

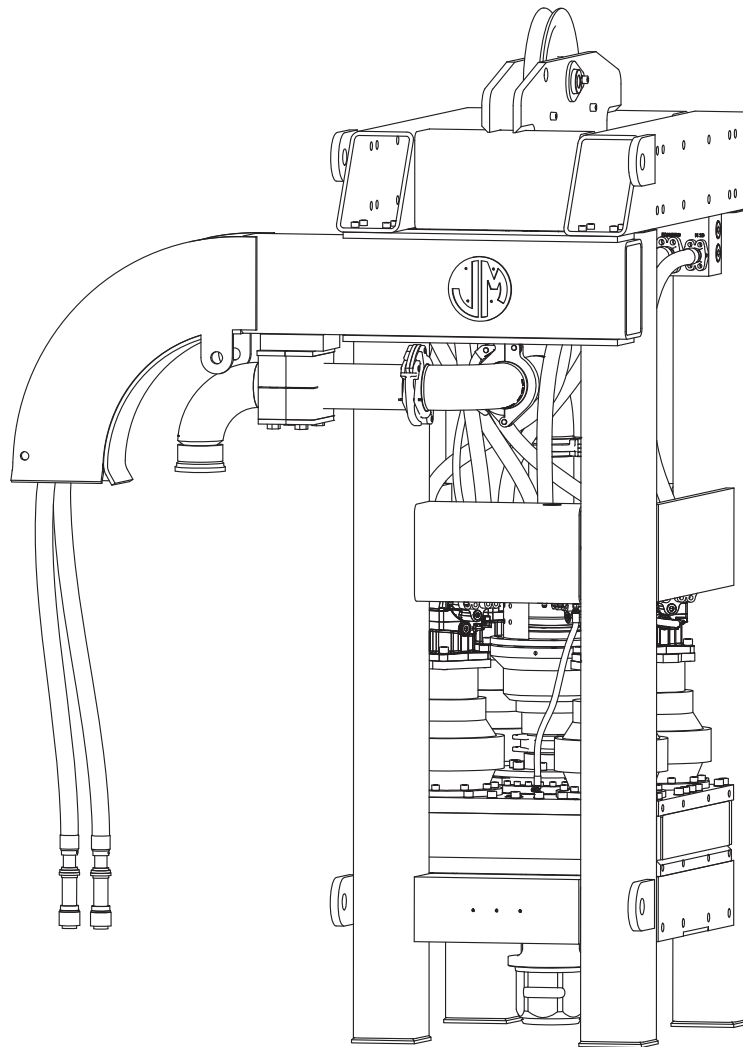


**MODEL 100K
TOP DRIVE
EARTH AUGER**

OPERATING AND MAINTENANCE MANUAL

J&M MODEL 100K

TOP DRIVE AUGER
with J&M 580 POWER UNIT



**J&M FOUNDATION
EQUIPMENT, LLC**

OM-100K/580-0414

SPECIALIZING IN PILE DRIVING EQUIPMENT



**MODEL 100K
TOP DRIVE
EARTH AUGER**

J&M MODEL 100K
TOP DRIVE EARTH AUGER
WITH J&M MODEL 580 POWER UNIT
OM-100K/580-0712

PREFACE

INFORMATION This manual was prepared to acquaint the owner, operator and serviceman with the operation and maintenance of the top drive earth auger. We strongly suggest that this manual be carefully studied before operating or undertaking any maintenance work on the unit. It is not meant to be all inclusive as to content, and any questions and/or doubt should be directed to J&M before proceeding with any operation or maintenance.

This manual is organized into two major categories.

The first category is for OPERATING INSTRUCTIONS of the unit and includes a GENERAL DESCRIPTION section, which presents a basic explanation of the driver/extractor specifications. The MAINTENANCE AND ADJUSTMENT section should be referred to for all servicing of equipment. All machines and equipment require systematic, periodic inspection and maintenance, if they are to perform satisfactorily.

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

Manual release date:

J&M reserves the right to update or revise this manual as required, check with J&M for current release date.



