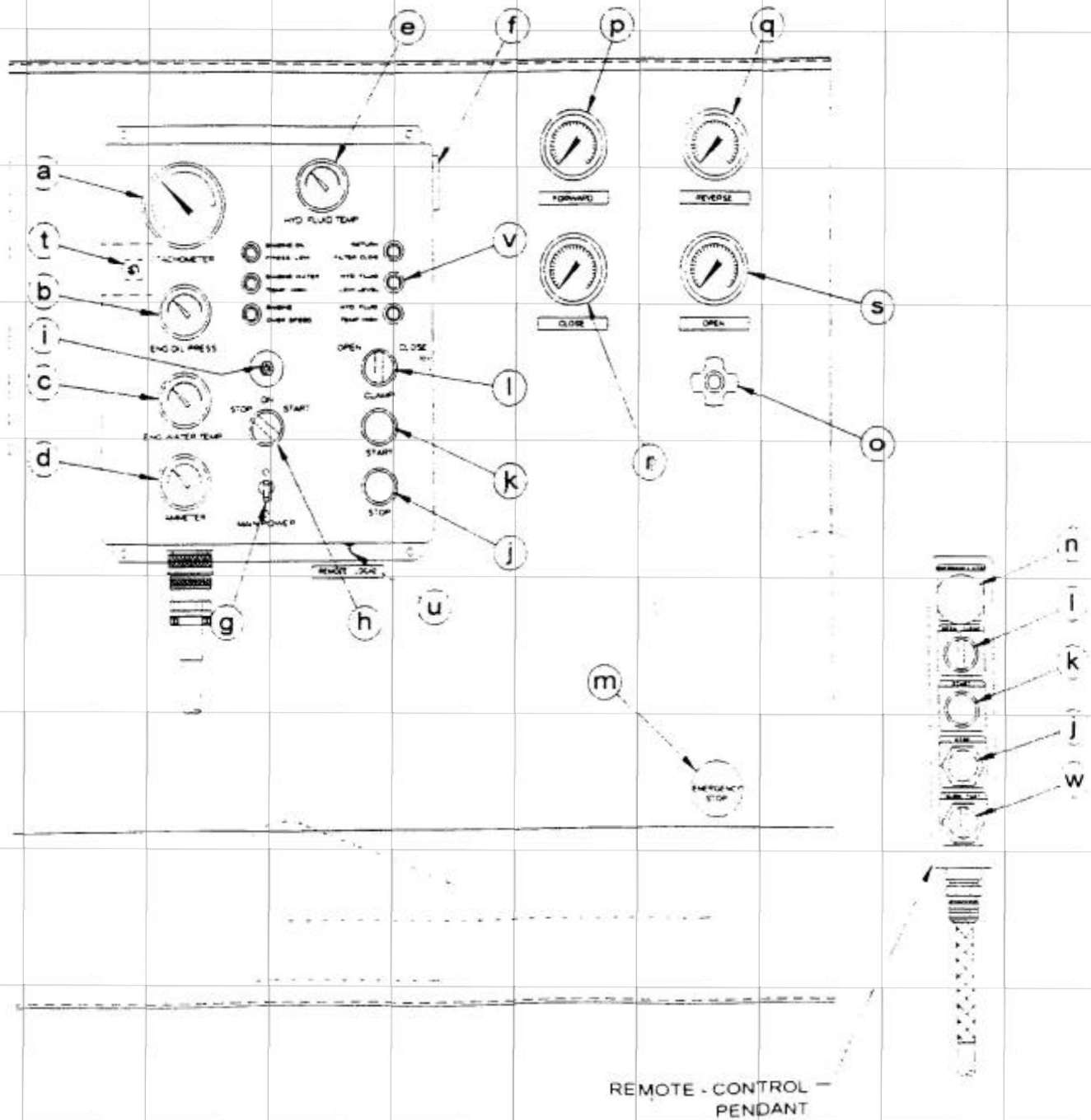


MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

OPERATING INSTRUCTIONS

III. OPERATING INSTRUCTIONS

CONTROL PANEL WITH REMOTE-CONTROL PENDANT





MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

OPERATING INSTRUCTIONS

III. OPERATING INSTRUCTIONS

A. COMPLETION OF SET-UP AND MAINTENANCE

1. Complete all preparation as described in Section II.
2. Read Section IV - MAINTENANCE AND ADJUSTMENTS and perform any required maintenance.

B. CONTROL PANEL

1. The control box (Fig. 1, page III-1) at the side of the power pack contains the controls and gages for the diesel engine, vibrator and the OPERATION AND MAINTENANCE INSTRUCTIONS.
2. Control panel contains the following controls, gages and shutdown indicators.
 - a. Engine Tachometer
 - b. Engine Oil Pressure Switch Gage
 - c. Engine Water Temp Switch Gage
 - d. Engine Ammeter
 - e. Hydraulic Oil Temperature Switch Gage
 - f. Engine Hour Meter
 - g. Main Power Switch - ON-OFF Switch & Circuit Breaker
 - h. Engine - ON-OFF-START - Switch for Diesel Engine
 - i. Engine Shutdown Reset Button - over ride button for engine shutdown switch. Must be held in until oil pressure exceeds 30 PSI.
 - j. Vibrator Stop Button
 - k. Vibrator Start Button - with clamp light.
 - l. Clamp Switch - open - close.
 - m. Emergency Stop - pull out to stop engine.
 - n. Emergency Stop - push to stop engine.
 - o. Engine Throttle (Manual)
 - p. Pressure Gage - Forward
 - q. Pressure Gage - Reverse
 - r. Pressure Gage - Close Clamp
 - s. Pressure Gage - Open Clamp
 - t. Vibrator - Auger Switch
 - u. Remote - Local Switch
 - v. Shutdown indicator lights (6) See notes below.
 - w. Engine Throttle (Remote Electric)

- Notes:
1. Engine Oil Pressure shutdown indicator - comes on if engine has been shut down automatically due to engine oil pressure being low.
 2. Engine Water Temperature shutdown - comes on if engine has been shut down automatically due to engine water overheating.



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

OPERATING INSTRUCTIONS

III. OPERATING INSTRUCTIONS

B. CONTROL PANEL (CONTINUED)

3. Engine Overspeed shutdown indicator - comes on if engine has been shut down automatically due to the engine being run at excessively high RPM's.
 4. Filter Clogged shutdown indicator - comes on if engine has been shut down automatically due to the hydraulic oil return filter being clogged.
 5. Hydraulic Oil Level Low shutdown indicator comes on if engine has been shut down automatically due to low hydraulic oil level in the reservoir.
 6. Hydraulic Oil Temperature High shutdown indicator - comes on if engine has been shut down automatically due to high hydraulic oil temperature.
3. The Operating & Maintenance Instructions, on the control box door, are there as reminders only. They are not intended to substitute for a thorough understanding of the Operators Manual.



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

OPERATING INSTRUCTIONS

III. OPERATING INSTRUCTIONS

C. STARTING AND WARMING UP ENGINE

1. Before starting the engine, read the CATERPILLAR OPERATION GUIDE carefully. Follow the engine starting, operating and maintenance procedures in that manual.
2. The diesel engine should not be started if the temperature of the hydraulic oil is below 0°F (-18°C). If ambient temperatures below 0°F (-18°C) are anticipated, an immersion heater for the hydraulic oil is available. Consult ICE for details.
3. Turn the MAIN POWER switch on the control panel to on.
4. Pull out the ENGINE THROTTLE about half way. Pressing the button on the end of the throttle allows rapid throttle adjustment. Turning the throttle allows fine adjustment. Be sure the EMERGENCY STOP knob is fully pushed in.
5. Press and hold the SHUTDOWN RESET. Turn the ENGINE START switch to START. Hold SHUTDOWN RESET in until engine oil pressure exceeds 30 PSI (2 BAR).
6. Adjust the throttle until the engine is running at 1500 RPM and allow engine to warm up for five minutes. After the engine is warmed up, adjust throttle so engine runs at 2300 RPM's under no load. The engine should hold 2100 RPM's under load.
7. Allow the temperature of the hydraulic oil to come up to at least 30°F (-1°C) before starting the vibrator.

D. WARMING HYDRAULIC OIL

1. The vibrator should not be operated at full speed if the temperature of the hydraulic oil is below 60°F (16°C).
2. If temperature is below 60°F (16°C), set the engine at 1500 RPM and press the START button on the control pendant to start the vibrator. Allow the vibrator to run until the temperature of the hydraulic oil exceeds 60°F (16°C).



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

OPERATING INSTRUCTIONS

III. OPERATING INSTRUCTIONS

D. WARMING HYDRAULIC OIL (CONTINUED)

3. When the engine is warmed up and hydraulic oil temperature is at least 60°F (16°C), full speed operation may begin.
4. The hydraulic oil temperature should be monitored with the Hydraulic Temperature Oil Switch Gage. Oil temperature should never exceed 160°F (71°C). The engine will automatically shut down if oil temperature exceeds 160°F (71°C).

CAUTION: Do not operate the vibrator if hydraulic oil temperature exceeds 160°F (71°C) as this may damage hydraulic components.

E. OPERATION OF REMOTE-CONTROL PENDANT

1. The operation of the vibratory driver is controlled by the remote-control pendant. The pendant is connected to the control cabinet with 50 feet (15m) of electrical cable to permit operation from any advantageous position near the vibrator.
2. The pendant has an Emergency Stop palm button, two control buttons, one with an indicator light, and two switches.

a. To Clamp to Pile:

Position vibratory driver on pile. Turn the clamp switch on the pendant to CLOSE. The CLAMP light (Start Button) on the pendant will illuminate when the hydraulic clamp has achieved adequate pressure to permit vibration to begin. The light should normally come on in a few seconds.

b. To Start Vibration:

Press the START button (lighted).

CAUTION: Do not press the START button until the CLAMP light comes on indicating adequate clamping pressure.



**MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR**

OPERATING INSTRUCTIONS

III. OPERATING INSTRUCTIONS

E. OPERATION OF REMOTE-CONTROL PENDANT (CONTINUED)

c. To Stop Vibration:

Press the STOP button.

The vibrator will stop vibration in a few seconds. If the STOP button does not stop the vibrator, pressing the Emergency Stop button will shut down the Power Unit and the vibrator will stop.

d. To unclamp from pile.

Turn the CLAMP switch to OPEN to release the hydraulic clamp so that the vibrator can be removed from the pile. Hold the CLAMP switch in the OPEN position for approximately 10 seconds or until a visual check shows the jaws to be fully open. An electrical interlock prevents the jaw from opening if the Stop button has not been pressed.

CAUTION: Do not turn the switch to OPEN until a visual check indicates that vibration has stopped.

e. Remote Electric Throttle

Momentarily turning the electric throttle switch to the FAST position will increase engine speed (RPM). Turning this switch to the SLOW position will reduce engine speed.

f. Emergency Stop Palm Button

Momentarily pressing the EMERGENCY STOP button will stop the diesel engine and all vibrator functions will cease.

g. If the remote- control pendant is damaged or the pendant line is cut, you may still operate the vibrator by using the control switches on the control panel. (See Fig. 1 on page III-1 items J, K, L). To activate these switches, find the toggle switch on the bottom of the control panel, labeled "REMOTE-LOCAL". Turn the switch (item U) to LOCAL and the switches on the control panel will be functional, and the remote control pendant will be disabled.

(NOTE: The EMERGENCY STOP button on the pendant is not disabled during "LOCAL" operation)

h. Radio Remote Control: A Radio frequency Remote Control Unit is available from ICE for the Model 44-50. This unit allows the operator flexibility to control the Vibrator at greater distances from the Power Unit without the inconvenience of the electrical cable. Contact ICE for information and operating instructions.



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

OPERATING INSTRUCTIONS

III. OPERATING INSTRUCTIONS

F. CHANGING FREQUENCY

1. In order to provide maximum flexibility in achieving optimum pile penetration and extraction rates, the frequency of the vibratory driver is adjustable.
2. The frequency can be varied from 800 to 1600 vibrations per minute by changing engine speed. Engine speed is changed with the ENGINE THROTTLE on the control panel or with the remote electric throttle (FAST / SLOW) switch on the pendant. Vibration frequency corresponds approximately to engine speed according to the table shown below.

<u>ENGINE RPM</u>	<u>VIBRATOR VPM</u>
2260	1600
2000	1400
1700	1200
1410	1000
1100	800

G. SHUT DOWN

1. Stop the vibrator.
2. Allow the diesel engine to run for five minutes at 1100 RPM.
3. Reduce engine speed to idle for about thirty seconds.
4. Stop the engine by turning the ENGINE START switch to OFF.
5. Turn MAIN POWER switch to OFF.
6. Check engine crankcase oil level while power unit is setting level.
7. CAUTION: If the diesel engine is shut down while the vibrator is clamped to a pile, the clamp check valve will keep the vibrator clamped to the pile. However, system leakage could result in a loss of clamp pressure over time. Therefore, it is not recommended to leave the vibrator clamped to a pile when the diesel engine is not running.



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

OPERATING INSTRUCTIONS

IV. MAINTENANCE AND ADJUSTMENTS

A. GENERAL

Preventive maintenance includes normal servicing that will keep the vibratory driver, clamp, and power unit in peak operating condition and prevent unnecessary trouble from developing. This servicing consists of periodic lubrication and inspection of the moving parts and accessories of the unit.

Lubrication is an essential part of preventative maintenance, controlling to a great extent the useful life of the unit. Different lubricants are needed and some components in the unit require more frequent lubrication than others. Therefore, it is important that the instructions regarding types of lubricants and frequency of their applications be closely followed.

To prevent minor irregularities from developing into serious conditions that might involve shut-down and major repair, several other services or inspections are recommended for the same intervals as the periodic lubrications. The purpose of these services or inspections is to assure the uninterrupted operation of the unit.

Thoroughly clean all lubrication fittings, caps, filler and level plugs and their surrounding surfaces before servicing. Prevent dirt from entering with lubricants and coolants. The intervals given in the schedule are based on normal operation. Perform these services, inspections, etc., more often as needed for operation under abnormal or severe conditions.

B. DAILY

1. Check the entire unit prior to and during set-up each day or at the beginning of each shift.
2. Prior to starting the power unit or at the beginning of each shift, check the following items:
 - a. Visibly inspect all bolts, nuts and screws including the bolts fastening the hydraulic clamp to the vibration case to insure they are tight. **IMPORTANT:** Vibration loosens bolts. Check carefully.
 - b. Tighten bolts holding gripping jaws in hydraulic clamp.
 - c. Grease plunger in hydraulic clamp with any good multi-purpose grease.
 - d. Check the oil level in the vibration case and add oil if required. The oil level should be in the middle of the sight glass. Change oil if milky or contaminated. **DO NOT OVERFILL**
 - e. Check the oil level in the hydraulic reservoir and refill if necessary.

CAUTION: It is absolutely imperative that no dirt or other impurities be permitted to contaminate the hydraulic oil. Any contamination will drastically shorten the life of the high-pressure hydraulic system.



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

OPERATING INSTRUCTIONS

IV. MAINTENANCE AND ADJUSTMENTS

B. DAILY (CONTINUED)

- f. Visually check all hoses for signs of damage or cuts that might cause hose failure during operation. Be sure all connections are tight, especially the quick-disconnect couplers.
- g. Visually inspect all suppressor elastomers.
- h. Electrical components need no maintenance except periodic wiping with a clean, dry, lint-free cloth to remove dust.
- i. Perform all daily (10 Service Meter Units) maintenance checks and lubrication in the CATERPILLAR OPERATION GUIDE. For the ICE Model 570 power unit, the HOUR METER on the control panel may be considered to read Caterpillar's "Service Meter Units".

3. After engine start-up, check the following:

- a. Check all hydraulic hoses for leaks. Make sure they hang freely with no kinks.
- b. Check both pumps and all hydraulic manifolds for leaks.
- c. Check the filter indicators. The filter indicators on the power unit must be checked with the diesel engine running at full speed.

C. 125 HOURS (125 Service Meter Units)

1. Every 125 hours drain and refill the vibration case with new lubricant.
2. Perform all maintenance checks and lubrication indicated in the Caterpillar OPERATION GUIDE.
3. After the first 100 hours, drain and replace the lubricant in the multi-pump drive, thereafter change every six months or 2000 hours, which ever comes first.

D. 250, 500 HOURS and Other

1. See Caterpillar OPERATION GUIDE.

E. ANNUALLY

1. Have the hydraulic oil tested by a local hydraulic service center. Replace if required.
2. See Caterpillar OPERATION GUIDE.



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

OPERATING INSTRUCTIONS

IV. MAINTENANCE AND ADJUSTMENTS

F. SEVERE CONDITIONS

1. The service intervals specified are based on normal operating conditions. Operation under unusual conditions require some adjustments in servicing intervals.
2. When the average temperature is above 80°F (26°C) or below -10°F (-23°C), reduce service intervals to one-half of those specified in Sections C through E.
3. When operating in the presence of dust or sand, reduce service time intervals by one-half of those specified.
4. When operating in excess of twelve hours per day, reduce service time intervals by one-half of those specified.
5. When operating in air with high salt or moisture, the servicing intervals need not usually be changed. However, the unit should be inspected weekly to determine if additional servicing be required. Also, have hydraulic oil tested quarterly.
6. During stand-by or inactive period, the servicing intervals may be twice those specified above. The unit should be exercised every week. Also, refer to the Caterpillar OPERATION GUIDE.



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

OPERATING INSTRUCTIONS

IV. MAINTENANCE AND ADJUSTMENTS

G. LUBRICATION

1. Crankcase (Diesel Engine)

- a. Follow the engine manufacturer's maintenance schedule and the lubricating oil specifications outlined in the CATERPILLAR OPERATION GUIDE.
- b. The lubricant shall meet the performance requirements of API Service Classifications CD or MIL-L-2104C.
- c. New engines are shipped with ASHLAND 400M+HDT 15W-40 and the following multi-grade crankcase oils are recommended for use or replacement in normal operation (10°F to 90°F) (-12°C to 32°C).

AMOCO	15W-40	300
ARCO	15W-40	Fleet S3 Plus
BORON (BP)	15W-40	Vanellus C Extra
CHEVRON	15W-40	Delo 400
CITGO	15W-40	C500 Plus
CONOCO	15W-40	Fleet Supreme
EXXON	15W-40	XD3
GULF	15W-40	Super Duty Plus
MOBIL	15W-40	Delvac Super
PHILLIPS	15W-40	Super HD II
SHELL	15W-40	Rotella T
SUN	15W-40	Sunfleet Super C
TEXACO	15W-40	Ursa Super Plus
UNION	15W-40	Guardol
VALVOLINE	15W-40	All Fleet

- d. For operation in extreme sub-zero climate, refer to the CATERPILLAR OPERATION GUIDE Crankcase Lubricating Oils or contact the nearest Caterpillar representative.

2. Vibration Case

The oil level is easily read through the sight glass located at the lower center of the vibration case opposite the motor side. Lubricating oil may be added when necessary through either of the holes in the vibration case top plate after removing the 1" pipe plugs. To drain the case, remove a 3/4" pipe plug at either end of the base plate. Tilt the case for complete drainage.



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

OPERATING INSTRUCTIONS

IV. MAINTENANCE AND ADJUSTMENTS

G. LUBRICATION (CONTINUED)

3. Multi-Pump Drive Adapter

The oil level is easily checked by removing the 1/4 hex head pipe plug on the right side of the multi-pump drive adapter. Lubricating oil should be to this level. If low, lubricating oil may be added by removing the 1/2 socket head pipe plug located on the left side of the Multi-pump Drive Adapter. Draining the lubricating oil may be done by removing the 1/2 socket head pipe plug on the bottom of the Multi-pump Drive Adapter.

4. The preferred lubricating oil for ICE vibration cases and multi-pump drive adapters is a "High Moly Oil" (Schaeffer 268). Longer intervals between oil changes and fewer maintenance hours spent on mechanical service can generally be realized with this oil.

Therefore, whenever the "first preferred" oil is not available or desired, and an alternate oil is selected, it will be necessary to test and/or change the oil at shorter intervals.

Extensive tests have indicated that the use of Shatter 268 results in cooler operation and extended bearing and gear life.

The vibration case and multi-pump drive adapter lubricant installed at the factory is SCHAEFFER 268 but the following gear lubes may be used when changing lubricants:

FIRST Preference Group :
SCHAEFFER 268

SECOND Preference Group:

MOBIL	SHC-634
BORON	Gearep 140
CHEVRON	Gear Comp. NL460
CITGO	Premium MP 85W-140
CITGO	Standard MP 85W-140
GULF	Lub 85W-140 Lub 85W-140
PHILLIPS	SMP 85W-140
SHELL	Omala 460 Omala 460
SUN	Sunep 1110



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

OPERATING INSTRUCTIONS

IV. MAINTENANCE AND ADJUSTMENTS

G. LUBRICATION (CONTINUED)

THIRD Preference Group (Natural Petroleum Base):

AMOCO	Perma Gear EP140
ARCO	Pennant NL 460
CONOCO	EP 460
EXXON	Spartan EP 460
PHILLIPS	AP 140
TEXACO	Meropa 460
UNIONMP	85W-140
VALVOLINE	Gear Lub 85W-140

SCHAEFFER 268 Lubricant is available from ICE in five gallon cans.
See SECTION VIII - ORDERING PARTS, page VIII-48

5. Hydraulic System

To maintain the maximum operating efficiency in the precision parts of the hydraulic system, it is extremely important to eliminate factors which can cause breakdowns or unsatisfactory performance in the system. Among the most common of these factors are rust, corrosion, contamination and the products of oil deterioration. Most problems can be minimized or avoided simply by maintaining a disciplined preventive maintenance program.

Some simple steps to follow as part of that program are:

- a. Keep stored oil dry and clean at all times and always store in clean containers.
- b. Always clean tools, spouts, lids, funnels, etc. when used in conjunction with the transfer of oil.
- c. Never put dirty oil into the hydraulic system. Use only clean, uncontaminated oil of the types recommended below. Never return to the system any oil which has leaked out.

NOTE: Foreign material in the hydraulic system can drastically effect the life and operation of many hydraulic component parts.

- d. Clean or replace filter elements at the first indication that they are dirty or ineffective.

Mixing of different manufacturers' hydraulic oil is not recommended. However, it can be done if the oils are miscible (contain the same base stock and additives). It may be necessary to contact an oil supplier to determine this.



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

OPERATING INSTRUCTIONS

IV. MAINTENANCE AND ADJUSTMENTS

G. LUBRICATION (CONTINUED)

New power units are shipped with CHEVRON Clarity AW46 hydraulic oil. This oil exceeds the requirements of both the E.P.A. and U.S. Fish and Wildlife Service for non-toxicity and is inherently biodegradable. Adding any other oil from the list that follows, will contaminate the Clarity oil and the system will no longer be environmentally friendly.

Should the customer choose to use an alternate oil, the following recommendations may be used when replacing oil in the hydraulic system. (See page IV-6)

FIRST Preference Group:

CHEVRON	Clarity AW46
MOBIL	DTE-15
SUN	2105

SECOND Preference Group:

ARCO	Duro AW32
CHEVRON	Hydraulic AW32
PHILLIPS	Magnus A32
SHELL	Tellus 32

THIRD Preference Group:

BORON	Energol HLP32
CITGO	All-Temp HD
CONOCO	Super 32
EXXON	Nuto H32
GULF	Harmony 32AW
SUN	Sunvis 805 MG
TEXACO	Rando HD AZ32
UNION	Unax AW32

Whenever oils from the second preference group are used, it is necessary to test the oil more often to insure that viscosity remains within recommended limits while in service. Using oils from the third preference group requires even a more discerning inspection than use of oils from the second group. Third Group oils may be used when temperature variations are less than those listed below.

The recommended oils were chosen based on the hydraulic system operating temperature range being 5°F (-15°C) (cold ambient start-up) to 160°F (71°C) (maximum operating).



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

OPERATING INSTRUCTIONS

IV. MAINTENANCE AND ADJUSTMENTS

G. LUBRICATION (CONTINUED)

When operating in arctic conditions, it is recommended to use an immersion heater to pre-heat the oil prior to starting. Contact ICE for other arctic operating procedures. It may also be necessary in extremely cold or hot climates to use a different viscosity oil which is better adapted to adverse conditions. Contact the nearest oil supply representative for suggested procedures.

CHEVRON Clarity AW46 hydraulic oil is available from ICE in five gallon cans. See SECTION VIII - ORDERING PARTS, page VIII-54.

H. DRAINING AND FILLING HYDRAULIC OIL RESERVOIR

1. The Hydraulic reservoir is drained by removing a plug on the bottom of the reservoir.
2. The hydraulic reservoir is filled by the manual pump mounted on the back (engine side) of the reservoir. All oil is pumped to the reservoir through the return filter (F2) to insure no dirt enters the hydraulic system.

I. CHANGING HYDRAULIC RETURN FILTER ELEMENT

1. The 2 return filters are located in the hydraulic reservoir below the Control Panel.
2. To remove elements, remove the 2 hex nuts and carriage bolts from the clamp halves. Remove clamp halves and cover plug. (Note: Approximately 1 gallon (3.8L) of hydraulic oil will be lost.)
3. Remove the bypass valve and spring assembly from filter housing. Remove and separate the two elements. Save the plastic element connector. The use of ICE filter elements is strongly recommended. If not, remove and reuse the support springs from the old elements.
4. Clean filter housing interior and all component parts with a lint-free rag.
5. Check Clamp seal for damage. Lubricate with multi-purpose grease.
6. Install two new elements on filter connector, slide element assembly into housing. Be sure inner most element engages the tube in back of housing
7. Replace bypass valve and spring assembly.