**MODEL 100K
TOP DRIVE
EARTH AUGER**

Warranty

**American Piledriving Equipment, Inc. J&M Foundation Equipment LLC
STANDARD WARRANTY**

American Piledriving Equipment, Inc./J&M Foundation Equipment LLC (APE/J&M) warrants new products sold by it to be free from defects in material or workmanship for a period of one year after the date of delivery to the first user and subject to the following conditions:

APE/J&M's obligation and liability under this WARRANTY is expressly limited to repairing or replacing at APE/J&M's option, any parts which appear to APE/J&M 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 APE/J&M or the authorized APE/J&M distributor of the product during regular working hours. This WARRANTY, shall not apply to component parts or accessories of products not manufactured by APE/J&M and which carry the warranty of the

manufacturer thereof, or to normal maintenance (scraped and scived lube and fuel lines, worn cushion material in the drive base) or normal maintenance parts (such as fouled injectors, weakened check valve springs, damaged grease zirts caused by use over time). 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. APE/J&M makes no other warranty, expressed or implied and makes no warranty of merchantability of fitness for any particular purpose.

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

**ANY TYPE OF WELDING ON EQUIPMENT
WILL VOID THE WARRANTY**

Refusal: Vibros: If the pile does not move one foot in 30 seconds of vibro operation at full speed. Resort to a larger vibro. APE/J&M equipment may exceed the refusal driving criteria for short periods of time as may be needed to penetrate hard soil layers or obstacles. In such cases, a heat gun is used to monitor the temperature of the bearings and related components to prevent use of the machine beyond 210 degrees. Contact APE/J&M or your local APE/J&M distributor for special instructions when faced with refusal conditions.

Refusal: Diesels: Do not exceed 10 blows per inch or 120 blows per foot. In cases of setting of the pile it is permitted to increase the blow count to 250 blows per foot, but only for one foot of driving penetration. Pile inspectors should consult the APE factory for permission to exceed these limits. Failure to do so will void the warranty. This standard specification is accepted by the DFI (Deep Foundations Institute) and the PDCA (Pile Driving Contractors Association) and by all manufacturers of pile driving equipment.



**MODEL 100K
TOP DRIVE
EARTH AUGER**

TABLE OF CONTENTS

<u>I.</u>	<u>GENERAL DESCRIPTION</u>	<u>PAGE</u>
	A. General	I- 1
	B. Top Drive	I- 2
	C. Rotary Joint	I- 2
	D. Power Unit	I- 2
	E. Hoses	I- 2
	F. Lead Guides	I- 2
	G. General Description	I- 2
	H. Specifications	I- 3
<u>II.</u>	<u>PREPARATION FOR OPERATING</u>	
	A. General	II- 1
	B. Safety Precautions	II- 1
	C. Rigging of Earth Auger	II- 4
	D. Connection of the Output Flange	II- 4
	E. Connection of 200MM Female Hex to Flighting	II- 5
	F. Connection of Hex Shaft to Flighting	II- 7
	G. Connection of Hydraulic Hoses	II- 7
	H. Bleeding Hydraulic Speed Control Hoses	II- 8
	I. Filling Auger Forward and Reverse Hoses	II- 8
<u>III.</u>	<u>OPERATING INSTRUCTIONS</u>	
	Control Panel with Remote Pendant	III- 1
	A. Completion of Set-Up and Maintenance	III- 2
	B. Control Panel	III- 2
	C. Starting and Warming Up Engine	III- 3
	D. Warming Hydraulic Fluid	III- 4
	E. Operation of Control Pendant	III- 4
	F. Shutdown	III- 5
<u>IV.</u>	<u>MAINTENANCE AND ADJUSTMENTS</u>	
	A. General	IV- 1
	B. Daily	IV- 1
	C. 100 Hours, 500 Hours and Other	IV- 3
	D. Annually	IV- 3
	E. Severe Conditions	IV- 3
	F. Lubrication	IV- 4
	G. Capacities	IV- 7
	H. Draining and Filling Hydraulic Fluid Reservoir	IV- 8
	I. Changing Hydraulic Return Filter Element	IV- 8
	J. Bolt Torque Information	IV- 9



**MODEL 100K
TOP DRIVE
EARTH AUGER**

TABLE OF CONTENTS

V. <u>HYDRAULIC CIRCUITRY</u>	<u>PAGE</u>
A. Speed / Torque Control	V- 2
B. Auger Drive	V- 2
C. Vibrator Drive	V- 3
D. Other	V- 3
Hydraulic Schematic	V- 4
E. Hydraulic Components List	V- 5
VI. <u>ELECTRICAL CIRCUITY</u>	
A. Starting Diesel Engine	VI- 1
B. Stopping Diesel Engine	VI- 1
C. Safety Control System	VI- 2
D. Selecting High Torque	VI- 3
E. Selecting High Speed	VI- 3
F. Starting Auger Forward	VI- 3
G. Stopping Auger	VI- 3
H. Starting Auger Reverse	VI- 3
I. Other	VI-4
Electrical Layout	VI- 5
Electrical Schematic	VI- 6
I. Electrical Components List	VI- 7
VII. <u>GENERAL DATA</u>	
A. Abbreviations	VII- 1
B. Screws and Bolts	VII- 1
C. Serial Number Locations	VII- 2
VIII. <u>ORDERING PARTS</u>	
A. Procedure	VIII- 1
B. Fitting Description Key	VIII- 2
Fitting Style Selector Chart - SC1	VIII- 3
C. Hose Description Code	VIII- 4
D. Parts Identification	VIII- 5
Parts Lists and Drawings	VIII-6-VIII-47
E. Miscellaneous Accessories	VIII-48
F. Recommended Spare Parts	VIII-52
G. Recommended Tightening Torque	VIII-55