CAUTION: Failure to install support springs could result in element collapse with subsequent damage to oil cooler and/or filter housing.



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

OPERATING INSTRUCTIONS

IV. MAINTENANCE AND ADJUSTMENTS

I. CHANGING HYDRAULIC RETURN FILTER ELEMENT (CONTINUED)

8. Replace cover plug and clamp halves, tighten two nuts.
9. Repeat for second filter.
10. Inspect for leaks when the engine is restarted.



**MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR**

OPERATING INSTRUCTIONS

IV. MAINTENANCE AND ADJUSTMENTS

K. BOLT TORQUE INFORMATION

The only way to actually tighten high strength bolts is with a torque wrench. Proper use of the torque wrench is important. To obtain the listed torques, a steady pull should be exerted to the handle until the desired torque is reached.

The following torque specifications apply to the bolts from the component assemblies listed. Whenever any of these bolts, are replaced, the given torque specifications should be adhered to.

<u>VIBRATION SUPPRESSOR</u>		<u>Page VIII-6</u>
Item 8	3/8"-16	48 Ft-Lbs (6.6 Kg-M)
Item 17, 29, 36	1/2"-13	119 Ft-Lbs (16.4 Kg-M)
Item 14	5/8"-11	233 Ft-Lbs (32.2 Kg-M)
Item 12, 43, 44	3/4"-10	417 Ft-Lbs (57.6 Kg-M)
Item 38, 40	1"-8	1009 Ft-Lb (139.4 Kg-M)
<u>VIBRATION CASE</u>		<u>Page VIII-10</u>
Item 16	1/2"-13	119 Ft-Lbs (16.4 Kg-M)
Item 17	3/4"-10	417 Ft-Lb (57.6 Kg-M)
<u>CLAMP BODY</u>		<u>Page VIII-38</u>
Item 3, 7	1"-8	1009 Ft-Lb (139.4 Kg-M)
Item 18	1-1/2"-6	2800 Ft-Lbs (387 Kg-M)



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

OPERATING INSTRUCTIONS

V. HYDRAULIC CIRCUITRY (REFERENCE: HYDRAULIC SCHEMATIC PG V-4)

A. HYDRAULIC CLAMP

With the diesel engine running, hydraulic oil is taken from the reservoir by the clamp pump (P2). The clamp pump flow returns to the reservoir if the clamp switch on the pendant has not been moved.

Turning the clamp switch on the control pendant to CLOSE activates the CLAMP CONTROL VALVE (V1). Hydraulic oil is directed to the CLOSE CLAMP side of the hydraulic CYLINDER (CYL) in the hydraulic clamp. The clamp closes. Clamping pressure is indicated by the Clamp Pressure Gage (GA-3). When clamping pressure reaches approximately 4500 PSI (310 Bar), the CLAMP PRESSURE SWITCH (PS-1) deactivates the CLAMP CONTROL VALVE (V1), which directs the flow from the clamp pump to the reservoir. Pressure at the clamp is maintained by the CLAMP CHECK VALVE (CV5). If clamping pressure falls below 4200 PSI (290 Bar), the CLAMP PRESSURE SWITCH activates the CLAMP CONTROL VALVE to restore pressure.

Turning the clamp switch on the control pendant to OPEN activates the CLAMP CONTROL VALVE (V1). Hydraulic oil is directed to the OPEN CLAMP side of the hydraulic cylinder. The pressure in the OPEN CLAMP line opens the CLAMP CHECK VALVE (CV5). The clamp opens. Pressure in the OPEN CLAMP line is indicated by the clamp pressure gage (GA-4).

Pressure in the clamping circuit is limited to 4800 PSI (331 Bar) by the CLAMP RELIEF VALVE (RV2). The quick-disconnect couplers (QD3 & QD4) permit decoupling of the clamp hoses at the power unit.

B. VIBRATOR DRIVE

With the diesel engine running, hydraulic oil is taken from the reservoir by the DRIVE PUMPS (P1). Oil pressure opens the cartridges CA1, CB1 and vents the hydraulic oil back to the reservoir through the RETURN FILTERS (F2), if the vibrator button (START) has not been pushed.

Pushing the START button, on the control pendant, activates the FORWARD SOLENOID on the CONTROL VALVE (V2). By blocking the pilot flow from cartridges CB1 and CA2, the CONTROL VALVE (V2) causes these cartridges to close, thus directing pump flow to the VIBRATOR MOTORS (M).



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

OPERATING INSTRUCTIONS

V. HYDRAULIC CIRCUITRY

B. VIBRATOR DRIVE (CONTINUED)

Full motor speed is reached within a few seconds and the motor drive pressure is indicated by GAGE (GA1). Maximum drive pressure is limited to approximately 4800 PSI (331 Bar) by the FORWARD RELIEF VALVE (RV1). The FORWARD RELIEF VALVE (RV1), if opened by over pressure, permits a small pilot flow from cartridges (CB1 AND CA2). This pilot flow causes cartridges (CB1 and CA2) to partially open and allows some or all of the pump flow to return to the reservoir. Oil exiting VIBRATOR MOTORS (M) open cartridge BV and returns to the power unit. Cartridge BV opens easily because its pilot flow is "vented" by BRAKE VALVE (RV5). BRAKE VALVE (RV5) is held open by pressure coming from the motor drive FORWARD system. Case drain oil from the motors returns to the reservoir. Case drain pressure is limited to 50 PSI (3.4 Bar) by the CASE DRAIN RELIEF VALVE (RV3). Oil returning to the power unit opens cartridge CB2 and returns to the reservoir through COOLER VALVE (V3), HEAT EXCHANGER (HE) and RETURN FILTERS (F2). Cartridge CB2 opens easily because its pilot flow is "vented" by CONTROL VALVE (V2).

Pushing the STOP button on the control pendant, de-energizes the CONTROL VALVE (V2) and "vents" (open) cartridges CA1, CA2, CB2, and CB1, allowing pump flow to go directly back to the reservoir. When pressure is removed from the drive FORWARD system, the BRAKE VALVE RELIEF (RV5) closes and blocks the pilot flow BRAKE VALVE (BV) cartridge and causing it to close. Maximum brake pressure generated by BRAKE VALVE (BV) is limited by BRAKE VALVE RELIEF (RV5) TO 2000 PSI (138 Bar). This 2000 PSI (138 Bar) back pressure rapidly brakes the motors (M) to a stop.

Hydraulic oil temperature is regulated by the COOLER VALVE (V3). When oil temperature is below 100°F (38°C), V3 directs the flow directly to the reservoir through FILTER (F2). When oil temperature exceeds 100°F (38°C), COOLER VALVE (V3) directs flow through the HEAT EXCHANGER (HE) before it enters the reservoir, through FILTER (F2). Excessive pressure in the HEAT EXCHANGER (HE) is prevented by CHECK VALVE (CV3), which bypasses excess flow and limits pressure to 65 PSI (4.5 Bar).

The quick-disconnect couplers (QD1, QD2, and QD5) permit de-coupling of the drive and case drain hoses at the power unit.



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

OPERATING INSTRUCTIONS

V. HYDRAULIC CIRCUITRY

C. OTHER

Returning oil is filtered by the RETURN FILTER (F2). The return FILTER CHECK VALVES (CV1 and CV2) prevents oil loss from the reservoir when the filter elements are removed.

A manual PUMP (MP) is provided to fill the hydraulic reservoir. A CHECK VALVE (CV4) prevents loss of returning hydraulic oil back through this pump.

Temperature of the oil in the reservoir is continually sampled by the hydraulic oil Temperature Switch Gage (TS2), which shuts down the diesel engine if the oil temperature exceeds 160°F (71°C).

Motor cavitation is prevented in the braking operation by the CHECK VALVE (CV6).

Extra Long ACCUMULATOR HOSE (AC) in pilot system expands as pressure increases. The additional pilot flow causes the closing cartridges CB1 and CA2 to produce a smooth acceleration of the VIBRATOR MOTOR (M).

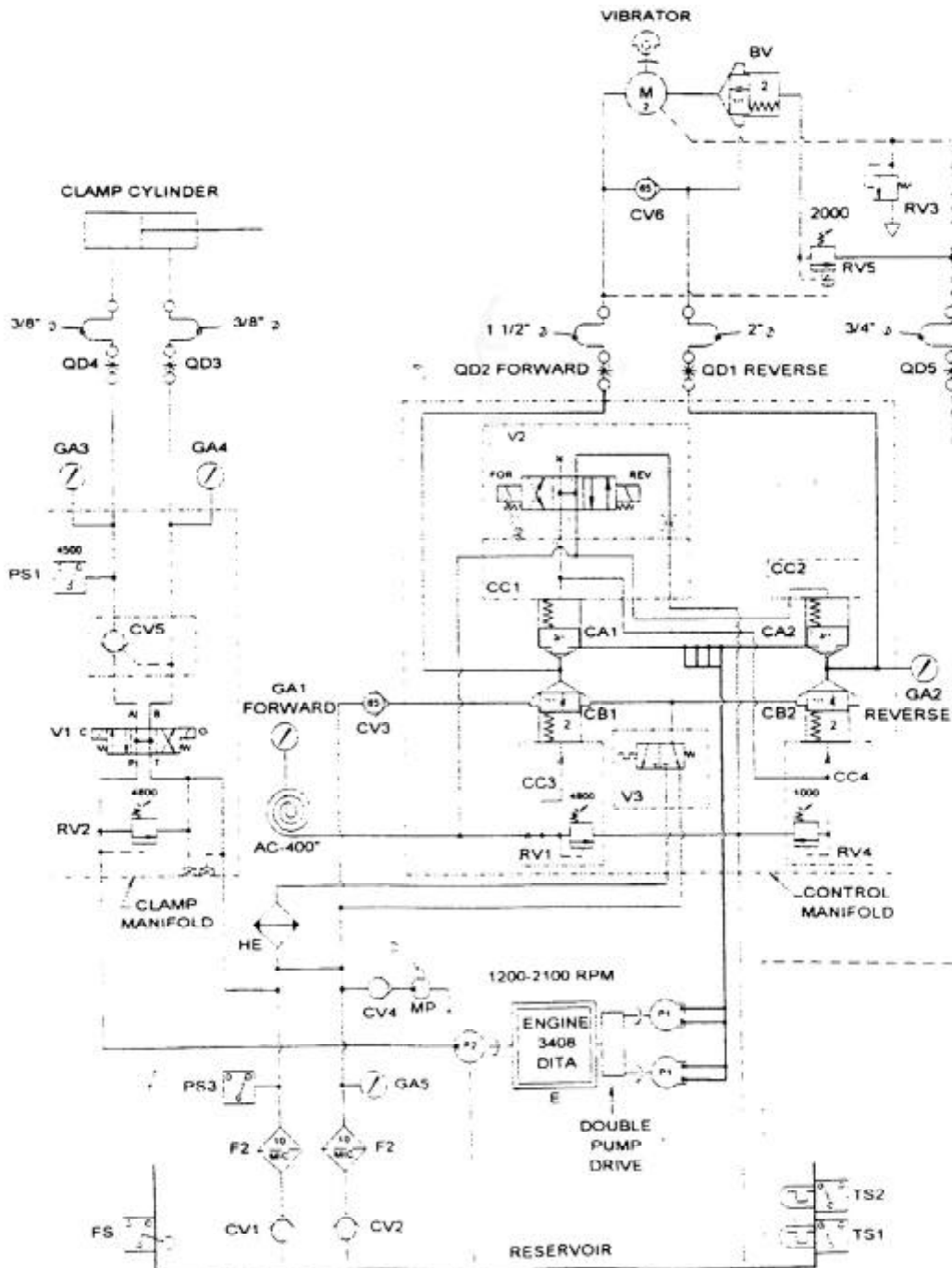


MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

OPERATING INSTRUCTIONS

V. HYDRAULIC CIRCUITRY
FROM S/N 174179

HYDRAULIC SCHEMATIC





MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

OPERATING INSTRUCTIONS

V. HYDRAULIC CIRCUITRY

D. HYDRAULIC COMPONENTS LIST TO S/N 174178

Notation	Description	Part Number	Page Number
AC	Accumulator Hose	110680	VIII-28
BV	Brake Valve Cartridge	110622	VIII-13
CA1 & 2	Cartridge A (2)	110624	VIII-35A
CB1 & 2	Cartridge B (2)	110622	VIII-35A
CC1	Cartridge Cover	110530	VIII-35A
CC2	Cartridge Cover	110546	VIII-35A
CC3	Cartridge Cover	110606	VIII-35A
CC4	Cartridge Cover	110544	VIII-35A
CV1 & 2	Check Valve Return Filter	110864	VIII-33
CV3	Check Valve -Bypass	130339	VIII-35A
CV4	Manual Pump Check Valve	100451	VIII-27
CV5	Clamp Check Valve	110149	VIII-37
CV6	Check Valve - Vibrator	110296	VIII-13
CYL	Hydraulic Clamp Cylinder		
E	Diesel Engine	110375	VIII-26
F2	Return Filter (2)	810481	VIII-28
FS	Float Switch	100314	VIII-28
GA1-4	Pressure Gage	110600	VIII-29
GA5	Filter Indicator Gage	100775	VIII-28
HE	Heat Exchange	100551	VIII-26
M	Motor (2)	110328	VIII-11
MP	Manual Pump	100447	VIII-27
P1	Drive Pump (4)	110490	VIII-28
P2	Clamp Pump	110401	VIII-29
PS1	Clamp Pressure Switch	810033	VIII-37
PS3	Pressure Switch	100602	VIII-30
QD1	Vibrator Reverse Disconnect	110690	VIII-29
QD2	Vibrator Forward Disconnect	110692	VIII-30
QD3	Clamp Open Disconnect	100777	VIII-27
QD4	Clamp Close Disconnect	100245	VIII-27
QD5	Case Drain Disconnect	400095	VIII-27
RV1	Forward Relief Valve	100632	VIII-35A
RV2	Clamp Relief Valve	100898	VIII-37
RV3	Case Drain Relief Valve	100032	VIII-13
RV4	Reverse Relief Valve	100630	VIII-35A
RV5	Brake Valve Relief	110310	VIII-13
TS1 & 2	Temperature Switch	110640	VIII-19
V1	Clamp Control Valve	110147	VIII-37
V2	Control Valve	810519	VIII-35A
V3	Cooler Valve	110628	VIII-35A
V4	Valve (Auger-Vibro)	100654	VIII-35A



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

OPERATING INSTRUCTIONS

V. HYDRAULIC CIRCUITRY

D. HYDRAULIC COMPONENTS LIST FROM S/N 174179

<u>Notation</u>	<u>Description</u>	<u>Part Number</u>	<u>Page Number</u>
AC	Accumulator Hose	110680	VIII-28
BV	Brake Valve Cartridge	110622	VIII-13
CA1 & 2	Cartridge A (2)	110624	VIII-35B
CB1 & 2	Cartridge B (2)	110622	VIII-35B
CC1	Cartridge Cover	110262	VIII-35B
CC2	Cartridge Cover	110546	VIII-35B
CC3	Cartridge Cover	110606	VIII-35B
CC4	Cartridge Cover	110544	VIII-35B
CV1 & 2	Check Valve Return Filter	110864	VIII-33
CV3	Check Valve -Bypass	130339	VIII-35B
CV4	Manual Pump Check Valve	100451	VIII-27
CV5	Clamp Check Valve	110149	VIII-37
CV6	Check Valve - Vibrator	110296	VIII-13
CYL	Hydraulic Clamp Cylinder		
E	Diesel Engine	110375	VIII-26
F2	Return Filter (2)	810481	VIII-28
FS	Float Switch	100314	VIII-28
GA1-4	Pressure Gage	110600	VIII-29
GA5	Filter Indicator Gage	100775	VIII-28
HE	Heat Exchange	100551	VIII-26
M	Motor (2)	110328	VIII-11
MP	Manual Pump	100447	VIII-27
P1	Drive Pump (4)	110490	VIII-28
P2	Clamp Pump	110401	VIII-29
PS1	Clamp Pressure Switch	810033	VIII-37
PS3	Pressure Switch	100602	VIII-30
QD1	Vibrator Reverse Disconnect	110690	VIII-29
QD2	Vibrator Forward Disconnect	110692	VIII-30
QD3	Clamp Open Disconnect	100777	VIII-27
QD4	Clamp Close Disconnect	100245	VIII-27
QD5	Case Drain Disconnect	400095	VIII-27
RV1	Forward Relief Valve	100632	VIII-35B
RV2	Clamp Relief Valve	100898	VIII-37
RV3	Case Drain Relief Valve	100032	VIII-13
RV4	Reverse Relief Valve	100630	VIII-35B
RV5	Brake Valve Relief	110310	VIII-13
TS1 & 2	Temperature Switch	110640	VIII-19
V1	Clamp Control Valve	110147	VIII-37
V2	Control Valve	110147	VIII-35B
V3	Cooler Valve	110628	VIII-35B



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

OPERATING INSTRUCTIONS

VI. ELECTRIC CIRCUITRY (Reference:Electrical Schematic Pg VI-4)

A. STARTING DIESEL ENGINE

The engine batteries (EB1, EB2) provide 24-volt current to start the diesel engine. With the MAIN POWER (CB2) switch on, turning the ENGINE START switch to START energizes the start motor solenoid (SOL) and turns over the diesel engine. If fuel is available, the diesel engine will start.

B. STOPPING DIESEL ENGINE

Turning the ENGINE START switch to OFF de-energizes the fuel pump RACK SOLENOID which shuts off the fuel supply to the diesel engine. The engine stops.

C. SAFETY CONTROL SYSTEM

A system of safety controls shut off the fuel supply, thereby stopping the diesel engine in the event that any one of six malfunctions occur. The heart of the safety system is the SHUTDOWN RESET which is closed during normal operations (button in), thereby providing current to the fuel relay (R3). With the fuel relay energized, a set of contacts (R3A) close energizing the RACK SOLENOID and turning on the fuel supply. With the SHUTDOWN RESET closed (button in) power is provided to the vibrator start circuitry.

As mentioned above, the SHUTDOWN RESET is closed during normal operation. If the SHUTDOWN RESET is opened, the fuel relay (R3) is de-energized, contacts RA3 open, resulting in the RACK SOLENOID being de-energized thereby shutting off the fuel supply and stopping the diesel engine. The SHUTDOWN RESET opens when its timing delay coil (TD,C) is energized. The timing delay coil may be energized by any of the following devices.

1. Engine Oil Pressure Gage - if pressure is below 10 PSI (.7 Bar), the contacts of the gage will be closed providing current to energize the timing delay coil (TD,C) and to turn on the indicator light (L1). On start-up, the button on the SHUTDOWN RESET (on the control panel) must be held in until the oil pressure exceeds 30 PSI (2 Bar).
2. ENGINE WATER TEMPERATURE GAGE - If water temperature exceeds 210°F (99°C), the contacts of the gage will close energizing the timing delay coil (TD,C) and turning on the indicator light (L2).
3. Engine Overspeed Switch - if the engine overspeeds, the overspeed switch will close, energizing the timing delay coil (TD,C) and turning on indicator light (L3).



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

OPERATING INSTRUCTIONS

VI. ELECTRICAL CIRCUITRY

C. SAFETY CONTROL SYSTEM (CONTINUED)

4. Return Filter Switch - if the hydraulic return filter is clogged, the return filter switch (PS3) will close energizing the timing delay coil (TD,C) and turning on the indicator light(L4). The Return Filter Shutdown is disabled if Temperature Switch Contacts (TS1) are opened by oil temperature less than 100°F (38°C).
5. Hydraulic Oil Level Switch - if the hydraulic oil level is low, the hydraulic oil switch will close energizing the timing delay coil (TD,C) and turning on indicator light (L5).
6. Hydraulic Oil Temperature Gage - if the temperature of the hydraulic oil exceeds 160°F (71°C), the hydraulic oil temperature gage switch will close, energizing the timing delay coil (TD,C) and turning on indicator (L6).

A diode (D1-D6) on each malfunction switch limits the flow of direct current to prevent multiple lights coming on. Another diode (D8) prevents arcing in the malfunction switches.

Emergency Stop - When the diesel engine is running, pressing the EMERGENCY STOP button on the pendant, energize the coil on the SHUTDOWN RESET. The Shutdown Reset opens and the engine and vibrator are stopped.

D. CLOSING HYDRAULIC CLAMP

With the diesel engine running, turning the clamp switch (OPEN-CLOSE) on the control pendant to CLOSE energizes the close-clamp solenoid (CLOSE-SOL.). This operates the clamp control hydraulic valve and closes the clamp.

When the pressure in the close-clamp hydraulic circuit reaches 4500 PSI (310 Bar), the pressure switch (PS1) opens and de-energizes the CLOSE-CLAMP solenoid and turns on the CLAMP LIGHTS on the control pendant and control panel. If close-clamp pressure falls below 4200 PSI (290 Bar), the pressure switch closes and re-energizes the close-clamp solenoid to rebuild pressure. The CLAMP LIGHTS go out. When pressure returns to 4500 PSI (310 Bar), the pressure switch opens de-energizing the close-clamp solenoid and turns on the CLAMP LIGHTS.

E. OPENING HYDRAULIC CLAMP

With the diesel engine running, turning the clamp switch (OPEN-CLOSE) to OPEN energizes the open-clamp solenoid (OPEN SOL.). The clamp opens. Normally Closed Contacts (R1C) in the Start Relay (R1), prevent the operator from opening the clamp while the vibrator is running.



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

OPERATING INSTRUCTIONS

VI. ELECTRICAL CIRCUITRY

F. STARTING THE VIBRATOR

With the diesel engine running, pressing the START button on the control pendant energizes the start relay coil (R1). Start relay contacts (R1-A) close and keep the relay coil energized until the STOP button is depressed. A second set of start relay contacts (R1-B) close and energizes the FORWARD SOLENOID on the Control Valve. The Control Valve sends hydraulic oil to the vibrator motors. The motors start. A third set of contacts (R1-C) opens to prevent the OPEN SOLENOID being energized to open the hydraulic clamp while the vibrator is running.

G. STOPPING THE VIBRATOR

With the diesel engine running, pressing the STOP button on the control pendant de-energizes the start relay coil (R1). The start relay contacts (R1-B) open and de-energize the FORWARD SOLENOID. The Control Valve stops the flow of hydraulic oil to the vibrator motors. The motors stop. The start relay contacts (R1-C) close to allow the OPEN SOLENOID to be energized when the OPEN clamp button is turned to the OPEN position.

H. OTHER

The ammeter (AM) indicates charging amperes. The tachometer generator (TACH GEN) powers the tachometer (TACH) to indicate engine speed. The Hour meter(M1) indicates the engine operating hours.

Duplicate vibrator and clamp switches are located on the control pendant and on the control panel. Turning the LOCAL-REMOTE switch to LOCAL activates only the clamp and vibrator switches located on the control panel. Turning the LOCAL-REMOTE switch to REMOTE only permits operation of the clamp and vibrator from the control pendant. The EMERGENCY STOP button on the pendant is functional at all times.

Turning the Throttle switch to the FAST position will retract the electric throttle actuator (M) and increase engine speed (RPM). Turning the Throttle switch to the SLOW position will extend the electric throttle actuator (M) and decrease engine speed.

The 570 Power Unit may also be used to drive an ICE Auger or other Bi-directional Hydraulic Motors. By turning the VIBRO-AUGER switch to the AUGER position, the Clamp OPEN-CLOSE switch will become a FORWARD- REVERSE switch for the auger. The Vibrator START and STOP buttons will be disabled.