MODEL 100K
TOP DRIVE
EARTH AUGER



MODEL 100K TOP DRIVE EARTH AUGER

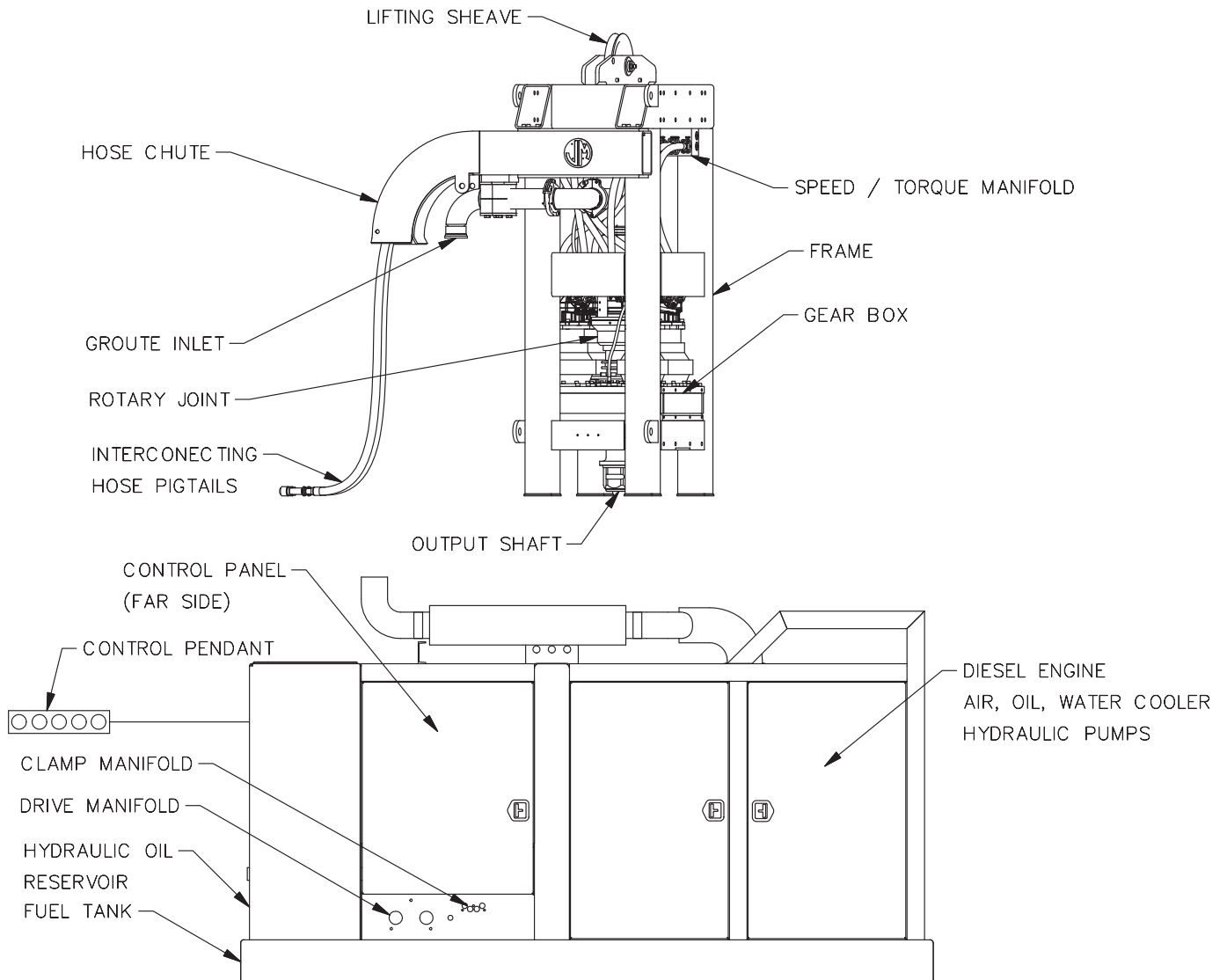
OPERATING INSTRUCTIONS

A. GENERAL

The J&M Model 100K is a top drive earth auger designed to drill holes using continuous flighting for cast in place pile. As well as any other use you may have for a top drive unit.

The Model 100K operates as a two speed top drive earth auger. At full engine RPM High Speed rotates 50 RPM and in High Torque it rotates at 25 RPM. You can use the engine RPM to adjust the top drive RPM to attain speeds below these. The unit produces 110,000 ft-lbs of torque at the output shaft.

The top drive unit consists of two major components. (1) The top drive earth auger and (2) the hydraulic power unit with control pendant.





**MODEL 100K
TOP DRIVE
EARTH AUGER**

**OPERATING
INSTRUCTIONS**

I. GENERAL DESCRIPTION

B. TOP DRIVE

The top drive consists of three major components; The frame, gear case and the terminal manifold. The frame contains all of the components of the unit. The gear case contains four hydraulic motors which spin gear reducers which spin pinion gears in combination spin the output shaft. The terminal manifold divides the hydraulic oil flow to the motors. When High Torque is needed all four motors get the same volume and pressure of hydraulic oil. When High Speed is needed all the the hydraulic oil flow is directed to only two of the motors.

C. ROTARY JOINT

The rotary joint allows grout or concrete to be pumped through the top drive auger and down the hollow shaft of the flighting. Two sizes of rotary joints are available for the 100 K. The 3 inch Rotary Joint is ideal for pumping grout. The 5 inch Rotary Joint is large enough to allow pumping concrete. Both sizes use the joint connection from ConForms.

D. POWER UNIT

The Model 100K Top Drive Earth Auger is powered by the APE Model 595 Power pack. The 595 power pack is powered by a Caterpillar C-15 diesel engine. The engine develops 595 gross horsepower (444kW) at 2100 RPM, and is mounted on a tubular sub-base which serves as a fuel tank. The Power Unit and Top Drive Auger are operated from the control panel or control pendant.

E. HOSES

A hydraulic hose bundle (multiple hoses) connects the hydraulic power unit to the vibrator unit.

F. LEAD GUIDES

Lead Guide systems are designed to accommodate U-37, ST150 and ST190 leads. These systems are bolted on and easily changed.