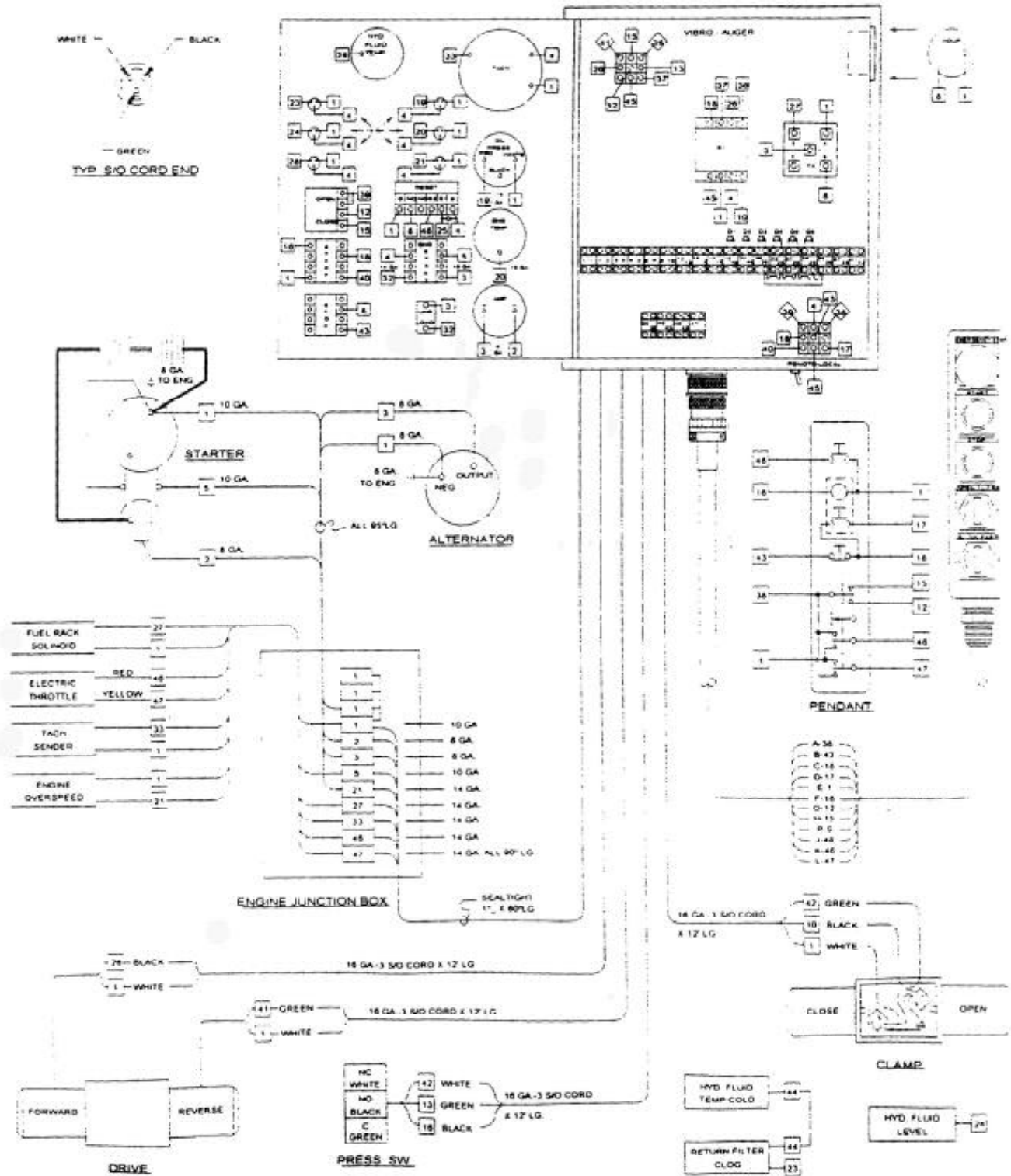


**MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR**

**OPERATING
INSTRUCTIONS**

VI. ELECTRICAL CIRCUITRY

ELECTRICAL LAYOUT



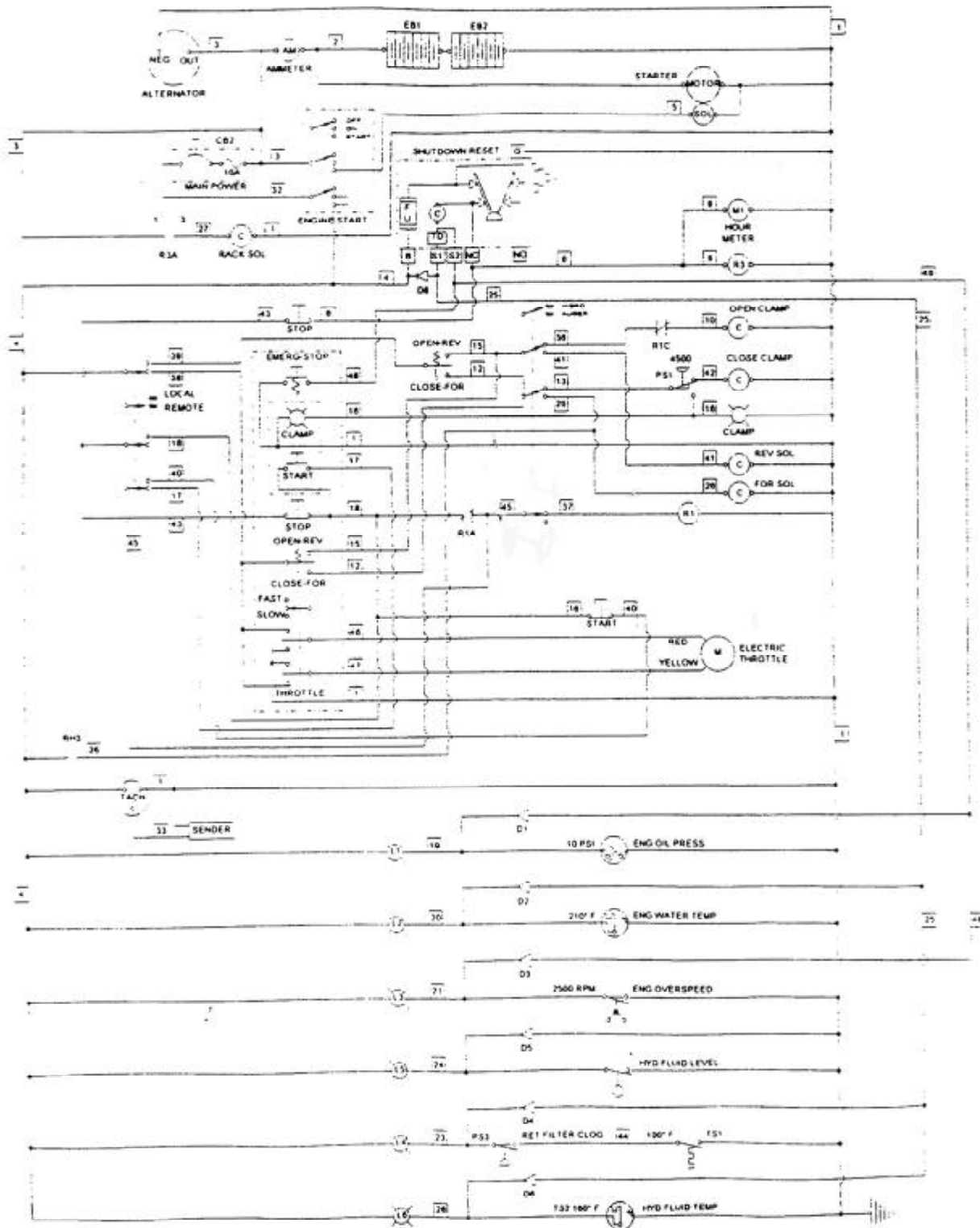


MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

OPERATING INSTRUCTIONS

VI. ELECTRICAL CIRCUITRY

ELECTRICAL SCHEMATIC





**MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR**

OPERATING INSTRUCTIONS

VI. ELECTRICAL CIRCUITRY

I. ELECTRICAL COMPONENTS LIST

Notation	Reference	Part Number	Page Ref.
ALTERNATOR	ALTERNATOR	See Cat.	Parts Book
AMMETER	AMMETER	110371	VIII-19
CB2	MAIN POWER SWITCH	400141	VIII-19
CLAMP LIGHT (2)	CLAMP LIGHT	110598	VIII-19 & 23
CLOSE SOL	CLOSE-CLAMP SOLENOID	110147	VIII-37
D1-D6, D8	DIODE	100413	VIII-19
EB1, EB2	ENGINE BATTERY	100529	VIII-27
ENG. OIL PRESS.	ENGINE OIL PRESSURE GAGE AND SWITCH	100329	VIII-19
ENG. START	ENGINE START SWITCH	110615	VIII-19
ENG. WATER TEMP.	ENGINE WATER TEMPERATURE GAGE AND SWITCH	110697	VIII-19
ENG. OVERSPEED	ENGINE OVERSPEED SHUT- DOWN SWITCH	110972	VIII-30
OIL LEVEL(FS) FOR SOLENOID	HYD OIL LEVEL SWITCH	100314	VIII-28
HOURMETER (M1)	FORWARD SOLENOID	810519	VIII-35
HYD. OIL TEMP	HOUR METER	100343	VIII-19
L1-L6	HYD OIL TEMPERATURE SWITCH GAGE (TS2)	110640	VIII-19
OPEN/CLOSE (2)	SHUTDOWN INDICATOR LIGHT	100355	VIII-19
OPEN SOL	CLAMP SWITCH (OPEN/CLOSE)	130155	VIII-19 & 23
PS1	OPEN-CLOSE SOLENOID	110147	VIII-37
R1	PRESSURE SWITCH	810033	VIII-37
R1-A,B,C	START RELAY COIL	110584	VIII-19
R3	START RELAY CONTACTS	110584	VIII-19
R3A	RACK SOL. RELAY COIL	110604	VIII-19
REMOTE-LOCAL	RACK SOL. RELAY CONTACTS	110604	VIII-19
RET FIL CLOG (PS3)	REMOTE-LOCAL SWITCH	140361	VIII-19
REV SOL.	RETURN FILTER CLOGGED SWITCH	100602	VIII-30
SHUTDOWN RESET	REVERSE SOLENOID	810519	VIII-35
START	ENGINE SAFETY SHUTDOWN	110456	VIII-19
STOP	START VIBRATOR BUTTON	110598	VIII-19 & 23
TACH	STOP VIBRATOR BUTTON	100363	VIII-19 & 23
SENDER	TACHOMETER	110650	VIII-19
VIBRO/AUGER	ENGINE TACH GENERATOR	100408	VIII-31
TS1	VIBRATOR / AUGER SWITCH	140361	VIII-19
	HYD OIL TEMP. SWITCH (TS1)	110590	VIII-29



**MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR**

PARTS LIST

VII. GENERAL DATA

A. ABBREVIATIONS

The abbreviations shown below are used throughout the parts lists and various other parts of the manual.

ASM.	Assembly
BHCS	Button Head Cap Screw
Cyl.	Cylinder
DC	Direct Current
FHCS	Flat Head Cap Screw
FLCS	Flanged Head Cap Screw
HC	High Collar
HHCS	Hex Head Cap Screw
HPP	Hex Head Pipe Plug
HSSS	Hex Socket Set Screw
Hyd.	Hydraulic
Lg	Long
mm	Millimeter
Mtg.	Mounting
NPT.	National Pipe Thread
PHMS	Phillips Head Machine Screw
P/N	Part Number
Qty.	Quantity
RHMS	Round Head Machine Screw
Sch.	Schedule
SHCS	Socket Head Cap Screw
SHPP	Socket Head Pipe Plug
SHSS	Socket Head Shoulder Screw (Allen)
S/N	Serial Number
Sol.	Solenoid

B. SCREWS AND BOLTS

1. Practically all connections on the unit are made with socket head (Allen) cap screws. These high-strength screws are available at most industrial supply houses.
2. Screws and bolts are designated in the PARTS LIST in abbreviated form. (Refer to sub-section A, above, for specific abbreviations). Listed below is a typical screw description: .50 - 13 UNC x 1.50 Lg SHCS

.50 = Diameter

13 UNC = Threads Per Inch

1.50 Lg = Length

SHCS = Screw Type Abbreviation

3. Some screws or bolts require a specific torque when replacing. For identification of these bolts and a more thorough understanding of torque, refer to page IV-10.



**MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR**

PARTS LIST

VII. GENERAL DATA

C. SERIAL NUMBER LOCATIONS

1. The following ICE vibratory units are serial numbered separately:
 - a. Vibrator
 - b. Power unit
 - c. Piling clamps
 - d. Caisson beams
 - e. 90 deg. clamp adapter

2. In addition to the serial number plate itself (on vibrators, power units and clamps), the serial number is stamped into each unit in one or more places as follows:
 - a. Vibrator stamped twice - once on top right side of suppressor housing, once on bottom lip of vibration case on right side of motors' side.
 - b. Power unit stamped twice - once on control panel side of unit at right corner of reservoir, once on sub-base inside door below hex-key rack.
 - c. Model 126 universal clamp is stamped three times - once between the cylinder and pile guide, once above the grease fitting, and once on the flange of the cylinder housing.
 - d. Model 127 Z-Pile clamp stamped three times - once on top of each cylinder, and once above the grease fitting.
 - e. Model 80 caisson clamp stamped twice - once by the lifting eye, once by the adjusting screw .
 - f. Caisson beam is stamped three times - once on top center, once in center of both sides of flange.
 - g. 90 deg. clamp plate stamped twice - once on top center, once on side.



**MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR**

PARTS LIST

VIII. ORDERING PARTS

A. PROCEDURE

1. When ordering parts, be sure to include the model and serial number of the unit or component. The serial number may be located by referring to SECTION VII, SERIAL NUMBER LOCATION. Confirm all telephone orders immediately to avoid duplicating shipment.
2. ORIGINAL EQUIPMENT; Where component serial numbers are given, these apply only to equipment and components originally furnished with the unit. Where equipment has been changed or upgraded these numbers may not be an adequate description.
3. SHIPMENT; Specify shipping address, phone number, billing address and method of shipment. UPS and air express shipments must have street address for delivery. All shipments will be made freight collect unless instructed otherwise.
4. SHORTAGES; Claims for shortages, damage or errors should be made immediately upon receipt of parts. No responsibility will be assumed for delay, damage or loss of material while in transit. Broken, damaged or lost material should be refused or a full description made of damage or loss to the carrier agent on the freight or express bill.
5. RETURN OF PARTS; If for any reason you desire to return parts to the factory or to any distributor from whom these parts were obtained, you must first secure permission to return the parts. Shipping instructions will be given along with this permission. A fifteen percent handling charge must be assessed against the returned shipment unless an error is made by the factory or by the distributor when filling your order.



**MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR**

PARTS LIST

VIII. ORDERING PARTS

B. FITTING DESCRIPTION KEY

FITT 2 L - 16 M 12 J 00 0 - 00L 0 0 0 1

<p>SELECTOR INDEX 2 - INCH FITTING 9 - METRIC FITTING</p> <p>CONFIGURATION OR SHAPE OF FITTING S - STRAIGHT FITTING L - 90 Deg. ELBOW V - 45 Deg. ELBOW T - TEE C - CAP P - PLUG U - UNION X - CROSS (FOURTH END FITT'G REQ'D)</p> <p>FIRST END SIZE * IN 1/16THS OF AN INCH (INDEX 2) IN MILLIMETERS (INDEX 9) SEE GENERAL SPECIFICATION SHEET FOR SEQUENCE OF ORDER</p> <p>FIRST END FITTING STYLE SEE FITTING STYLE SELECTOR CHART SC-1</p> <p>SECOND END SIZE IF APPLICABLE - SEE FIRST END SIZE</p> <p>SECOND END FITTING STYLE IF APPLICABLE - SEE FIRST END FITTING STYLE</p> <p>THIRD END SIZE IF APPLICABLE - SEE FIRST END SIZE</p> <p>THIRD END FITTING STYLE IF APPLICABLE - SEE FIRST END SIZE</p> <p>* EXCEPTIONS 90 = 10" 96 = 6" 92 = 12" 98 = 8" 94 = 14" 99 = NON CODE SIZE</p>	<p>MATERIAL 1 - CARBON STEEL 2 - BRASS 4 - STAINLESS STL 5 - AAR MAL IRON 6 - MALEABLE IRON 8 - FORGED STEEL</p> <p>SPECIAL NOTATIONS</p> <p>PRESSURE RATING 0 - NONE 1 - 125 LB. 3 - SCH 40 4 - SCH 80</p> <p>INSTALLATION AID OR STYLE OF HEAD 0 - NOT APPLICABLE H - REGULAR HEX Q - SQUARE HEAD (EXT.) R - SQUARE HEAD (INT.) S - HEX HEAD (INT SOCKET) T - HEX HEAD (EXT.)</p> <p>LENGTH CODE (ELBOWS & NIPPLES) __L - LONG (ELBOW) __X - EXTRA LONG (ELBOW) __C - CLOSE (NIPPLE)</p> <p>PIPE NIPPLES (LONG) ONLY IN DEC. INCHES FOR INDEX 2 050 = 5.0 INCHES 105 = 10.5 INCHES</p> <p>IN MILLIMETERS FOR INDEX 9 120 = 12.0 MILLIMETERS 084 = 8.4 MILLIMETERS</p> <p>FOURTH END SIZE & FITTING STYLE (CROSSES ONLY) SEE FIRST END FITTING SIZE OR END STYLE</p>
---	---



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST


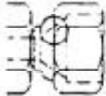





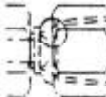
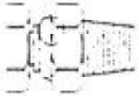
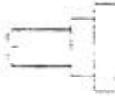

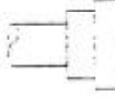
VIII. ORDERING PARTS

B. FITTING DESCRIPTION KEY (CONTINUED)

FITTING STYLE SELECTOR CHART

SC-1

FOR END FITTING STYLE SELECTION

M		JIC MALE 37 Deg. FLARE	J		JIC FEMALE 37 Deg. FLARE (& SWIVEL)
P		MALE PIPE NPT	Q		FEMALE PIPE NPTF
R		S.A.E. MALE O-RING (& ADJUSTABLE)	K		S.A.E. FEMALE O-RING
B		JIC MALE 37 Deg. FLARE BULKHEAD	N		FEMALE PIPE NPSM-SWIVEL
D		MALE PIPE NPT SWIVEL	F		SPLIT FLANGE 3000 PSI. CODE 61
S		B.S.P. MALE PIPE	H		SPLIT FLANGE 6000 PSI. CODE 62



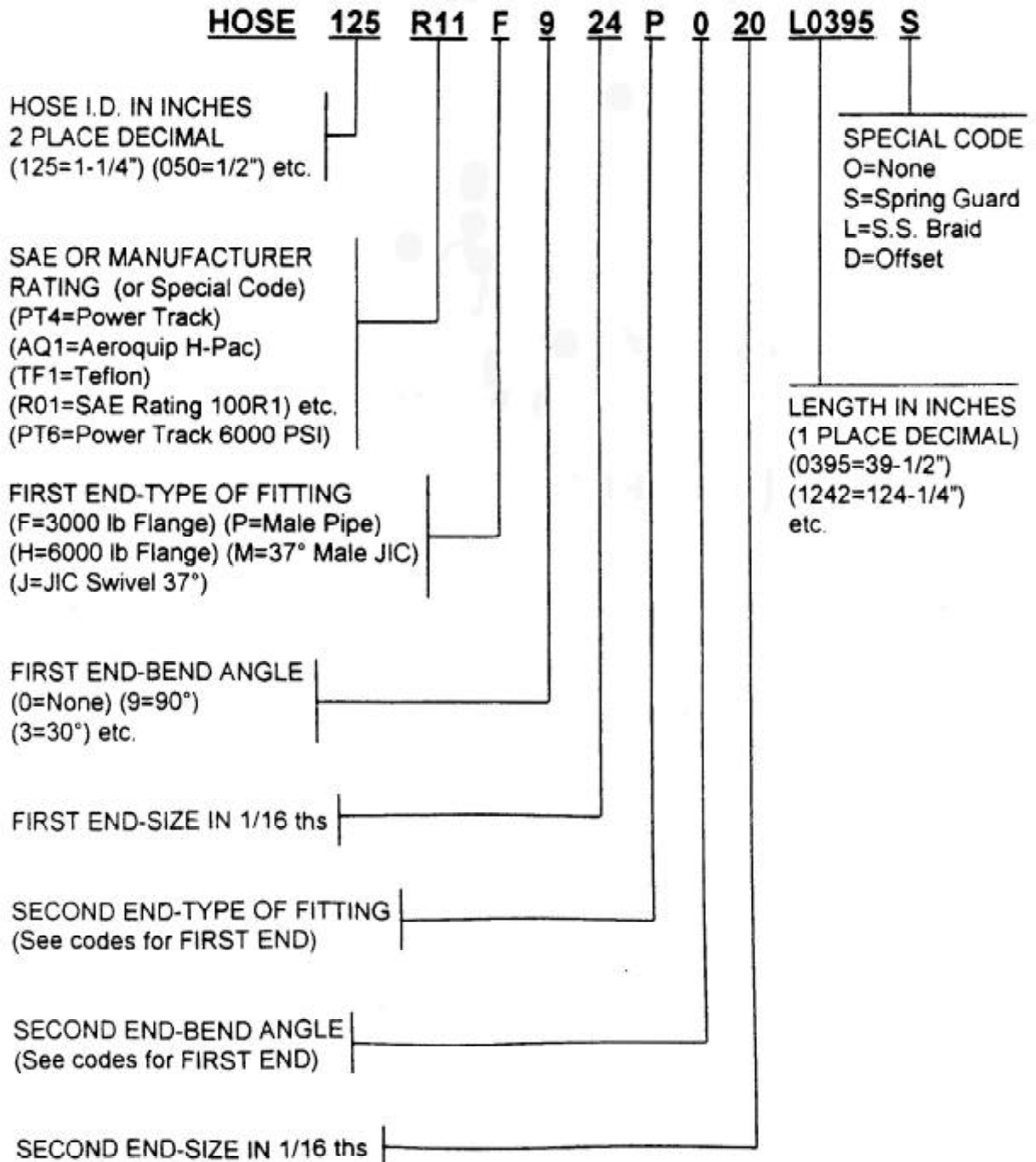
**MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR**

PARTS LIST

VIII. ORDERING PARTS

C. HOSE DESCRIPTION CODE

The HOSE DESCRIPTION CODE is a 24 digit number enabling easier and quicker identification whenever a hose replacement is desired. The key below explains the structure of the coded number in detail.





**MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR**

PARTS LIST

VIII. ORDERING PARTS

D. PARTS IDENTIFICATION

1. Parts lists and drawings are included on the following pages for the equipment components shown below:

a. VIBRATION SUPPRESSOR	800427	VIII-6
b. VIBRATION CASE	810649	VIII-10
c. DISTRIBUTION BLOCK	810019	VIII-12
d. HOSE ASSEMBLIES-INTERCONNECTING	800053	VIII-14
e. POWER UNIT - ENCLOSURE	810641	VIII-16
f. CONTROL BOX	810451	VIII-18
g. PENDANT ASM	800395	VIII-22
h. POWER UNIT - INTERNAL	800127	VIII-24
i. JUNCTION BOX	810145	VIII-32
j. RETURN FILTER ASM	810481	VIII-33
k. CONTROL MANIFOLD	810447	VIII-34
l. CLAMP MANIFOLD	810449	VIII-36
m. MODEL 126 UNIVERSAL CLAMP	800327	VIII-38
n. CLAMP EXTENSION-10FT.	800423	VIII-40
o. 90 DEG. ADAPTER	800049	VIII-41
p. CAISSON BEAM-7 FT.	800477	VIII-42
q. CAISSON BEAM-11 FT.	800479	VIII-42
r. MODEL 80 CAISSON CLAMP w/ WEDGE LOCK	800047	VIII-44
s. MODEL 80 CAISSON CLAMP w/ HYDRO LOCK	800413	VIII-46
t. HYDRO LOCK ASM	800399	VIII-48
u. MODEL 127 Z PILE CLAMP	800041	VIII-50
v. PENDANT EXTENSION CABLE	800059	VIII-53

2. The spare parts list SECTION VIII - RECOMMENDED SPARE PARTS contains spare parts which may be very useful in keeping down-time to a minimum, especially in remote or secluded job sites where unforeseen communication problems could cause delay of the delivery of an awaited part.

These RECOMMENDED SPARE PARTS may be ordered beforehand, individually or as a package group as shown in the PARTS LIST.

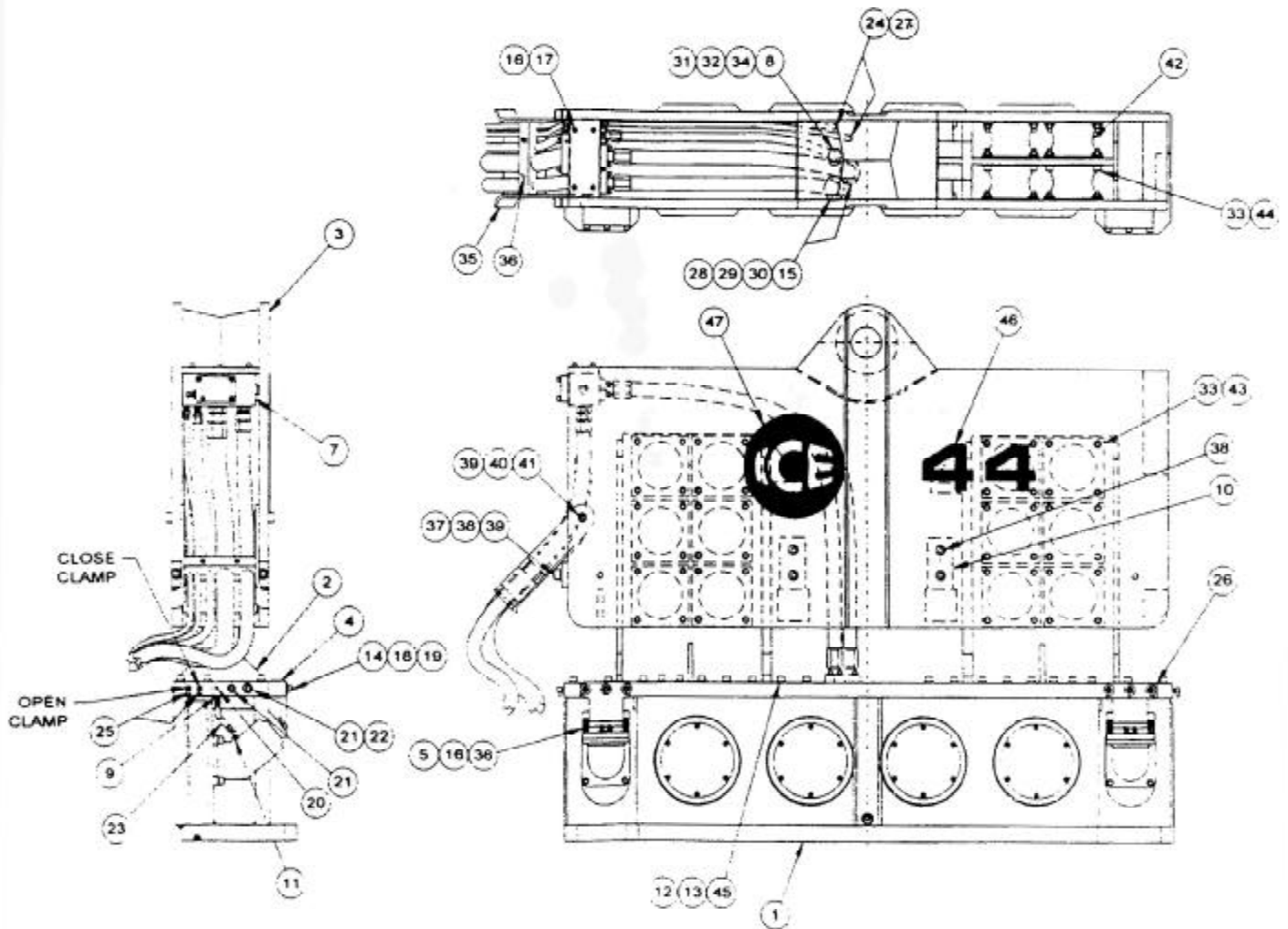


MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

VIBRATION SUPPRESSOR

800427





MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

VIBRATION SUPPRESSOR

800427

Item	Part Number	Qty.	Description
1	810649	1	44 Transmission Assembly
2	110362	1	44 Transmission Adapter
3	110360	1	44 Suppressor Housing
4	110364	2	44-50 Motor Manifold
5	110330	6	Retainer Plate
6	100814	1	Sealant
7	810019	1	Terminal Manifold
8	100051	4	.375-16 X 1.0 Lg SHCS Locwel
9	110630	2	FITT2S-08M06P000-000H001
10	110358	2	Stop Bars
11	300099	2	FITT2S-10R08M000-000H001
12	140111	44	.75-10 X 4.0 Lg SHCS Lock Washer
13	100069	44	.75 Lock Washer Medium
14	110308	6	.625-11UNC X 4.00Lg SHCS
15	140907	2	HOSE150PT6F024F024L0835C
16	100121	16	.5 Lock Washer Medium
17	100011	4	.5-13 X 2.0 Lg SHCS
18	130141	6	.625 Flat Washer
19	100007	6	.625 Lock Washer-Medium
20	400213	2	FITT2P-06P000000-000S007
21	100063	4	FITT2P-16P000000-000S007
22	110055	2	FITT2P-20P000000-000S007
23	100486	2	HOSE050R01J008J008L01450
24	400203	2	FITT2S-06M06P000-000H001
25	400227	4	FITT2L-06M06P000-0000001
26	100423	2	FITT2P-08P000000-000S007
27	140905	2	HOSE038R02J006J006L0835C
28	100596	4	#24 Split Flange Half
29	100119	8	.5-13 X 1.25 Lg SHCS Locwel
30	110119	2	2-225 O-Ring
31	100049	2	#12 Split Flange Half
32	140903	1	HOSE075PT4F012FO12L0835C
33	100782	96	.75-10 Flange Nut
34	100097	1	2-214 O-Ring 70 DURO
35	110356	1	Hose Chute And Clamp
36	400043	14	.5-13 X 2.25 Lg SHCS
37	110354	1	Hose Chute Support
38	100213	10	1.0-8 X 2.5 Lg SHCS Locwel
39	100209	4	1.0 Lock Washer Medium
40	140145	2	1.0-8 X 3.5 Lg SHCS



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

VIBRATION SUPPRESSOR (Continued)

800427

<u>Item</u>	<u>Part Number</u>	<u>Qty.</u>	<u>Description</u>
41	400051	2	1.0-8 Hex Nut
42	100796	16	Elastomer
43	400069	64	.75-10 X 2.0 Lg SHCS
44	100067	32	.75-10 X 2.5 Lg SHCS Locwel
45	100814	1	Sealant
46	110745	2	4 Logo
47	400277	1	ICE Logo Plate

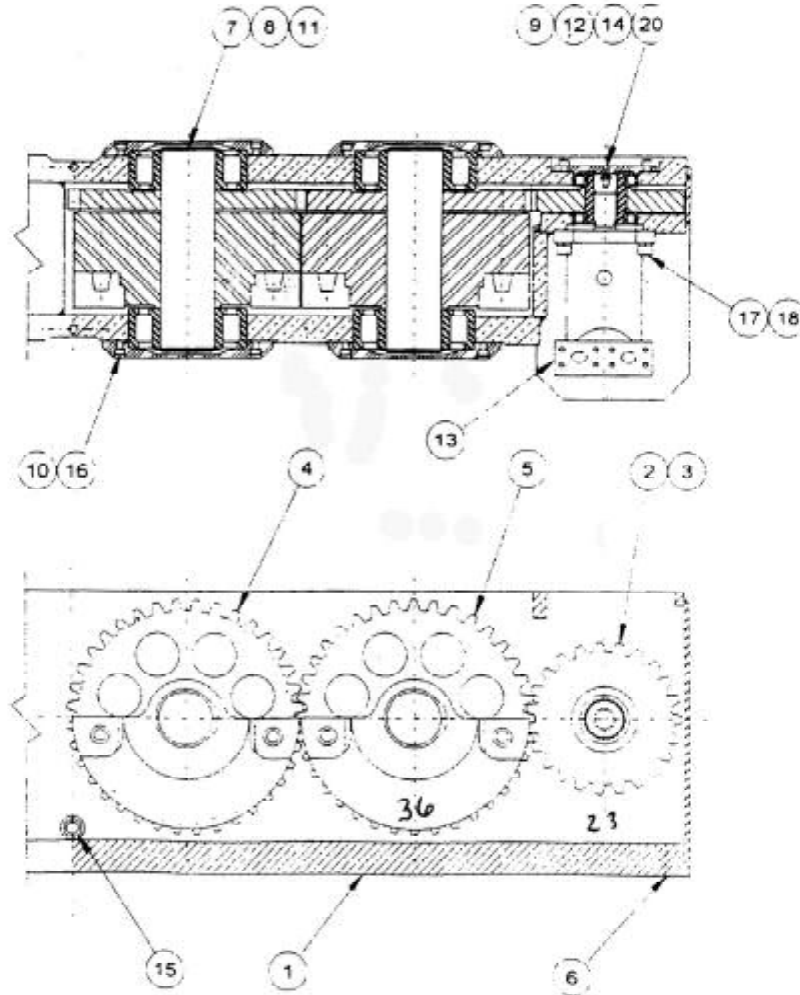


MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

VIBRATION CASE

810649





MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

VIBRATION CASE

810649

<u>Item</u>	<u>Part Number</u>	<u>Qty.</u>	<u>Description</u>
1	810647	1	44 Transmission Case Frame
2	110370	2	Pinion Shaft (46)
3	110376	2	Pinion Gear
4	810673	2	44 Eccentric Gear Assembly
5	810675	2	44 Eccentric Gear Assembly
6	100187	2	FITT2P-12P000000-000S0M7
7	110316	8	Retaining Ring
8	110372	4	Eccentric Shaft
9	110366	2	Bearing Housing
10	110368	8	Bearing Cover
11	110314	8	Eccentric Bearing
12	110312	4	Motor Bearing
13	110328	2	44-50 Drive Motor (M)
14	100822	2	Breather
15	100185	1	Sight Gauge
16	100119	56	.5-13 X 1.25 Lg SHCS Locwel
17	100067	8	.75-10 X 2.5 Lg SHCS Locwel
18	400727	8	.75 Hi-Collar Lock Washer
19	110444	3	Transmission Oil / Gal.
20	100662	2	Filter

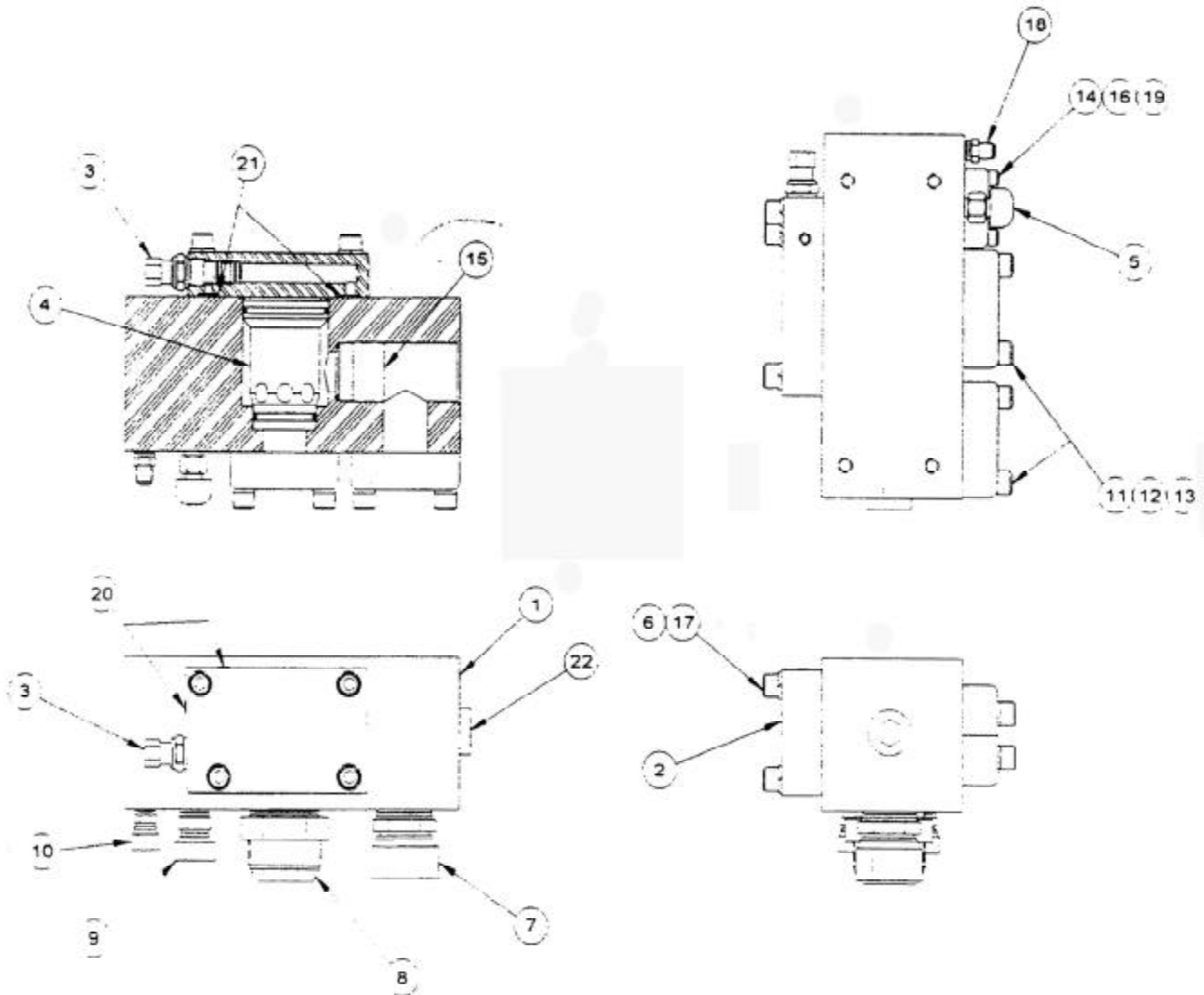


MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

TERMINAL BLOCK

810019





MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

TERMINAL BLOCK

810019

Item	Part Number	Qty.	Description
1	110352	1	Terminal Manifold
2	110340	1	Manifold Cap
3	110310	1	Brake Valve Relief (RV5)
4	110622	1	Cartridge B (BV)
5	100032	1	Relief Valve (RV3)
6	100121	4	.5 Lock Washer Medium
7	110115	1	FITT2S-24P24N000-000H001
8	110269	1	FITT2S-32M24P000-000H001
9	100043	1	FITT2S-12P12N000-000H001
10	100041	2	FITT2S-06PO6N000-000H001
11	100596	4	#24 Split Flange Half
12	100119	8	.5-13 X 1.25 Lg SHCS Locwel
13	110119	2	2-225 O-Ring
14	100049	2	#12 Split Flange Half
15	110296	1	Check Valve (CV6)
16	100097	1	2-214 O-Ring 70 DURO
17	400043	4	.5-13 x 2.25 Lg SHCS
18	400203	2	FITT2S-06M06P000-000H001
19	100051	4	.375-16 X 1.0 Lg SHCS Locwel
20	100646	2	FITT2P-02P000000-000S007
21	140255	2	2-113 O-Ring
22	110298	1	FITT2P-24R000000-000S001

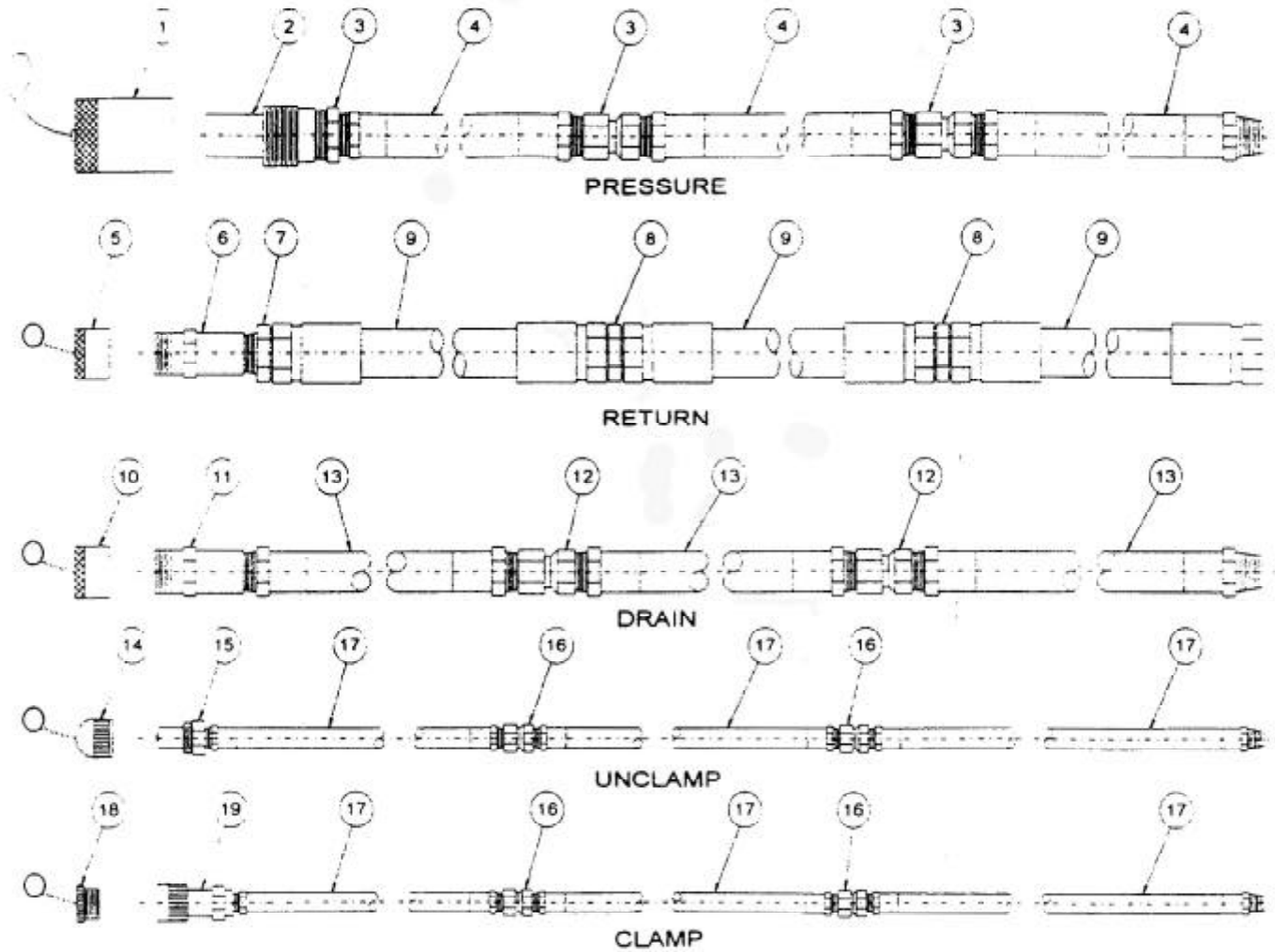


MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

HOSE ASSEMBLIES - INTERCONNECTING

800053





MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

HOSE ASSEMBLIES - INTERCONNECTING

800053

<u>Item</u>	<u>Part Number</u>	<u>Qty.</u>	<u>Description</u>
1	110955	1	Dust Cap (1-1/2)
2	110690	1	Male Disconnect (1-1/2)
3	110139	2	FITT2S-24Q24N000-000H001
4	110141	3	HOSE150PT4P024P024L60000
5	110957	1	Dust Plug (1-1/2)
6	110692	1	Female Disconnect (1-1/2)
7	110269	1	FITT2S-32M24P000-000H001
8	110271	2	FITT2S-32M32M000-000H001
9	110970	3	HOSE200R02J032J032L60000
10	400253	1	Dust Cap (3/4)
11	400251	1	Male Disconnect (3/4)
12	100243	2	FITT2S-12Q12N000-000H001
13	100241	3	HOSE075R02P012P012L62000
14	100257	1	Dust Cap (3/8)
15	100245	1	Male Disconnect (3/8)
16	100249	4	FITT2S-06Q06N000-000H001
17	100247	6	HOSE038R02P006P006L62000
18	100737	1	Dust Plug (3/8)
19	100777	1	Female Disconnect (3/8)
	130243	20	Rubber Tie Down

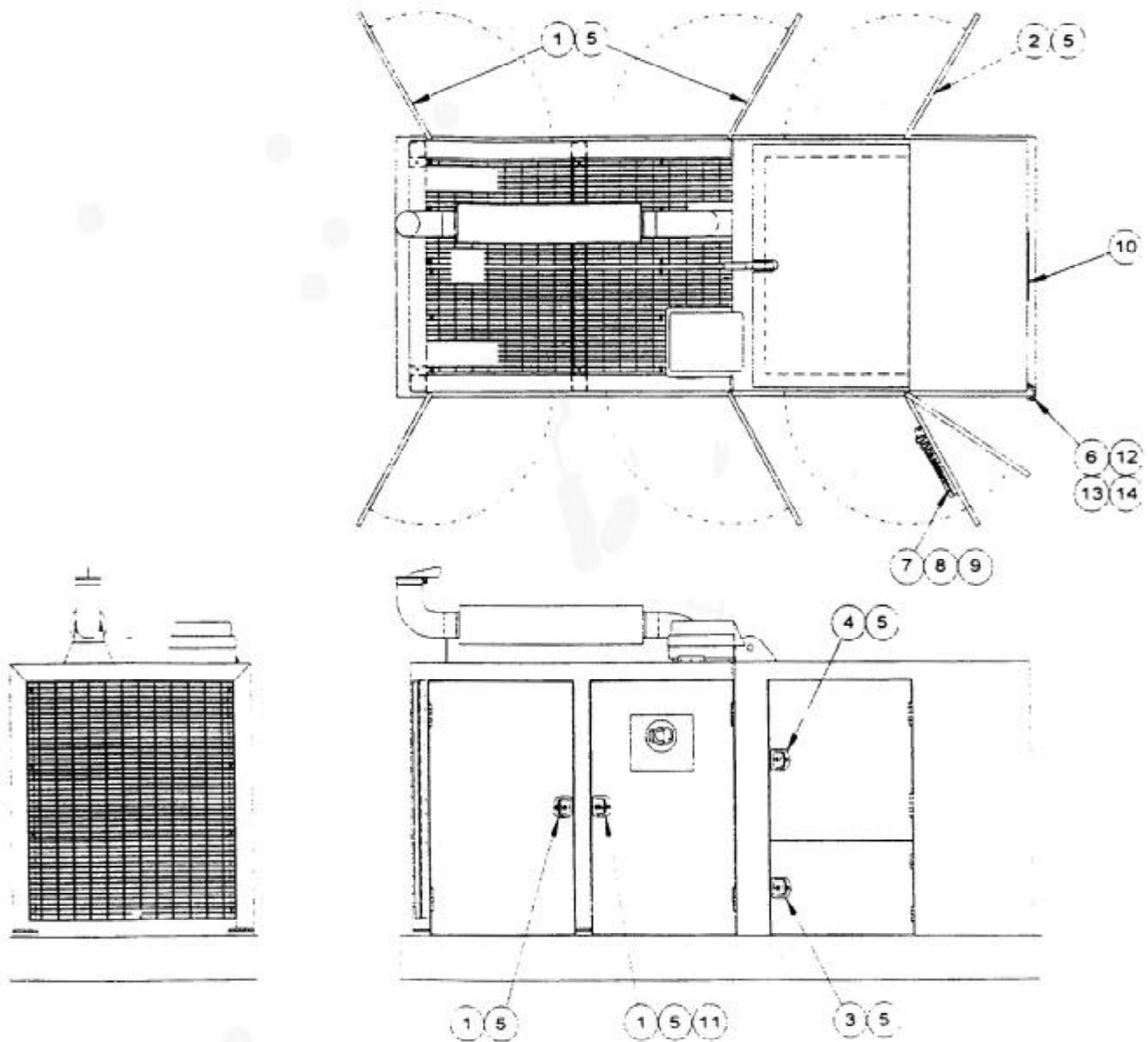


MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

POWER UNIT ENCLOSURE

810641





**MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR**

PARTS LIST

POWER UNIT ENCLOSURE

810641

<u>Item</u>	<u>Part Number</u>	<u>Qty.</u>	<u>Description</u>
1	110424	4	Cover Door
2	110422	1	Cover Door
3	110420	1	Cover Door
4	110418	1	Cover Door
5	100834	14	5" Door Hinge
6	300671	2	#10 Flat Washer
7	100600	1	Hex Key Rack
8	810045	1	Hex Key Group
9	100651	1	24 V Test Light
10	400277	1	ICE Logo Plate
11	100290	2	ICE Decal
12	110221	1	Door Hold Down
13	110861	2	10-32 x .50 Lg PHMS
14	400161	2	#10 Lock Washer



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

CONTROL BOX ASSEMBLY

810451

Item	Part Number	Qty.	Description
1	110652	1	Control Box
2	110650	1	Tachometer (570)
3	100329	1	Oil Pressure Gauge
4	110697	1	Water Temperature Gage
5	110371	1	Ammeter
6	110640	1	Hydraulic Temp. Gauge (TS-2)
7	400141	1	Circuit Breaker 10 A (CB-2)
8	100331	2	#6-32 X .25 Lg BHCS
9	100343	1	Hour Meter (M1)
10	110615	1	Start Switch
11	110456	1	Murphy Switch
12	100355	6	Dialight, Test
13	130305	6	Warning Light Bulb
14	100363	1	Pushbutton
15	100365	1	Rubber Dust Cap-Red
16	110598	1	Start Button (w/ Clamp Light)
17	110594	1	Guard
18	110596	1	Lens
19	110569	17	Terminal Mtg. Channel / In
20	110861	1	10-32 X .5 Lg PHMS
21	400163	11	#10-32 Hex Nut
22	400161	11	#10 Lock Washer
23	110567	22	Terminal Block
24	100413	7	Diode
25	140361	2	Toggle Switch
26	100572	1	Toggle Switch Bracket
27	140281	4	Relay Mtg. Track / In.
28	110584	1	Relay (R1)
29	110415	11	.250 Oil Pressure Tube / Ft
30	100333	1	FITT2L-04E02Q000-000H002
31	110604	1	Relay (R3)
32	130155	1	Switch
33	810455	1	570C Label Group
34	110763	1	Female Amphenol Insert
35	100397	1	Amphenol Receptacle
36	110754	4	#6-32 X .375 Lg RHMS
37	100853	4	90° S/O Comp. Fitting
38	110843	4	.5 Lock Nut
39	110841	4	.5 Plastic Bushing
40	110693	11	1" 90° Comp. Fitting



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

CONTROL BOX ASSEMBLY

810451

<u>Item</u>	<u>Part Number</u>	<u>Qty.</u>	<u>Description</u>
41	110839	1	1" Plastic Bushing
42	110696	4	#6 Lock Washer
43	110694	4	#6-32 Hex Nut
44	800395	1	570-950 Pendant Asm.
45	110649	7	#10-32 X .375 Lg PHMS
	300671	2	#10 Flat Washer
	140345	1	Channel Bracket