G. GENERAL DESCRIPTION

The top drive auger is operated by a hand-held control pendant. The control pendant has three, two-way switches and one push button. One switch (SLOW-FAST) raises and lowers the diesel engine speed. The second switch (REVERSE-OFF-FORWARD) starts and stops the top drive auger for forward rotation (CW) or reverse rotation (CCW). The other switch (HIGH TORQUE-HIGH SPEED). The (red mushroom) push button (EMERGENCY STOP) shuts down the diesel engine instantly, in the event of an emergency. Note: Controls are duplicated on the control panel in case the pendant is damaged. (See pg. III-5, Section E-e)



**MODEL 100K
TOP DRIVE
EARTH AUGER**

**OPERATING
INSTRUCTIONS**

H. SPECIFICATIONS

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

INFORMATION

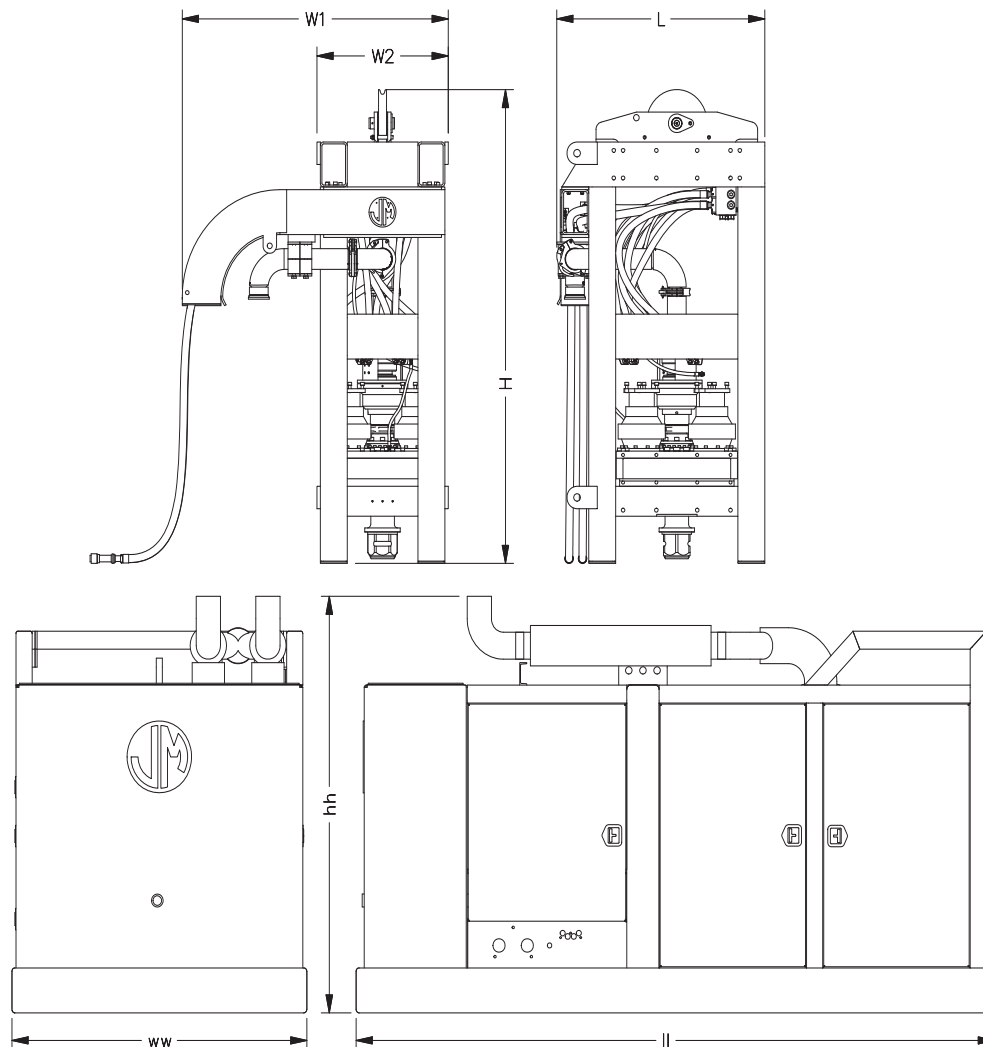
Always consult APE / J&M in your area for current or additional information you may require.