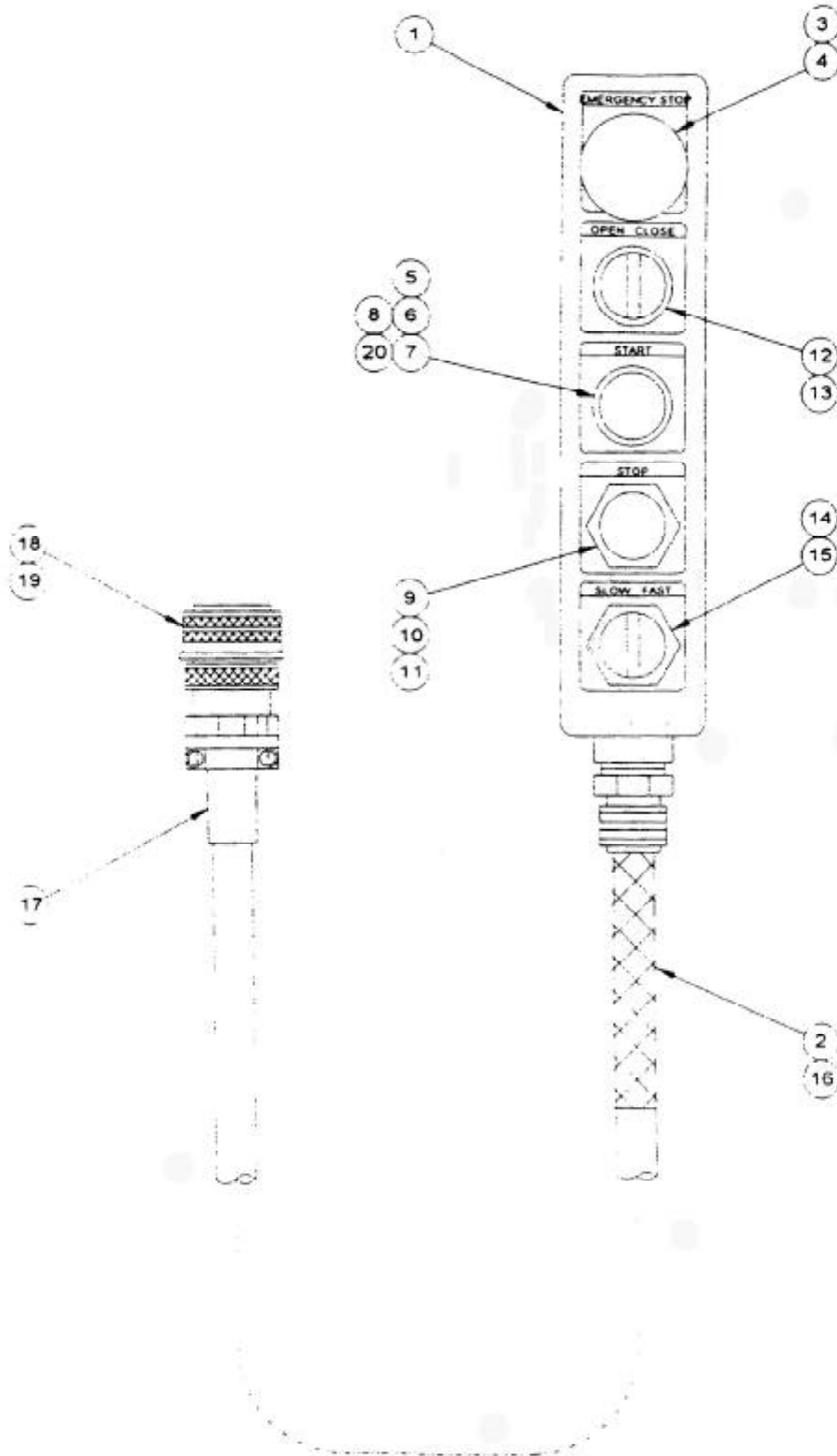


MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

570-950 PENDANT ASSEMBLY

800395





MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

570-950 PENDANT ASSEMBLY

800395

<u>Item</u>	<u>Part Number</u>	<u>Qty.</u>	<u>Description</u>
1	130505	1	Pendant Box
2	110603	1	1.0 Strain Relief
3	130507	1	Emergency Stop Button
4	130509	1	Emergency Stop Label
5	110598	1	Start Button (w/ Clamp Light)
6	110594	1	Guard
7	110596	1	Lens
8	100407	1	Start Nameplate
9	100363	1	Pushbutton
10	100405	1	Stop Nameplate
11	100365	1	Rubber Dust Cap-Red
12	130155	1	Switch
13	100401	1	Open / Close Nameplate
14	100566	1	Switch
15	100562	1	Slow-Fast Nameplate
16	100560	50	Pendant Cable / Ft
17	100375	1	Strain Relief-Amphenol
18	110761	1	Male Amphenol Insert-Plug
19	100395	1	Amphenol Plug
20	130305	1	Warning Light Bulb

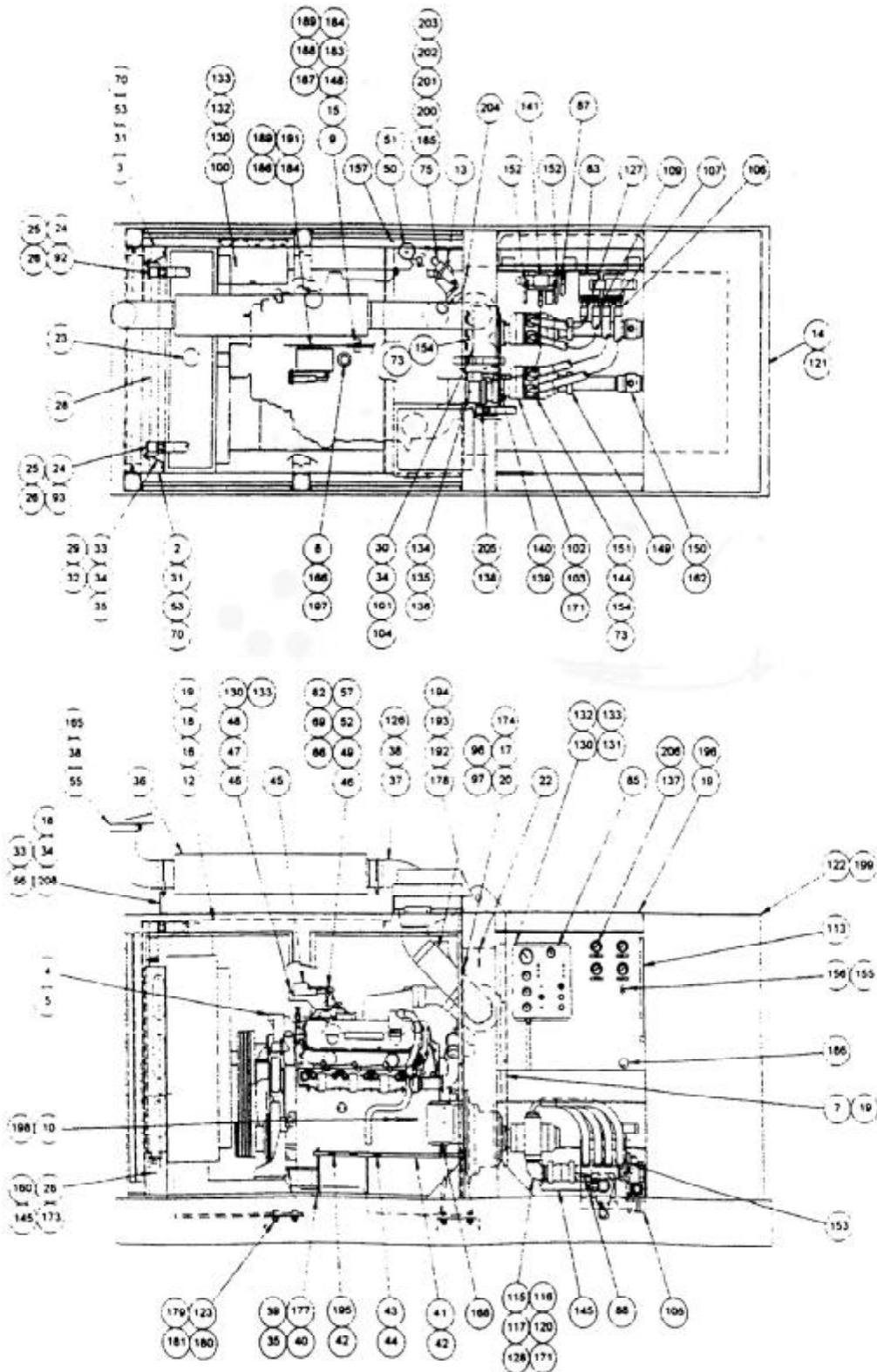


MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

POWER UNIT-INTERNAL (side and top views)

800127



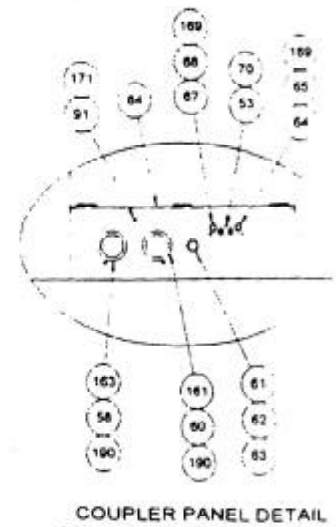
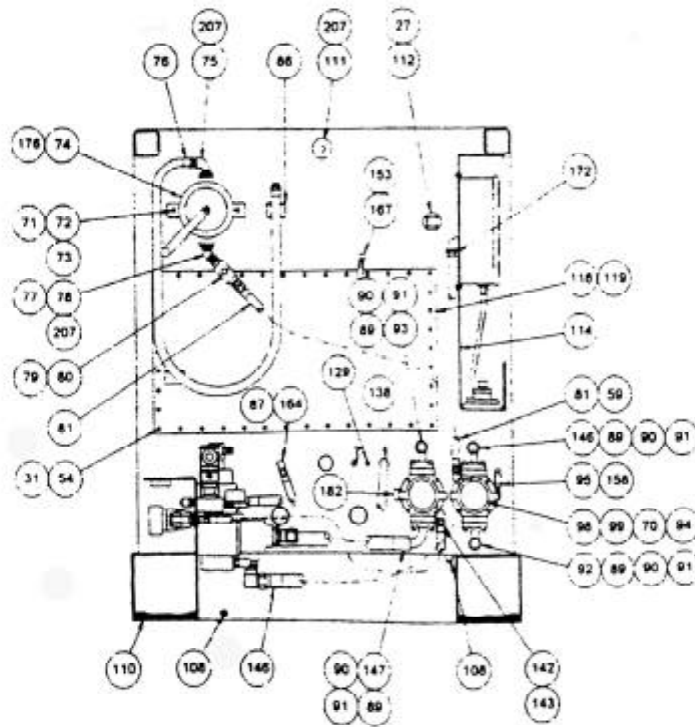
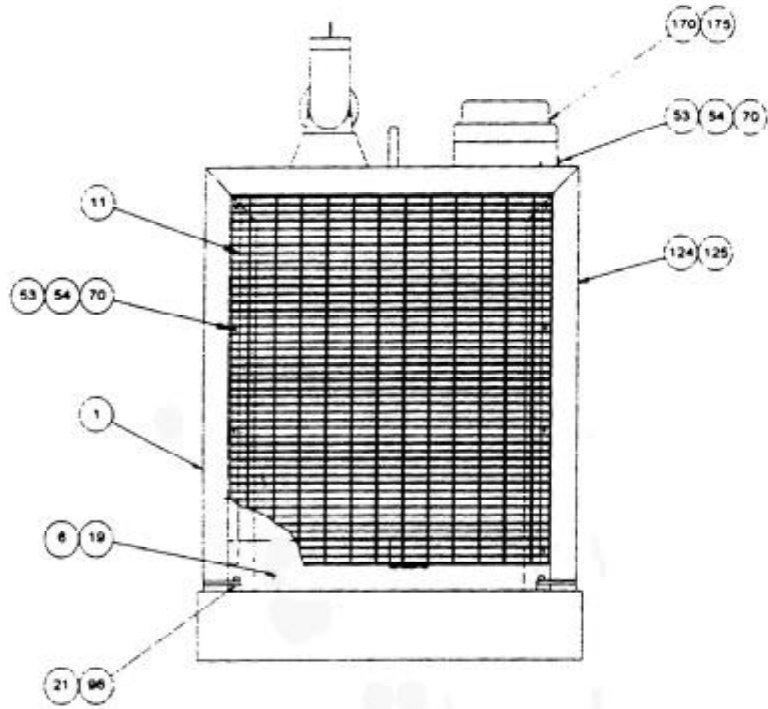


MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

POWER UNIT-INTERNAL
(end view and coupler panel)

800127





MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

POWER UNIT-INTERNAL

800127

Item	Part Number	Qty.	Description
1	810639	1	Unit Cover Frame Asm.
2	110400	1	Left Air Baffle
3	110402	1	Right Air Baffle
4	110375	1	Diesel Engine (E)
5	400247	44	Engine Oil/Quart
6	110398	1	Bottom Air Baffle
7	110405	1	Exhaust Shield
8	110447	1	Tack Drive Adapter
9	400161	2	#10 Lock Washer
10	110369	1	FITT2S-06P04Q000-000H001
11	110442	1	Intake Grill
12	110388	1	Right Roof Grating
13	110203	1	FITT2S-04M04P000-000H001
14	810641	1	570E P.U. Enclosure
15	110647	1	Throttle Bracket
16	110386	1	Left Roof Grating
17	100273	4	.625-11 Hex Nut
18	100398	10	Saddle Clip
19	110830	35	.25 X 2 in. Hex Tex Screw
20	110510	1	Exhaust Adapter
21	100575	6	.625-11 x 1.25 Lg SHCS
22	110655	1	Cable Bracket
23	100726	15	Antifreeze/Gal
24	110443	2	FITT2L-24M24Q000-0000001
25	110437	2	FITT2S-24P24P000-0550301
26	100547	3	FITT2S-32P24Q000-000H306
27	110564	4	.25-20 x 2.25 Lg RHMS
28	100551	1	Heat Exchanger (HE)
29	110297	2	Oil Cooler Bracket
30	100648	8	.375-16 X.875 Lg SHCS
31	400151	50	.375 Flat Washer
32	100105	10	.312-18 X 1.0 Lg SHCS Locwel
33	100289	10	.312-18 Hex Nut
34	100287	20	.312 Lock Washer
35	100293	22	.312 Flat Washer
36	110504	1	Muffler
37	110346	1	Exhaust Elbow (6"x90)
38	100297	4	Exhaust Pipe Clamp
39	400231	2	Hold Down Stud
40	100831	2	.312 Wing Nut



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

POWER UNIT-INTERNAL

800127

Item	Part Number	Qty.	Description
41	810653	1	Dual Battery Hold Down
42	100529	2	Battery
43	110390	1	2/0 x 14"Lg Jumper Cable
44	110755	1	Battery Cable-15
45	110460	1	Electric Actuator(24V)
46	100422	3	.25-20 UNC Esna Nut
47	110454	1	Electric Throttle Bracket
48	110163	1	.25-20 X 3.5 Lg SHCS
49	110448	1	Adjustable Link
50	100417	1	FITT2C48Q000000-0000306
51	100419	1	Petcock
52	110827	1	10-32 x .75 BHCS S.S.
53	400149	24	.375 Lock Washer
54	100535	55	.375 -16 Hex Nut
55	110506	1	Muffler Outlet Elbow
56	110342	1	Muffler Support
57	400163	1	#10-32 Hex Nut
58	110957	1	1.5 Dust Plug
59	110641	1	FITT2V-12M08P000-0000001
60	110955	1	1.5 Dust Cap
61	100387	1	FITT2S-12P12B000-000H001
62	400095	1	.75 Female Disconnect (QD5)
63	400121	1	.75 Dust Plug
64	100245	1	.375 Male Disconnect (QD4)
65	100257	1	.375 Dust Cap
66	810617	1	Modified Throttle Arm
67	100777	1	.375 Female Disconnect (QD3)
68	100737	1	.375 Dust Plug
69	100631	1	.25-20 X 2.0 Lg SHCS
70	100051	32	.375-16 X 1.0 Lg SHCS Locwel
71	100439	2	.437-X1.75 Lg SHCS
72	400153	2	.437 Flat Washer
73	100443	30	.437 Lock Washer
74	100447	1	Hand Pump (MP)
75	110377	2	FITT2L-16P16Q000-0000306
76	400215	1	HOSE100R01P016P016L08400
77	110385	1	FITT2V-16P16Q000-0000306
78	100449	1	FITT2S-16P16P000-000H001
79	100451	1	Check Valve (CV4)
80	300119	1	FITT2S-16P12M000-000H001



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

POWER UNIT-INTERNAL

800127

Item	Part Number	Qty.	Description
81	100941	1	HOSE075R01J012J012L04400
82	100595	1	.25-20 X 1.25 Lg SHCS
83	810447	1	570D Control Manifold Asm.
84	110406	1	Coupler Panel
85	810451	1	570D Control Box Assembly
86	110379	2	Hose Bracket
87	130201	1	HOSE075R01J012J012L04000
88	130205	1	HOSE019R01J004J004L09000
89	100596	8	#24 Split Flange Half
90	110119	4	2-225 O-Ring
91	100119	19	.5-13 X 1.25 Lg SHCS Locwel
92	110467	1	HOSE150R01J024F924L16600
93	110469	1	HOSE150R01J024F924L14300
94	110511	8	Seal Washer
95	100775	1	Visual Indicator(GA-5)
96	100007	10	.625 Lock Washer-Medium
97	110225	4	.625-11 X 1.5 Lg BHCS
98	810481	2	Filter Assembly (F2)
99	810117	4	K10 Element Assembly
100	100558	1	Tool Box
101	110488	1	Double Pump Drive Adapter
102	110490	2	570D Drive Pump (P1)
103	100614	8	.5-13 UNC x 1.50 Lg HHCS
104	100735	2	Transmission Oil/Gal
105	110680	1	HOSE019RO1J004J004L40000
106	110474	1	HOSE100PT4F016F920L04350
107	110476	1	HOSE100PT4F016F920L04100
108	100423	3	FITT2P-08P000000-000S007
109	110478	1	HOSE100PT4F016F920L04000 (AC)
110	100725	55	Diesel Fuel/Gal
111	100455	1	Breather
112	100314	1	Float Switch (FS)
113	110355	1	Level Gauge
114	110408	1	Control Box
115	100946	2	MFP Flange
116	400379	2	2-232 O-Ring
117	100011	8	.5-13 X 2.0 Lg SHCS
118	110289	1	Reservoir Cover Plate
119	110365	1	Cover Gasket
120	100962	2	FITT2L-40P40Q000-0000306



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

POWER UNIT - INTERNAL

800127

Item	Part Number	Qty.	Description
121	810143	1	570E Fuel Subbase Asm.
122	110287	1	Reservoir (570E)
123	400069	8	.75-10 x 2.0 Lg SHCS
126	110348	1	Exhaust Elbow (6"x45)
127	110480	1	HOSE100PT4F016F920L03900
128	130119	2	FITT2S-40P000000-0450301
129	110590	1	Hydraulic Temperature Switch
130	100557	8	.25-20 x .75 Lg SHCS
131	100598	4	.25-20 Hex Nut
132	100597	6	.25 Flat Washer
133	100559	4	.25 Lock Washer
134	110401	1	Clamp Pump (P2)
135	100513	2	.5-13 X 1.5 Lg SHCS
136	100027	2	.5 Hi-Collar Lock Washer
137	110600	4	0-6000 PSI Gage (GA-1-4)
138	110831	1	HOSE100R01P016J016L07000
139	100787	1	FITT2L-08M08R000-000H001
140	110470	1	HOSE050PT4J008J008L03500
141	810449	1	570C Clamp Manifold Assembly
142	300481	1	FITT2L-12M08P000-0000001
143	110019	1	HOSE075R01J012J012L04800
144	100037	4	2-222 O-Ring 70 DURO
145	110586	1	HOSE150R01J024J024L12900
146	110780	1	HOSE150R01J024F924L04900
147	110588	1	HOSE150R01F924J024L02150
148	110676	2	Cotter Pin .093 x 1.0 Lg
149	130139	2	2.5 Flexible Coupling
150	400117	2	Stop Cock
151	100045	8	#20 Split Flange Half
152	130207	2	HOSE019R01J004J004L10000
153	100228	1	HOSE038R02J006J006L0610S
154	100462	28	.437-14 UNC x 1.25 Lg HHCS
155	110479	1	Throttle Clevis
156	110417	1	Engine Throttle
157	120523	2	Fuel Base Magnet
158	100838	1	FITT2L-02P04Q000-00L0001
159	110909	1	.75 X 15 Lg Pipe SCH40
160	100588	1	FITT2L-24M24P000-0000001
161	110690	1	1.5 Male Disconnect (QD1)
162	110464	2	FITT2S-40P000000-1400301



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

POWER UNIT - INTERNAL

800127

Item	Part Number	Qty.	Description
163	110692	1	1.5 Female Disconnect (QD2)
164	100489	1	FITT2L-12M12P000-0000001
165	110695	1	Rain Cap
166	110631	1	2-117 O-Ring 90 DURO Poly
167	140581	1	FITT2L-06M04P000-0000001
168	810145	1	570 Engine Junction Box
169	110794	2	FITT2S-06P06P000-000H001
170	110421	1	Air Cleaner Cover
171	100121	19	.5 Lock Washer Medium
172	110231	4	S/O Cord 12' Lg
173	130243	1	Rubber Tie Down
174	110753	1	Exhaust Gasket
175	110423	1	Air Cleaner Element
176	130091	1	Pump Mounting Bracket
177	110767	2	Hold Down Block
178	110410	1	Air Intake Elbow (45°)
179	100589	8	.75 Flat Washer
180	100069	8	.75 Lock Washer Medium
181	100587	8	.75-10 Hex Nut
182	100602	1	Pressure Switch (PS-3)
183	110861	2	10-32 x .5 Lg PHMS
184	100429	2	Throttle Cable Seal
185	110819	1	Suction Filter Tube
186	100345	1	Engine Stop Cable
187	110960	1	Shim
188	110962	1	Clamp
189	110964	2	Pivot
190	110392	2	FITT2S-24R24P000-000H001
191	110966	1	Shut-Down Arm
192	110427	1	Air Intake Tube/Ft.
193	110429	1	Air Intake Elbow
194	110431	4	6" Band Clamp
195	100537	1	Battery Cable-24"
196	110416	1	Top Cover
197	110972	1	Over Speed Switch
198	110871	1	FITT2V-04P04E000-000H002
199	140415	385	Hydraulic Oil/Gal
200	120423	1	Water Separator
201	120425	1	FITT2S-16P16P000-1200301
202	100715	1	FITT2S-16P06Q000-000H001



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

POWER UNIT - INTERNAL

800127

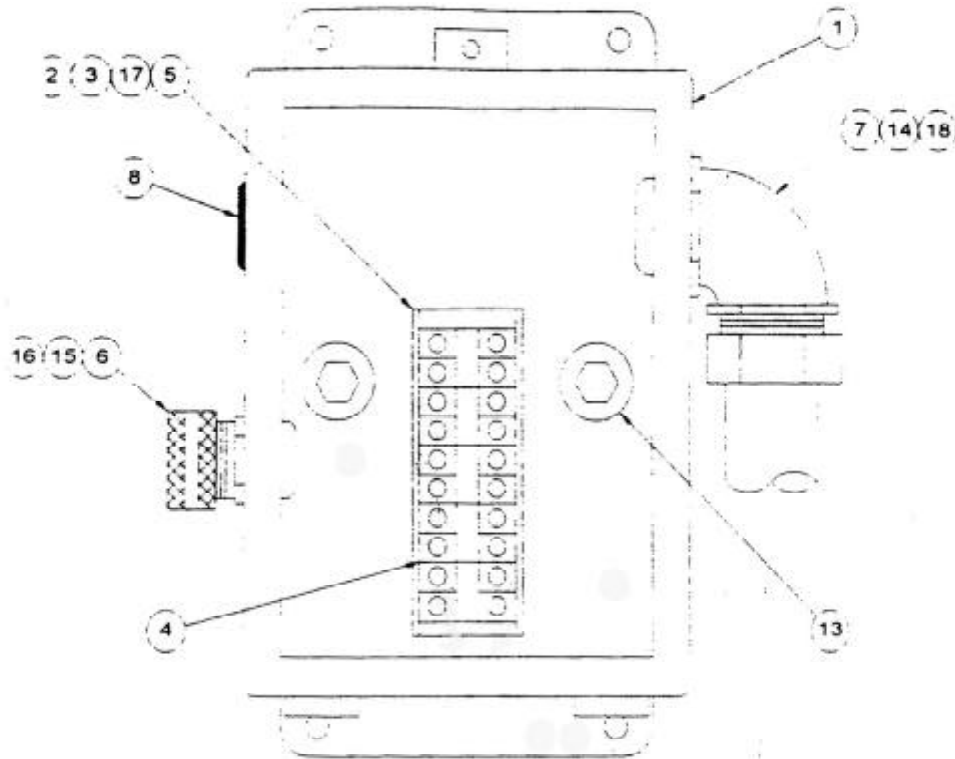
<u>Item</u>	<u>Part Number</u>	<u>Qty.</u>	<u>Description</u>
203	400227	1	FITT2L-06M06P000-0000001
204	100408	1	Magnetic Pick-Up(300-570)
205	100783	1	FITT2L-16M16R000-000H001
206	100321	4	FITT2L-04M04Q000-0000001
207	110089	2	FITT2S-20P16Q000-000H001
208	100396	2	.312-18 X 1.50 Lg SHCS



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

810145



Item	Part Number	Qty.	Description
1	110699	1	Junction Box
2	400161	2	#10 Lock Washer
3	400163	2	10-32 Hex Nut
4	110567	5	Terminal Block
5	110569	1	Terminal Mounting Channel
6	100855	1	Straight Wire Connector
7	110693	1	90° Connector
8	110701	1	Grommet
13	140227	2	.625-11 X 2.00 SHCS
14	110839	1	Plastic Bushing (1.0)
15	110843	1	Lock Nut (.5)
16	110841	1	Plastic Bushing (.5)
17	110649	2	10-32 x .375 Lg PHMS
18	110845	1	Lock Nut (1.0)

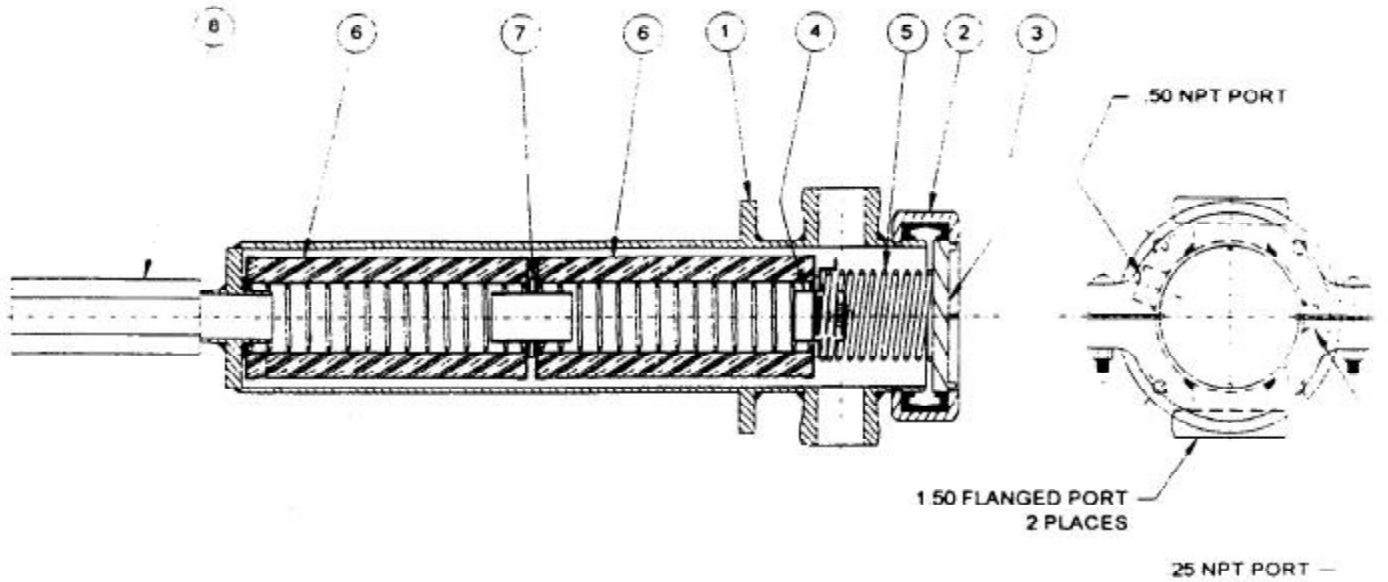


MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

RETURN FILTER ASSEMBLY

810481



Item	Part Number	Qty.	Description
1	810483	1	Filter Housing Assembly
2	110578	1	Clamp
3	110576	1	Plug
4	110492	1	By-Pass Valve Assembly
5	110572	1	Spring
6	810117	2	K10 Element Assembly
7	110570	1	Element Connector
8	110864	1	Discharge Valve
9	110864	1	FITT2S24P20Q000-000H001

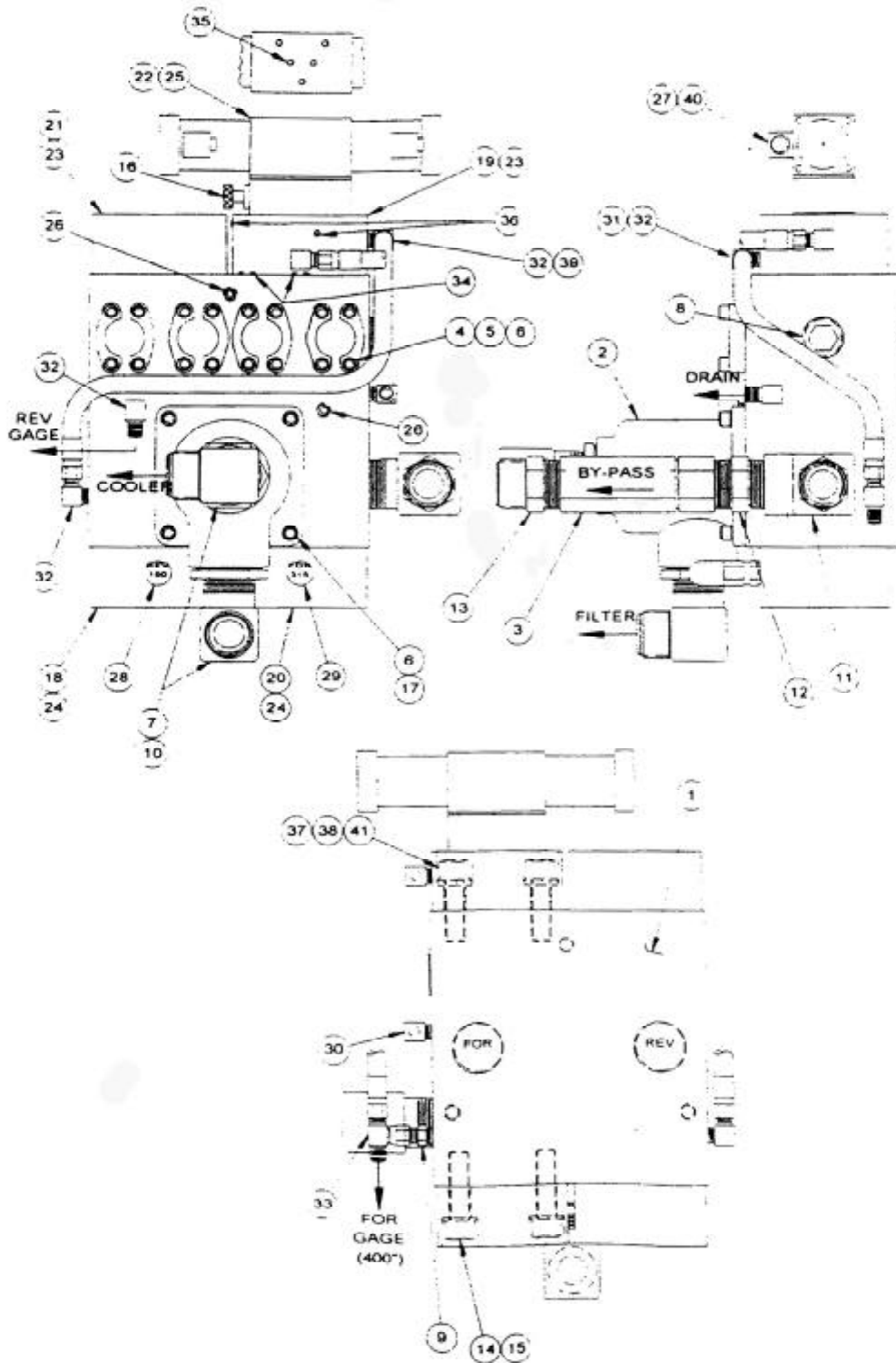


MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

CONTROL MANIFOLD ASSEMBLY
TO SERIAL NUMBER 174178

810447





MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

CONTROL MANIFOLD ASSEMBLY
TO SERIAL NUMBER 174178

810447

Item	Part Number	Qty.	Description
1	110516	1	Manifold Block
2	110628	1	Cooler Valve (V-3)
3	130339	1	Check Valve (CV-2)
4	100089	8	#16 Split Flange Half
5	100091	4	#219-O-Ring
6	100143	20	.375-16UNC x 1.25 Lg SHCS
7	100588	2	FITT2L-24M24P000-0000001
8	110055	1	FITT2P-20P000000-000S007
9	110203	1	FITT2S-04M04P000-000H001
10	100547	2	FITT2S-32P24Q000-000H001
11	100446	1	FITT2L-24P24Q000-000H001
12	110037	1	FITT2S-24P24P000-000H001
13	100565	1	FITT2S-24P24M000-000H001
14	400039	12	.75-10UNC x 2.75 Lg SHCS
15	100069	12	.75 Lock Washer
16	100654	1	Sandwich Shut-Off Valve (V-4)
17	400149	4	.375 Lock Washer
18	110544	1	Cartridge Cover (CC4)
19	110530	1	Cartridge Cover (CC1)
20	110546	1	Cartridge Cover (CC2)
21	110606	1	Cartridge Cover (CC3)
22	110634	4	.25-20UNC x 7.50 Lg. SHCS
23	110624	2	Cartridge A (CA1-2)
24	110622	2	Cartridge B (CB1-2)
25	810519	1	Modified Spool Valve (V-2)
26	100845	2	FITT2P-04P000000-000S007
27	100990	2	Electrical Connector
28	100630	1	Reverse Cartridge (100)
29	100632	1	Forward Cartridge (315)
30	140581	1	FITT2L-04P06M000-0000001
31	100149	1	HOSE025R02J004J004L01900
32	100145	4	FITT2L-04M04P000-0000001
33	100556	1	FITT2T-04M04M04J-0000001
34	110602	2	#111-O-Ring
35	140387	1	Orifice
36	100646	2	FITT2P-02P000000-000S007
37	100067	4	.75-10 X 2.50 Lg SHCS Lockwel
38	400727	4	.75 Hi-Collar Lock Washer
39	100719	1	HOSE025R02J004J004L03000
40	110237	2	Straight S/O Cord Adapter
41	110616	1	.25 X .625 Lg Roll Pin

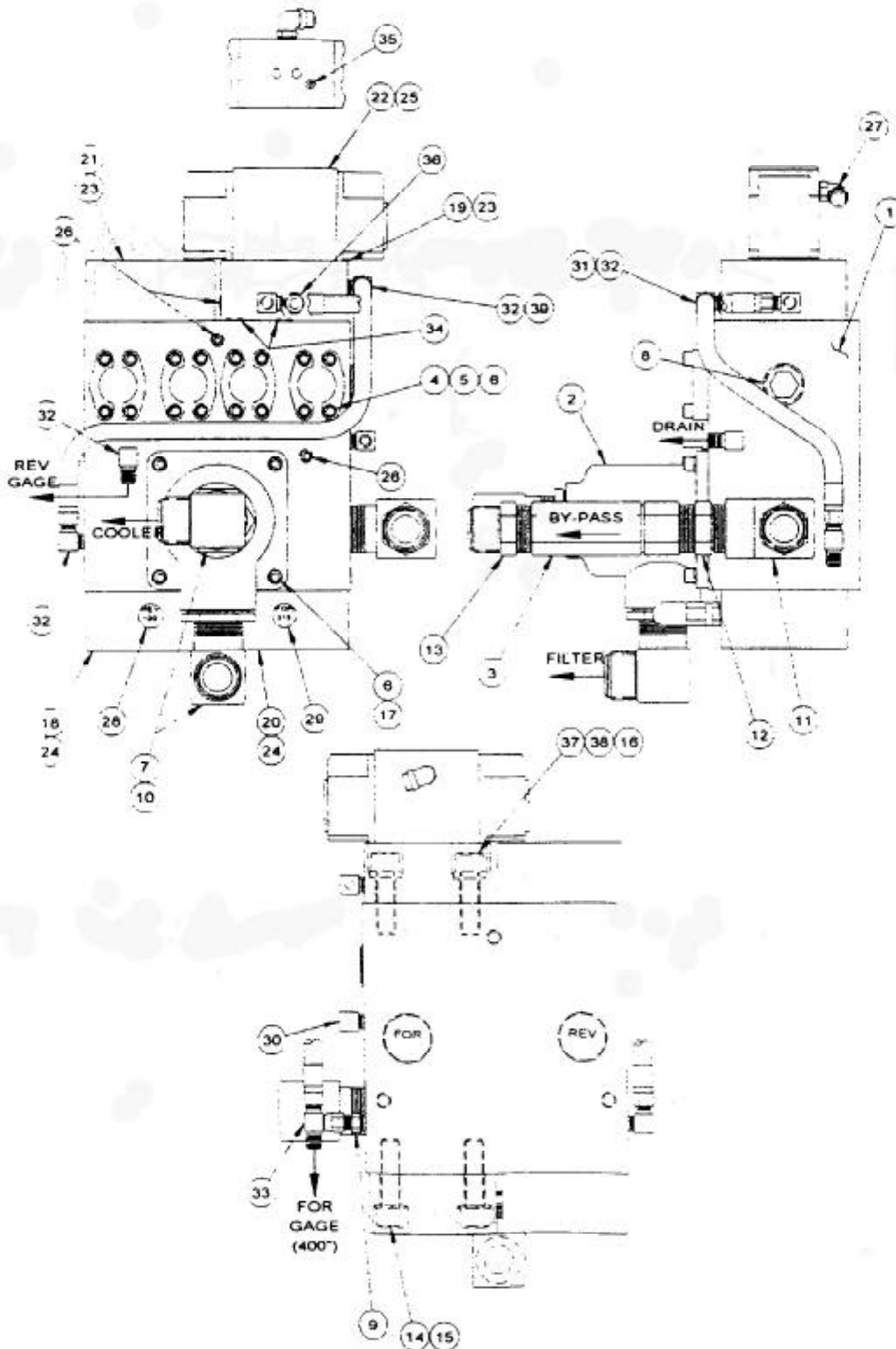


MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

CONTROL MANIFOLD ASSEMBLY
FROM SERIAL NUMBER 174179

810447





MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

CONTROL MANIFOLD ASSEMBLY
FROM SERIAL NUMBER 174179

810447

Item	Part Number	Qty.	Description
1	110516	1	Manifold Block
2	110628	1	Cooler Valve (V3)
3	130339	1	Check Valve (CV2)
4	100089	8	#16 Split Flange Half
5	100091	4	#219-O-Ring
6	100143	20	.375-16UNC x 1.25 Lg SHCS
7	100588	2	FITT2L-24M24P000-0000001
8	110055	1	FITT2P-20P000000-000S007
9	110203	1	FITT2S-04M04P000-000H001
10	100547	2	FITT2S-32P24Q000-000H001
11	100446	1	FITT2L-24P24Q000-000H001
12	110037	1	FITT2S-24P24P000-000H001
13	100565	1	FITT2S-24P24M000-000H001
14	400039	12	.75-10UNC x 2.75 Lg SHCS
15	100069	12	.75 Lock Washer
16	110616	1	.25 X .625 Lg Roll Pin
17	400149	4	.375 Lock Washer
18	110544	1	Cartridge Cover (CC4)
19	110262	1	Cartridge Cover (CC1)
20	110546	1	Cartridge Cover (CC2)
21	110606	1	Cartridge Cover (CC3)
22	110260	4	.25-20UNC x 2.75 Lg, SHCS
23	110624	2	Cartridge A (CA1-2)
24	110622	2	Cartridge B (CB1-2)
25	110147	1	Control Valve (V2)
26	100845	3	FITT2P-04P000000-000S007
27	110235	1	90 Deg. S/O Cord Adapter
28	100630	1	Reverse Cartridge (100)
29	100632	1	Forward Cartridge (315)
30	140581	1	FITT2L-04P06M000-0000001
31	100149	1	HOSE025R02J004J004L01900
32	100145	4	FITT2L-04M04P000-0000001
33	100556	1	FITT2T-04M04M04J-0000001
34	110602	2	#111-O-Ring
35	140387	1	Orifice
36	100423	1	FITT2P-08P000000-000S007
37	100067	4	.75-10 X 2.50 Lg SHCS Lockwel
38	400727	4	.75 Hi-Collar Lock Washer
39	100719	1	HOSE025R02J004J004L03000

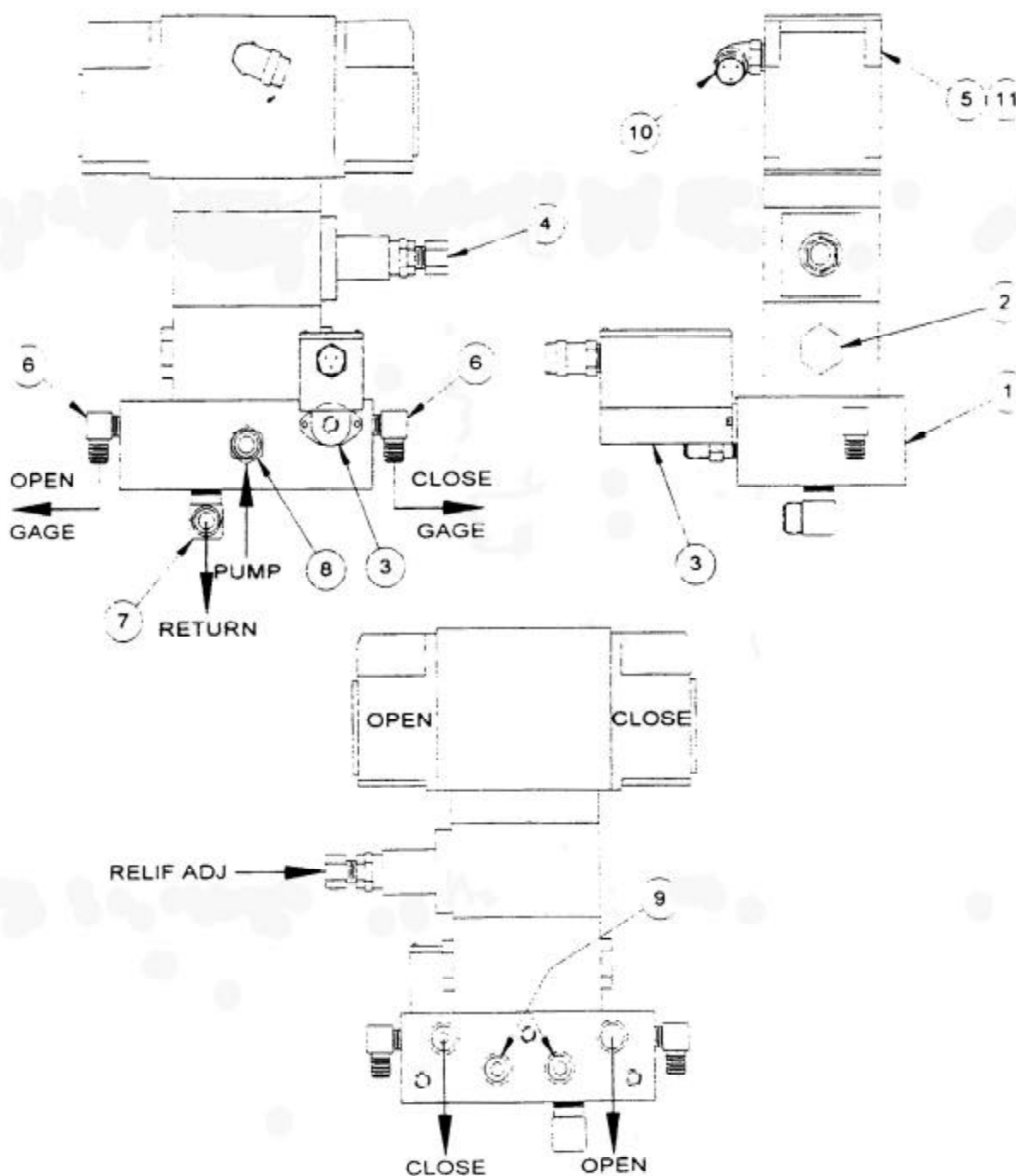


MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

CLAMP MANIFOLD ASSEMBLY

810449





MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

CLAMP MANIFOLD ASSEMBLY

810449

<u>Item</u>	<u>Part Number</u>	<u>Qty.</u>	<u>Description</u>
1	110642	1	Manifold Block
2	110149	1	Check Valve (CV-5)
3	810425	1	Pressure Switch (PS-1)
4	100898	1	Relief Valve (RV2)
5	110147	1	Control Valve (V-1)
6	140539	2	FITT2L-04M02P000-0000001
7	110632	1	FITT2L-12M06P000-000H001
8	110630	1	FITT2S-08M06P000-000H001
9	400213	2	FITT2P-06P000000-000S007
10	110235	1	90° S/O Cord Adapter
11	110634	4	.25 - 20 UNC x 7.50 Lg SHCS

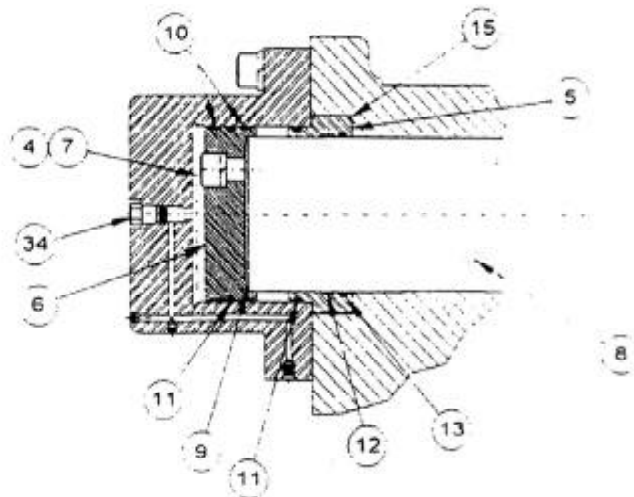
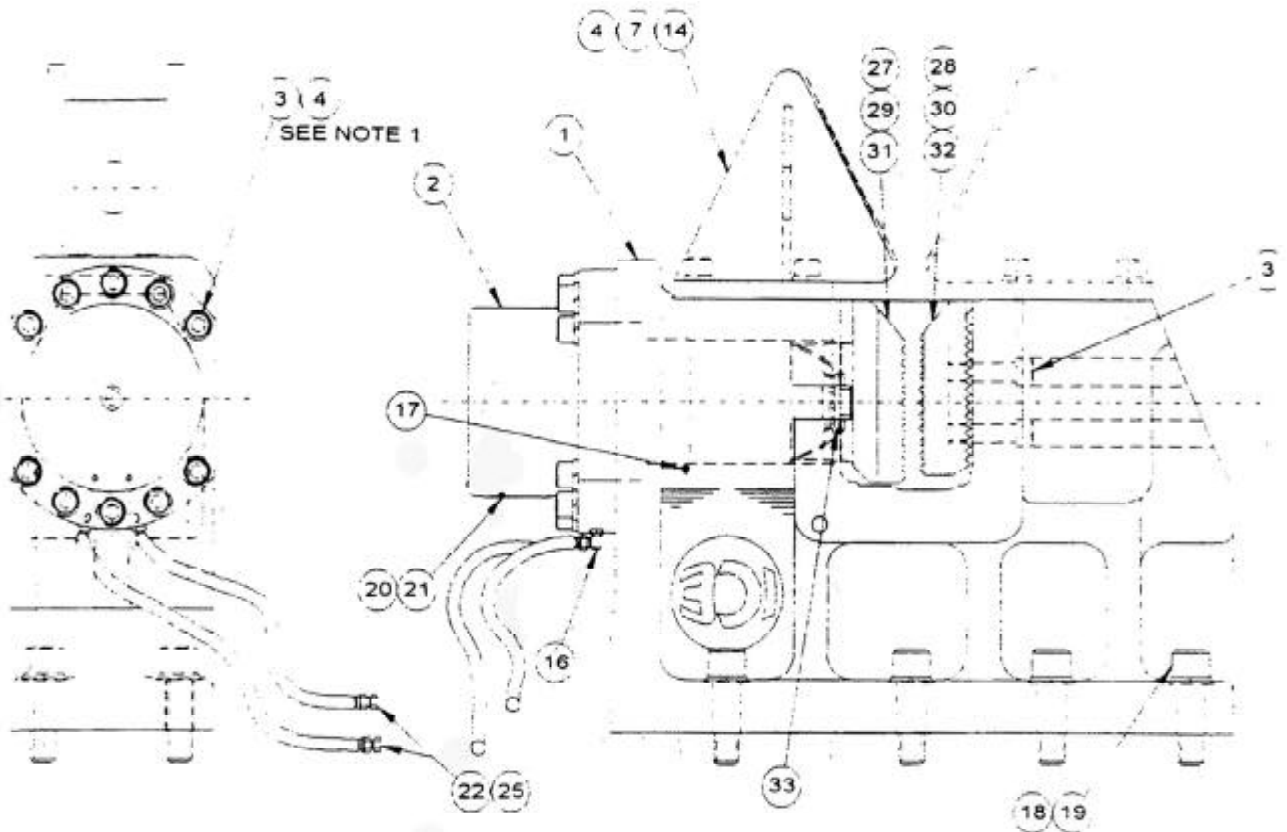


MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

126 CLAMP ASSEMBLY (OPTIONAL)

800327



NOTE

1 TORQUE 1.00 SOCKET HEAD
CAP SCREWS TO 540 FT/LB

CYLINDER DETAIL



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

126 CLAMP ASSEMBLY (OPTIONAL)

800327

Item	Part Number	Qty.	Description
1	810493	1	126 Clamp Body Asm.
2	810491	1	Welded Cylinder
3	100212	12	1-8UNC x 4.0 Lg SHCS
4	100209	19	1" Lock Washer
5	120567	1	Rod End Cap
6	120569	1	Piston
7	100213	7	1-8UNC x 2.50 Lg SHCS
8	120575	1	Cylinder Rod
9	120347	1	#261-O- Ring (Note)
10	120285	2	Piston Bearing (Note)
11	120283	2	Piston Seal (Note)
12	120555	1	Rod Bearing (Note)
13	120553	1	Rod Seal (Note)
14	100983	1	Pile Guide
15	120401	1	2-269 O-Ring 90 DURO (Note)
16	130057	1	FITT2L-06M06R000-000H001
17	100229	1	Grease Fitting
18	100193	8	1.5-6UNC x 5.0 Lg SHCS
19	100195	8	1.5 Lock Washer
20	120365	1	Clamp Label
21	130381	4	Rivet
22	100111	2	HOSE038R02J006J006L0875S
25	100230	2	FITT2P-06M000000-000T001
26	810515	1	126 Seal Kit
27	810495	1	Universal Movable Jaw
28	110515	1	Universal Fixed Jaw
29	810497	1	H-Beam Movable Jaw
30	110541	1	H-Beam Fixed Jaw
31	810499	1	DS-Movable Jaw
32	110419	1	DS-Fixed Jaw
33	130449	1	Spiral Roll Pin
34	120629	1	Holding Valve

Note: Included in 126 Seal Kit

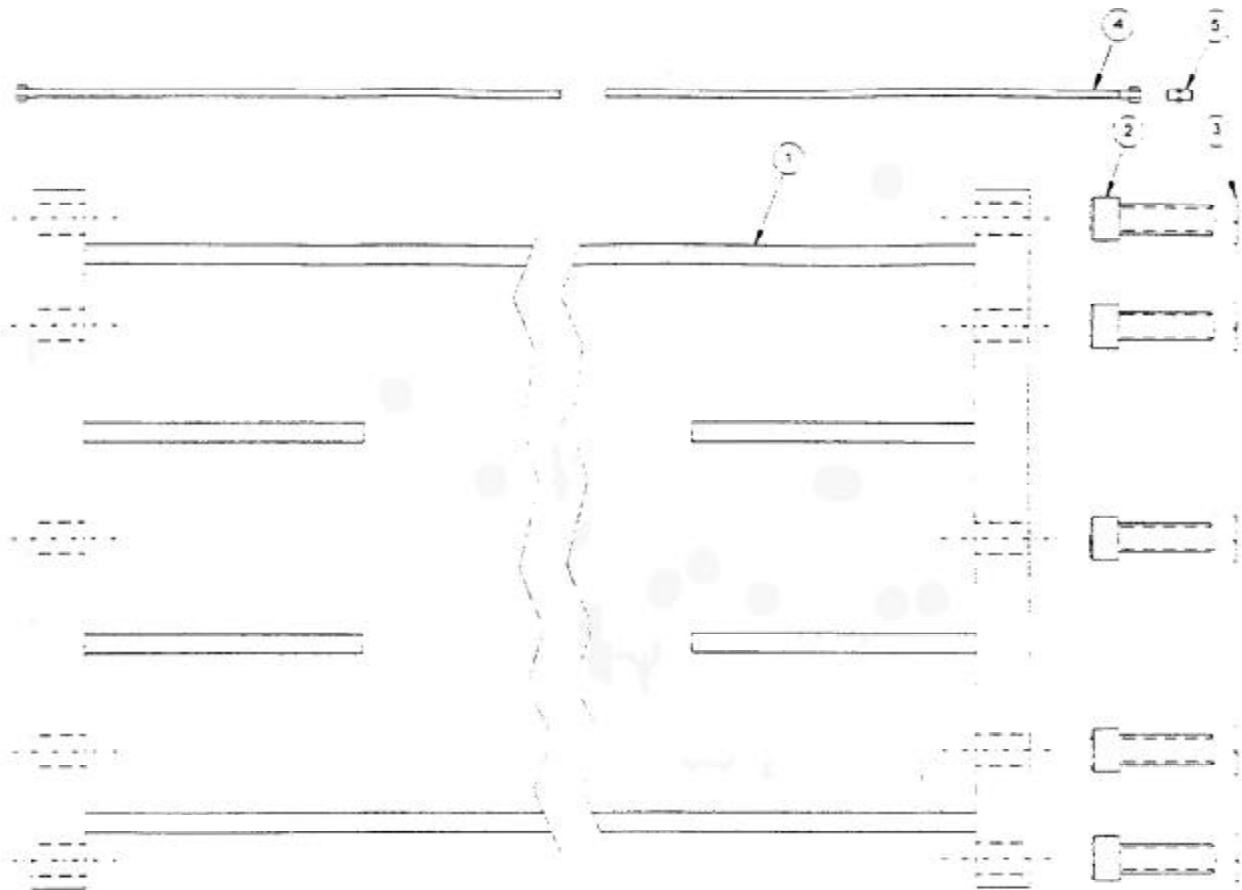


MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

CLAMP EXTENSION - 10 FOOT (OPTIONAL)

800423



Item	Part Number	Qty.	Description
1	810655	1	10' Extension
2	100193	10	1.50-6UNC x 5.00 Lg SHCS
3	100195	10	1.50 Lock Washer
4	120193	2	HOSE038R02J006J006L1320S
5	120081	2	FITT2S-06M06M000-000H001

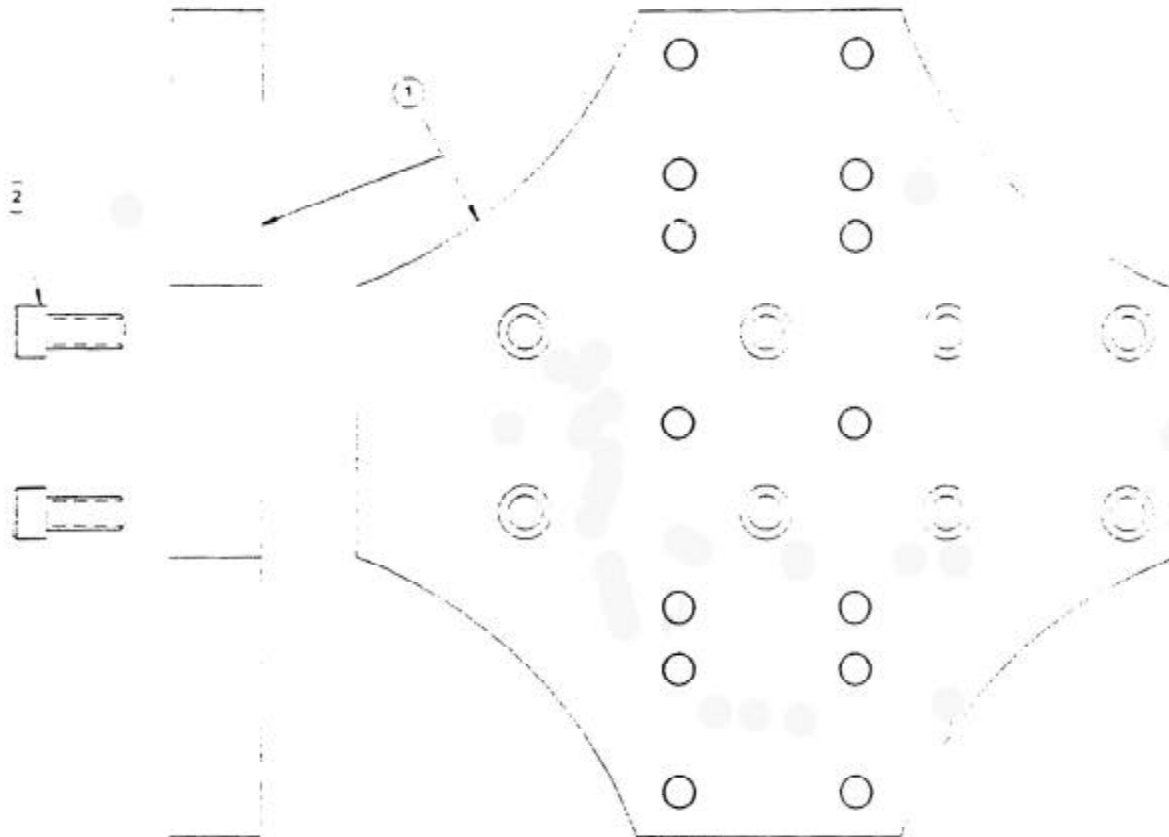


MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

90 Deg. CLAMP ADAPTER (OPTIONAL)

800049



Item	Part Number	Qty.	Description
1	120083	1	90 deg. Clamp Adapter
2	120077	8	1.50-6UNC x 3.50 Lg SHCS

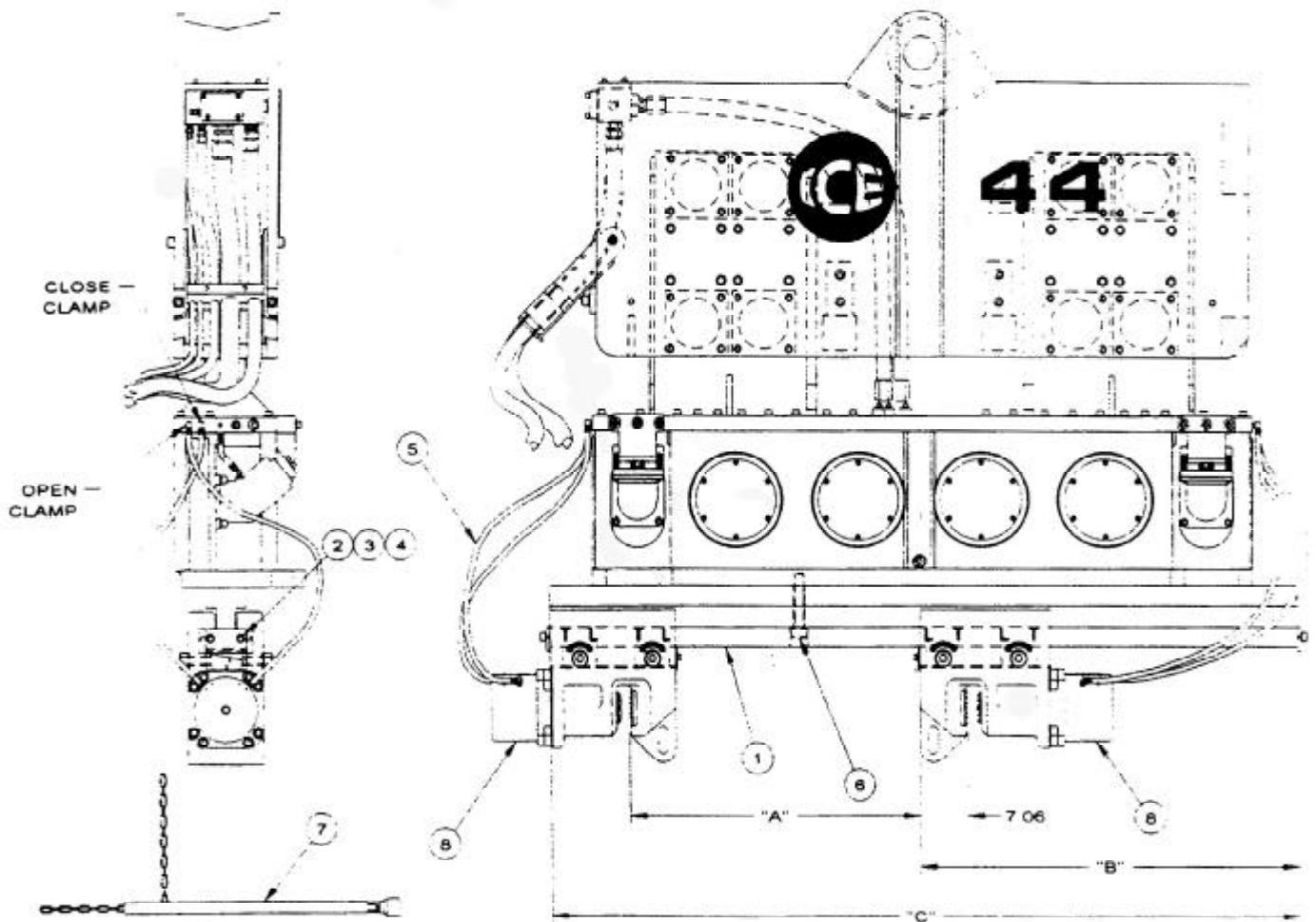


**MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR**

PARTS LIST

CAISSON BEAM - 7 FOOT (OPTIONAL)
11 FOOT (OPTIONAL)

800477
800479



7' Caisson Beam (800477) - Shown
11' Caisson Beam (800479) - Similar

	A	B	C
7' Beam	42.00	55.00	110.00
11' Beam	71.75	84.00	168.00



**MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR**

PARTS LIST

CAISSON BEAM - 7 FOOT (OPTIONAL)

800477

<u>Item</u>	<u>Part Number</u>	<u>Qty.</u>	<u>Description</u>
1	120001	1	7' Caisson Beam
2	120011	2	Clamp Stop
3	400069	4	.75-10UNC x 2.00 Lg SHCS
4	100069	4	.75 Lock Washer
5	100228	4	HOSE038R02J006J006L0610S
6	120007	15	1.50-6UNC x 8.00 Lg SHCS
7	810173	1	Adjustment Tool
8	800047	2	#80 Caisson Clamp Asm. (Note)
11	100230	4	FITT2P-06M000000-000T001

CAISSON BEAM - 11 FOOT (OPTIONAL)

800479

<u>Item</u>	<u>Part Number</u>	<u>Qty.</u>	<u>Description</u>
1	810251	1	11' Caisson Beam
2	120011	2	Clamp Stop
3	400069	4	.75-10UNC x 2.00 Lg SHCS
4	100069	1	.75 Lock Washer
5	120009	4	HOSE038R02J006J006L0960S
6	100193	14	1.50-6UNC x 5.00 Lg SHCS
7	810173	1	Adjustment Tool
8	800047	2	#80 Caisson Clamp Asm. (Note)
11	130219	14	1.50 Lock Washer Hi-Collar
12	100230	4	FITT2P-06M000000-000T001

Note: Not part of Caisson Beam Asm.

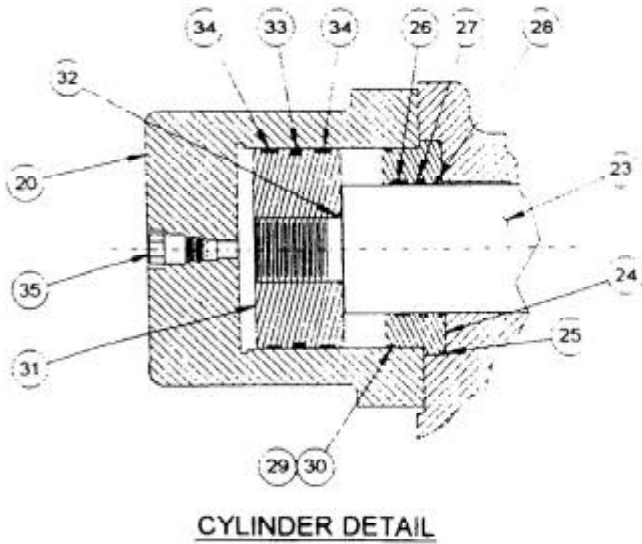
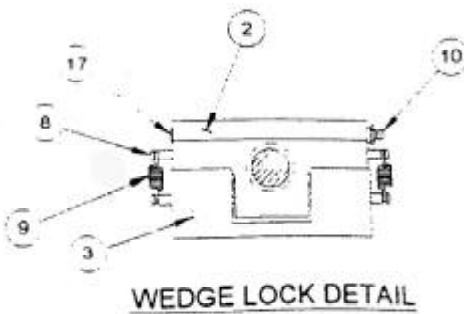
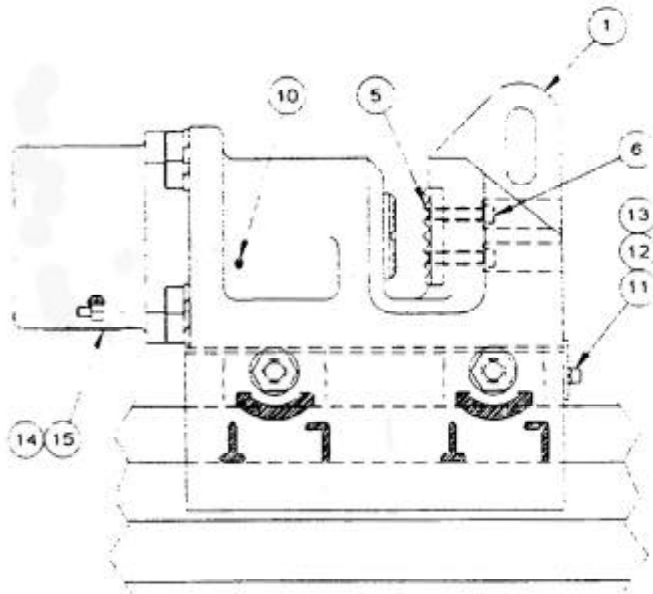
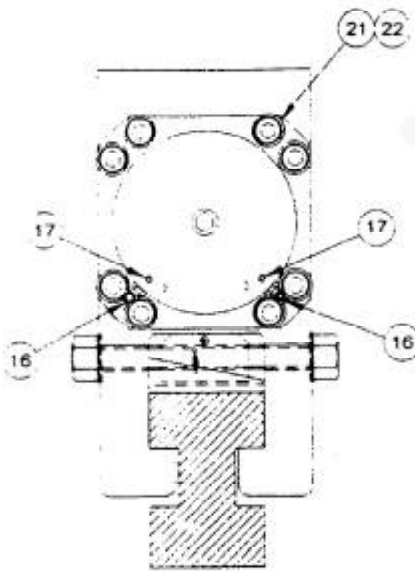
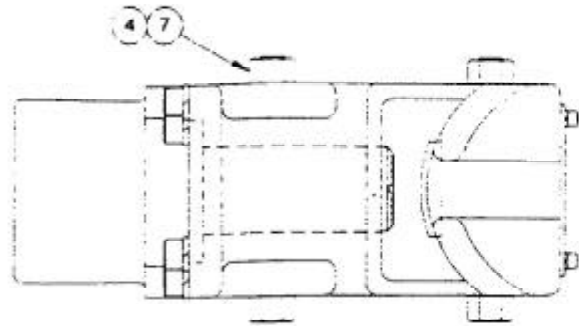


MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

MODEL 80 CAISSON CLAMP (OPTIONAL) w/ WEDGE LOCK

800047





MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

MODEL 80 CAISSON CLAMP (OPTIONAL) w/ WEDGE LOCK

800047

Item	Number	Qty.	Description
1	810061	1	Clamp Body
2	120101	2	Wedge
3	120103	2	Lock
4	810109	2	Screw Asm.
5	120107	1	Fixed Jaw
6	400157	2	.625-11UNC x 2.75 Lg SHCS
9	120115	4	Spring
10	100229	3	Grease Fitting
11	120119	1	Wedge Guard
12	100119	2	.5-13UNC x 1.25 Lg SHCS
13	100121	2	.5 Lock Washer
14	120159	1	Clamp Label
15	130381	4	Rivet
16	130057	2	FITT2L-06M06R000-000H001
17	100646	7	FITT2P-02P000000-000S007
20	120621	1	Cylinder
21	100212	8	1.0-8UNC x 4.00 Lg SHCS
22	100209	8	1.0 Lock Washer
23	120631	1	Cylinder Rod
24	120623	1	Rod End Cap
25	120100	1	263-O-Ring (Note)
26	120627	1	Rod Bearing (Note)
27	120625	1	Rod Seal (Note)
28	120345	1	Rod Wiper (Note)
29	120347	1	#261-O-Ring (Note)
30	120349	1	#261-Back-up Ring (Note)
31	120313	1	Piston
32	120281	1	#140-O-Ring (Note)
33	120357	1	Piston Seal (Note)
34	120355	2	Piston Bearing (Note)
35	120629	1	Holding Valve
36	810611	1	80 Seal Kit

Note: Included in Model 80 Seal Kit.

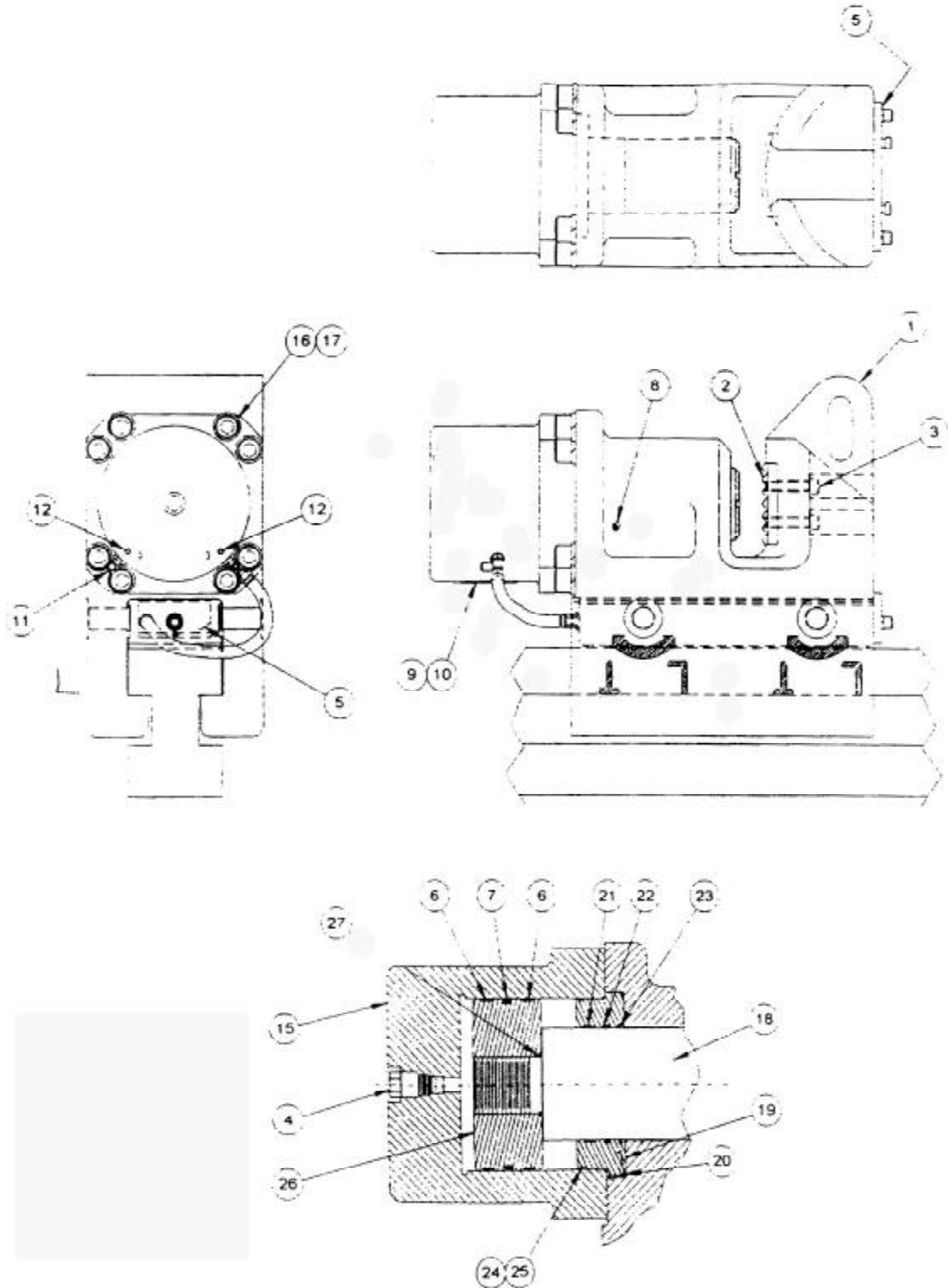


MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

MODEL 80 CAISSON CLAMP (OPTIONAL) w/ HYDRO LOCK

800413



CYLINDER DETAIL



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

MODEL 80 CAISSON CLAMP (OPTIONAL) w/HYDRO LOCK

800413

Item	Number	Qty.	Description
1	810061	1	Caisson 80 Clamp Body Cast.
2	120107	1	Jaw
3	400157	2	.625-11 x 2.75 Lg SHCS
4	120629	1	Holding Valve Cartridge
5	800399	1	Lock Body Asm.
6	120355	2	Piston Bearing (Note)
7	120357	1	Piston Seal (Note)
8	100229	1	Grease Fitting
9	120159	1	80 S/N Plate
10	130381	4	Rivet
11	130057	1	FITT2L-06M06R000-000H001
12	100646	5	FITT2P-02P000000-000S007
15	120621	1	80 Cylinder
16	100212	8	1.0-8 X 4 Lg SHCS Locwel
17	100209	8	1.0 Lock Washer Medium
18	120631	1	Cylinder Rod (80 B)
19	120623	1	Rod End Cap (80 B)
20	120100	1	2-263 O-Ring 90 DURO (Note)
21	120627	1	Rod Bearing (80 B) (Note)
22	120625	1	Rod Seal (80 B) (Note)
23	120345	1	Rod Wiper (Note)
24	120347	1	2-261 O-Ring 90 DURO (Note)
25	120349	1	261 Back-Up Ring (Note)
26	120313	1	Piston - 80, 216, WPH
27	120281	1	2-140 O-Ring (Note)
28	810611	1	#80 Seal Kit

Note: Included in Model 80 Seal Kit.

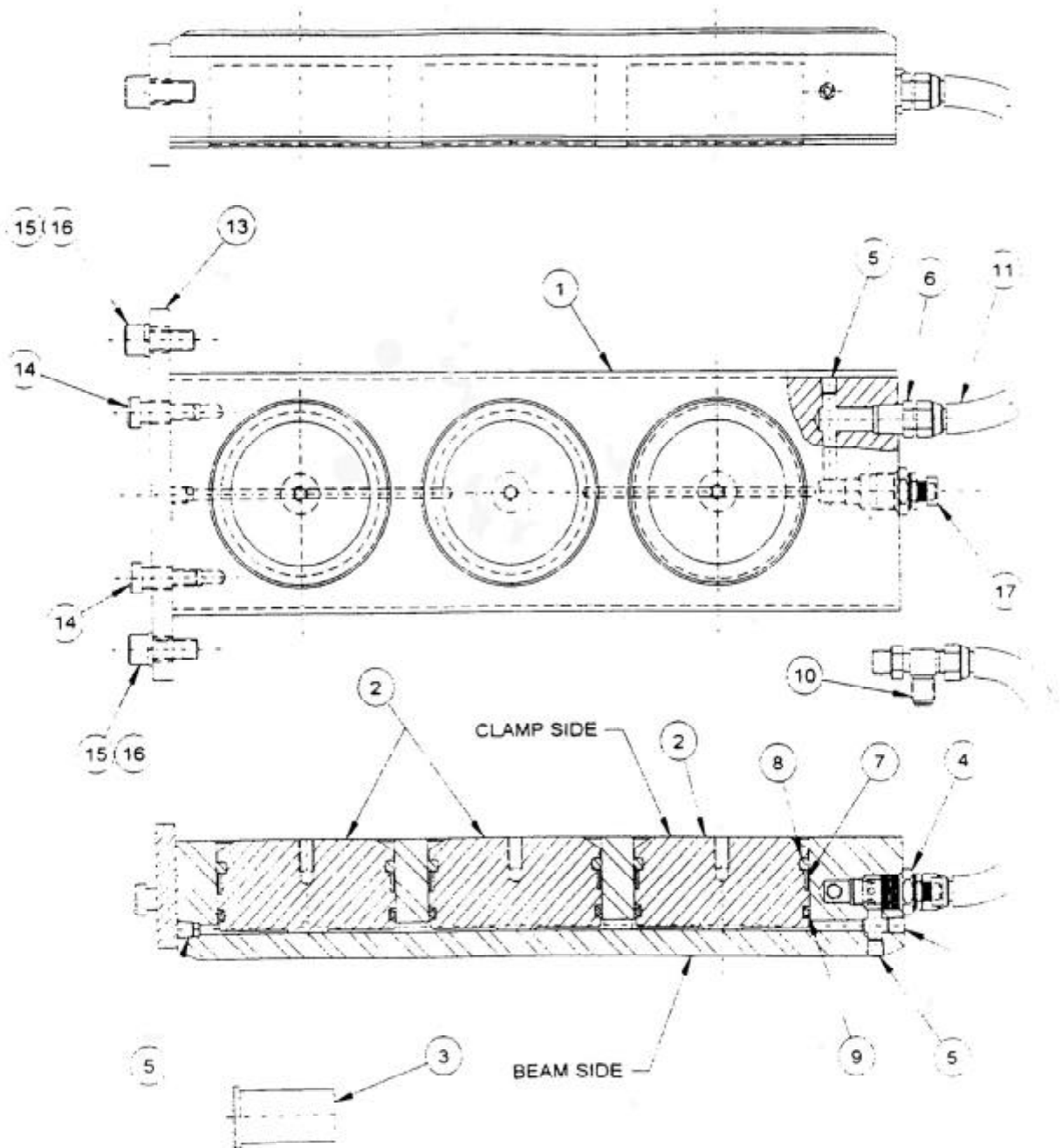


MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

HYDRO LOCK (OPTIONAL)

800399





MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

HYDRO LOCK (OPTIONAL)

800399

Item	Number	Qty.	Description
1	120639	1	Lock Body
2	120641	3	Piston
3	120643	4	Button
4	120651	1	Lock Body Holding Valve
5	100646	4	FITT2P-02P000000-000S007
6	400203	1	FITT2S-06M06P000-000H001
7	120645	3	Piston Bearing
8	120649	3	Piston Wiper
9	120647	3	Piston Seal
10	120655	1	FITT2T-06R06M06M-0000001
11	120657	1	HOSE038RO2J006J006L0090C
13	120653	1	L.B. Retainer Plate
14	140143	2	.5 X .75 Lg SHCS Shoulder
15	100119	2	.5-13 X 1.25 Lg SHCS Lockw
16	100121	2	.5 Lock Washer Medium
17	120731	1	Support Ring

INSTALLATION PROCEDURE

Remove Elbow on CLOSE side of the Cylinder and replace with Tee. Connect hose from Lock Body to Cylinder. Position Clamps on Beam to suit your Piling. Close Holding Valve Item 4 by turning CW, CLOSE Clamp to Energize HYDRO LOCK. To reposition Clamp on Beam, Open Holding Valve Item 4 by turning CCW, and OPEN Clamp to release HYDRO LOCK.

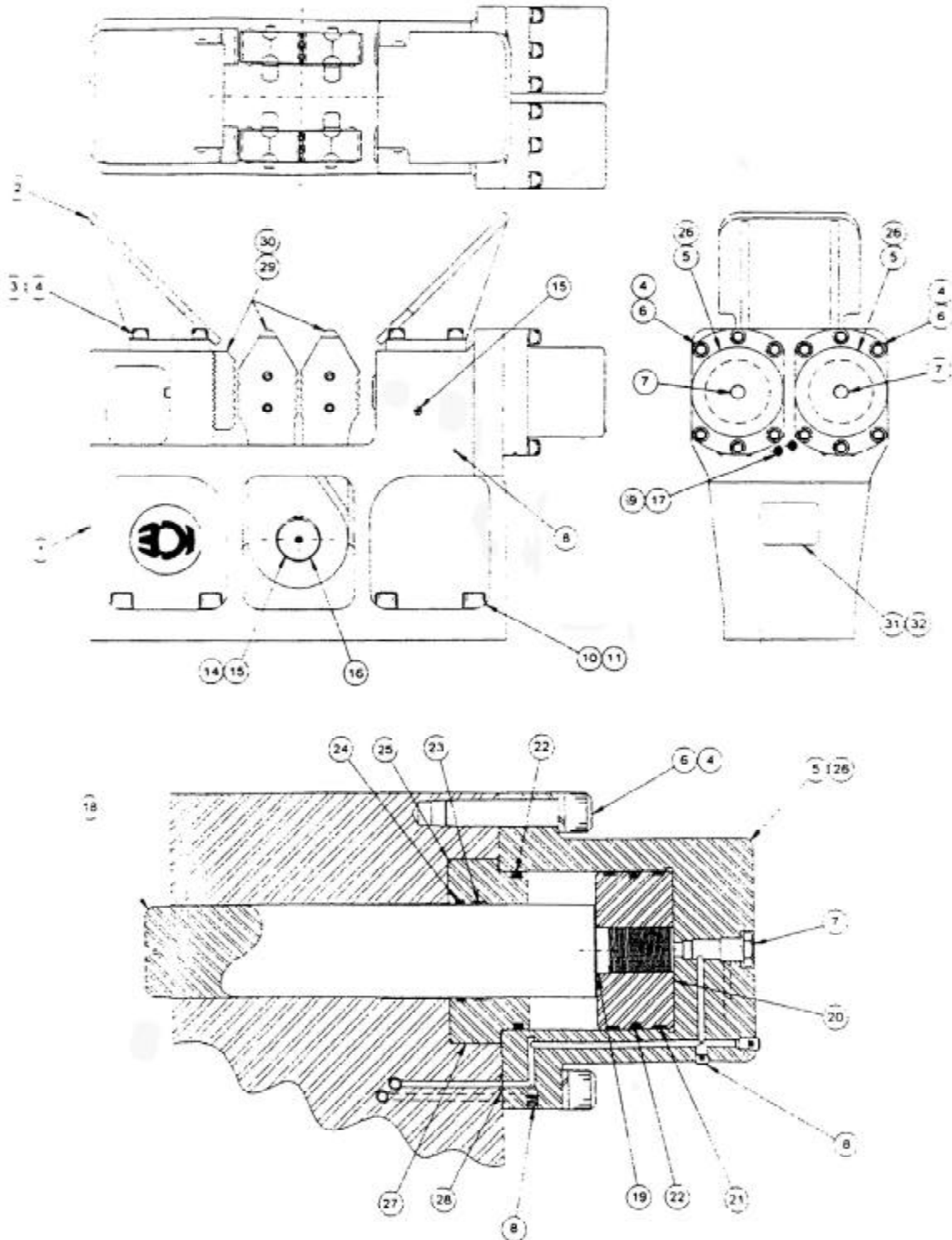


MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

MODEL 127 Z-PILE CLAMP (OPTIONAL)

800041



CYLINDER ASSEMBLY DETAIL



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

MODEL 127 Z-PILE CLAMP (OPTIONAL)

800041

Item	Part Number	Qty	Description
1	810059	1	127 Z CLAMP BODY CASTING
2	120677	2	PILE GUIDE
3	100213	8	1.0-8 X 2.5 Lg SHCS LOCWEL
4	100209	20	1.0 Lock Washer Medium
5	120659	2	127 CYLINDER
6	100212	12	1.0-8 X 4 Lg SHCS LOCWEL
7	120629	2	HOLDING VALVE CARTRIDGE
8	100646	10	FITT2P-02P000000-000S007
9	100053	2	FITT2S-06MO6R000-000H001
10	100193	8	1.5-6 X 5.0 Lg SHCS
11	100195	8	1.5 Lock Washer EXTRA HEAVY
14	120155	1	SHAFT
15	100229	4	GREASE FITTING
16	120191	2	RETAINER RING
17	100111	2	HOSE038R02J006J006L0875S
18	120663	2	CYLINDER ROD(127)
19	120239	2	2-132 O-RING (Note 1)
20	120241	2	PISTON-127
21	120243	4	PISTON BEARING (Note 1)
22	120245	4	PISTON SEAL (Note 1)
23	120665	2	ROD BEARING (Note 1)
24	120667	2	ROD SEAL (Note 1)
25	120347	2	2-261 O-RING 90 DURO (Note 1)
26	810629	2	127 Z SEAL KIT
27	120661	2	ROD END CAP(127)
28	110602	4	111 O-RING (Note 1)
29	800419	1	12" MULTI-GRIP JAW SET (Note 2)
30	800417	1	13" MULTI-GRIP JAW SET (Note 2)
31	120181	1	127 S/N PLATE
32	130381	4	RIVET

Note 1 : Included in Model 127 Seal Kit.

Note 2 : Not part of Final Assembly.

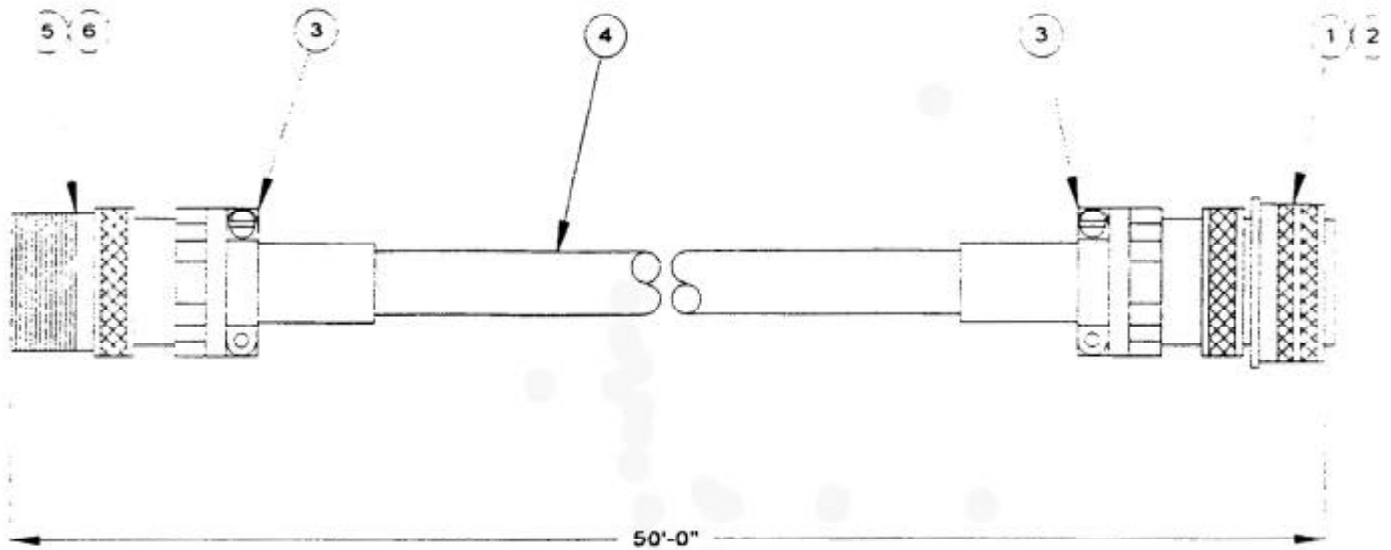


MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

PENDANT EXTENSION CABLE - 50' (OPTIONAL)

800059



Item	Part Number	Qty.	Description
1	120169	1	Amphenol Cable Jack
2	110763	1	Female Amphenol Insert
3	100375	2	Strain Relief - Amphenol
4	100560	50	Pendant Cable / Ft
5	100395	1	Amphenol Plug
6	110761	1	Male Amphenol Insert-Plug



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

VIII. ORDERING PARTS

E. MISCELLANEOUS ACCESSORIES

1. TOOLS

Part Number	Qty	Description
100651	1	24-Volt Test Light
100653	1	Set of Allen Wrenches - Includes All Wrenches Shown Below:
100655		(1) 1/16" Allen Wrench - Long Arm
100691		(1) 5/64" Allen Wrench - Long Arm
100659		(1) 3/32" Allen Wrench - Long Arm
100661		(1) 7/64" Allen Wrench - Long Arm
100663		(1) 1/ 8" Allen Wrench - Long Arm
100665		(1) 9/64" Allen Wrench - Long Arm
100667		(1) 5/32" Allen Wrench - Long Arm
100669		(1) 3/16" Allen Wrench - Long Arm
100671		(1) 7/32" Allen Wrench - Long Arm
100673		(1) 1/ 4" Allen Wrench - Long Arm
100657		(1) 5/16" Allen Wrench - Long Arm
100675		(1) 3/ 8" Allen Wrench - Long Arm
100677		(1) 7/16" Allen Wrench - Long Arm
100679		(1) 9/16" Allen Wrench - Long Arm
100683		(1) 5/ 8" Allen Wrench - Long Arm
100685		(1) 3/ 4" Allen Wrench - Long Arm
100687		(1) 7/ 8" Allen Wrench - Short Arm
100689		(1) 1" Allen Wrench - Short Arm

2. BULK

Part Number	Qty.	Description
810013	5 GAL	Hydraulic Oil
810011	5 GAL	Vibration Case Lubricant
100726	1 GAL	Coolant/Anti-Freeze
100298	1 GAL	I C E Green Paint
100299	1 GAL	Primer



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

VIII. ORDERING PARTS

E. MISCELLANEOUS ACCESSORIES (Continued)

3. 44-50 HOSE GROUP KIT-INTERNAL

850127

Item	P/N	Qty.	Description	Page Ref.
15	140907	2	HOSE150PT6F024F024L0835C	VIII-6
23	100486	2	HOSE050R01J008J008L01450	VIII-6
27	140905	2	HOSE038R02J006J006L0835C	VIII-6
32	140903	1	HOSE075PT4F012FO12L0835C	VIII-6

4. 570D HOSE GROUP KIT-INTERNAL

850111

Item	P/N	Qty.	Description	Page Ref.
76	400215	1	HOSE100R01P016P016L08400	VIII-25
81	100941	1	HOSE075R01J012J012L04400	VIII-25
87	130201	1	HOSE075R01J012J012L04000	VIII-25
88	130205	3	HOSE019R01J004J004L09000	VIII-24
92	110467	1	HOSE150R01J024F924L16600	VIII-25
93	110469	1	HOSE150R01J024F924L14300	VIII-24
105	110680	1	HOSE019R01J004J004L40000	VIII-24
106	110474	1	HOSE100PT4F016F920L04350	VIII-24
107	110476	1	HOSE100PT4F016F920L04100	VIII-24
109	110478	1	HOSE100PT4F016F920L04000	VIII-24
127	110480	1	HOSE100PT4F016F920L03900	VIII-24
138	110831	1	HOSE100R01P016J016L07000	VIII-25
140	110470	1	HOSE050PT4J008J008L03500	VIII-24
143	110019	1	HOSE075R01J012J012L04800	VIII-25
145	110586	1	HOSE150R01J024J024L12900	VIII-24
146	110780	1	HOSE150R01F924J024L04900	VIII-25
147	110588	1	HOSE150R01F924J024L02050	VIII-25
152	130207	2	HOSE019R01J004J004L10000	VIII-24
153	100228	1	HOSE038R02J006J006L06100	VIII-25



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

VIII. ORDERING PARTS

E. MISCELLANEOUS ACCESSORIES (CONTINUED)

5. 44-50 / 570D O-RING KIT 850129

<u>P/N</u>	<u>Qty.</u>	<u>Description</u>
140255	2	#113-O-Ring
110631	1	#117-O-Ring
100097	4	#214-O-Ring
100037	8	#222-O-Ring
110119	10	#225-O-Ring
400379	2	#232-O-Ring

6. CYLINDER SEAL KITS

MODEL 126 CLAMP CYLINDER 800327 Refer to page VIII-37

<u>Item</u>	<u>P/N</u>	<u>Qty.</u>	<u>Description</u>
9	120347	1	#261-O-Ring
10	120285	2	Piston Bearing
11	120283	2	Piston Seal
12	120555	1	Rod Bearing
13	120553	1	Rod Seal
34	120401	1	#269-O-Ring

MODEL 80 CLAMP CYLINDER 800047 Refer to page VIII-43

<u>Item</u>	<u>P/N</u>	<u>Qty.</u>	<u>Description</u>
25	120100	1	#263-O-Ring
26	120627	1	Rod Bearing
27	120625	1	Rod Seal
28	120345	1	Rod Wiper
29	120347	2	#261-O-Ring
30	120349	2	#261-Back-up Ring
32	120281	1	#140-O-Ring
33	120357	1	Piston Seal
34	120355	2	Piston Bearing



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

VIII. ORDERING PARTS

F. RECOMMENDED SPARE PARTS

VIBRATION SUPPRESSOR 800427 Refer to page VIII-6

Item	P/N	Qty.	Description
41	100796	2	Elastomer
30	110119	2	#225 O-Ring
34	100097	1	#214 O-Ring

VIBRATION CASE 810649 Refer to page VIII-10

Item	P/N	Qty.	Description
6	100187	2	FITT2P-12P000000-000S0M7
15	100185	1	Sight Gage

HOSE ASSEMBLIES-INTERCONNECTING 800053 Refer to page VIII-14

Item	P/N	Qty.	Description
4	110141	1	HOSE150PT4P024P024L60000
9	110970	1	HOSE200R02J032J032L60000
13	100241	1	HOSE075R02P012P012L62000
17	100247	2	HOSE038RO2P006P006L62000

POWER UNIT - INTERNAL 800127 Refer to page VIII-24

Item	P/N	Qty.	Description
90	110119	4	#225-O-Ring
99	810117	4	Filter Element Assembly
106	110474	1	HOSE100PT4F016F920L04350
107	110476	1	HOSE100PT4F016F920L04100
109	110478	1	HOSE100PT4F016F920L04000
127	110480	1	HOSE100PT4F016F920L03900
140	110470	1	HOSE050R09J008J908L03500
144	100037	4	#222-O-Ring
---	110423	1	Air Cleaner Element



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

VIII. ORDERING PARTS

F. RECOMMENDED SPARE PARTS (CONTINUED)

TERMINAL MANIFOLD 810019 Refer to page VIII-12

Item	P/N	Qty	Description
5	100032	1	Relief Valve
13	110119	2	#225 O-Ring
16	100097	1	#214 O-Ring
21	140255	2	#113 O-Ring

MODEL 126 CLAMP 800327 Refer to page VIII-38

Item	P/N	Qty.	Description
16	130057	1	FITT2L-06M06R000-0000001
18	100193	8	1.5-6UNC x 5.00 Lg SHCS
19	100195	8	1.5 Lock Washer
22	100111	2	HOSE038R02J006J00620875S
26	810515	1	126 Seal Kit
27	810495	1	Universal Movable Jaw
28	110515	1	Universal Fixed Jaw
29	810497	1	H-Beam Movable Jaw
30	110541	1	H-Beam Fixed Jaw
31	810499	1	DS-Movable Jaw
32	110419	1	DS-Fixed Jaw
33	130449	1	Spiral Roll Pin

MODEL 127 Z-PILE CLAMP 800041 Refer to page VIII-50

Item	P/N	Qty.	Description
9	100193	8	1.50-6UNC x 5.00 Lg SHCS
10	100195	8	1.50 Lock Washer
17	100111	1	HOSE038R02J006J006L0875S
26	810629	1	127 Seal Kit



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

VIII. ORDERING PARTS

F. RECOMMENDED SPARE PARTS (CONTINUED)

MODEL 80 CAISSON CLAMP w/WEDGE LOCK 800047 Refer to page VIII-44

<u>Item</u>	<u>P/N</u>	<u>Qty.</u>	<u>Description</u>
4	810109	1	Screw Assembly
5	120107	1	Fixed Jaw
6	400157	2	.625-10UNC x 2.75 Lg SHCS
16	130057	2	FITT2L-06M06R000-000H001
35	120629	1	Holding Valve
36	810611	1	Model 80 Seal Kit

MODEL 80 CAISSON CLAMP w/HYDRO LOCK 800413 Refer to page VIII-46

<u>Item</u>	<u>P/N</u>	<u>Qty.</u>	<u>Description</u>
2	120107	1	Jaw
3	400157	2	.625-10UNC x 2.75 Lg SHCS
4	120629	1	Holding Valve
11	130057	2	FITT2L-06M06R000-000H001
28	810611	1	Model 80 Seal Kit

HYDRO LOCK 800399 Refer to page VIII-48

<u>Item</u>	<u>P/N</u>	<u>Qty.</u>	<u>Description</u>
3	120643	4	Button
4	120651	1	Holding Valve
6	400203	1	FITT2S-06M06P000-000H001
7	120645	3	Piston Bearing
8	120649	3	Piston Wiper
9	120647	3	Piston Seal
10	120655	1	FITT2T-06R06M06M-0000001
11	120657	1	HOSE038R02J006J006L0090C
14	140143	2	.5 x .75 Lg SHCS Shoulder
15	100119	2	.5-13 x 1.25 Lg SHCS Locwel
17	120731	1	Support Ring



MODEL 44-50
VIBRATORY
DRIVER/EXTRACTOR

PARTS LIST

G. RECOMMENDED TIGHTENING TORQUE

Nominal Screw Size	Nominal Socket Size	Tightening Torque Ft-Lbs. (Kg-M)	Nominal Screw Size	Nominal Socket Size	Tightening Torque Ft-Lbs. (Kg-M)
#10-24	5/32	6 Ft-Lbs. (.83 Kg-M)	#10-32	5/32	6 Ft-Lbs. (.83 Kg-M)
1/4-20	3/16	13 Ft-Lbs. (1.8 Kg-M)	1/4-28	3/16	15 Ft-Lbs. (2.1 Kg-M)
5/16-18	1/4	27 Ft-Lbs. (3.7 Kg-M)	5/16-24	1/4	30 Ft-Lbs. (4.2 Kg-M)
3/8-16	5/16	48 Ft-Lbs. (6.6 Kg-M)	3/8-24	5/16	55 Ft-Lbs. (7.6 Kg-M)
7/16-14	3/8	77 Ft-Lbs. (10.6 Kg-M)	7/16-20	3/8	86 Ft-Lbs. (11.9 Kg-M)
1/2-13	3/8	119 Ft-Lbs. (16.4 Kg-M)	1/2-20	3/8	133 Ft-Lbs. (18.4 Kg-M)
5/8-11	1/2	234 Ft-Lbs. (32.3 Kg M)	5/8-18	1/2	267 Ft-Lbs. (36.9 Kg-M)
3/4-10	5/8	417 Ft-Lbs. (57.6 Kg-M)	3/4-16	5/8	467 Ft-Lbs. (64.5 Kg-M)
7/8-9	3/4	676 Ft-Lbs. (93.4 Kg-M)	7/8-14	3/4	742 Ft-Lbs. (102.5 Kg-M)
1-8	3/4	1,009 Ft-Lbs. (139.4 Kg-M)	1-12	3/4	1,126 Ft-Lbs. (155.6 Kg-M)
1-1/4-7	7/8	1,600 Ft-Lbs. (221.1 Kg-M)	1-1/4-12	7/8	1,800 Ft-Lbs. (248.8 Kg-M)
1-1/2-6	1	2,800 Ft-Lbs. (387 Kg-M)	1-1/2-12	1	3,000 Ft-Lbs. (414.6 Kg-M)

NOTE: These values are for Socket head cap screws only.
Button heads, Flat heads and Set screws have different
values. Check the Allen Hand Book for correct torque
specifications.