2. Model 100K Top Drive Auger

High Torque. 110,000 ft-lbs @ 25RPM (15,208 kg-M)
 Low Torque.....55,000 ft-lbs @ 50RPM (7,604kg-M)
 Thrust Capacity80,000 lbs (36,287kg)
 Weight Bare9,500 lbs (4,309kg)
 Length [L] 62 in. (1575cm)
 Width [W1] 79 in. (2007cm)
 Width Lead Section[W2] 36 in. (915cm)
 Height [H] 127 in. (3226cm)

3. MODEL 595 POWER UNIT

Type Diesel
 Engine CAT C-15
 Horsepower (2100 RPM) 595(444kW)
 Weight 19,200 lbs (8,709kg)
 Length[ll] 152in. (3861mm)
 Width [ww]..... 82in. (2083mm)
 Height [hh]..... 95 in. (2413mm)





MODEL 100K
TOP DRIVE
EARTH AUGER

OPERATING INSTRUCTIONS



MODEL 100K
TOP DRIVE
EARTH AUGER

OPERATING INSTRUCTIONS

II. PREPARATION FOR OPERATION

A. GENERAL



When unloading and unpacking the top drive earth auger, 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 very important and is everyone's responsibility that operates this equipment or services this equipment.



Use the following safety precautions as a general guide to safe operations, when in doubt consult APE/J&M before proceeding with any operation that may produce an unsafe result. These safety guidelines do not constitute all possible safety issues that may occur during operation or maintenance.

1. Read this manual thoroughly before operating or working on the equipment.
2. Read and follow any safety instructions in the CATERPILLAR engine operators manual.
3. Only well trained and experienced personnel should attempt to operate or maintain this equipment.
4. Never adjust, lubricate or repair the unit when it is in operation, or lifted above ground level.
5. Never remove, paint over or cover warning or safety labels. If labels become damaged or unreadable, replace immediately.
6. All personnel should wear approved safety clothing, including **HARD HATS, SAFETY SHOES, SAFETY GLASSES** and **HEARING PROTECTION** when in the vicinity of this machinery.
7. Do not stand any closer to this equipment than necessary when it is in operation. Parts may loosen and fall. Never stand under operating, or elevated, equipment.
8. When maintaining or repairing the equipment, never substitute parts not supplied, or approved in writing, by APE/J&M.
9. Do not weld, or flame cut, on this equipment.
10. Never use or store flammable liquids on or near the engine.
11. Insure that all lifting equipment, including cranes, wire rope, slings, hooks, shackles, etc., are properly sized for the worst case loads anticipated during operations.
12. If there are any questions about the weights, specifications, or performance of the unit, contact APE/J&M before handling or operating the equipment.
13. If the equipment is to be used for anything other than drilling plumb holes, contact APE/J&M before using the unit.
14. Check wire rope clips for tightness, and check wire ropes for wear, daily.



**MODEL 100K
TOP DRIVE
EARTH AUGER**

**OPERATING
INSTRUCTIONS**

II. PREPARATION FOR OPERATION

B. SAFETY PRECAUTIONS (CONTINUED)

15. Insure that ground vibrations will not damage or collapse adjacent structures or excavations.
16. Remove all tools, parts and electrical cords before starting the unit.
17. When operating in an enclosed area, pipe exhaust fumes outside. Continued breathing of exhaust fumes may be fatal.
18. When servicing batteries, do not smoke or use open flames in the vicinity. Batteries generate explosive gas during charging. There must be proper ventilation when charging batteries.
19. When filling fuel tank, do not smoke or use open flame in the vicinity.
20. If abnormal equipment operation is observed, discontinue use immediately and correct the problem. Do not leave the equipment control pendant (radio control) unattended.
21. Store oily rags in approved containers, and away from engine exhaust system.
22. Make sure that the earth auger is OFF before starting the power unit engine.
23. Do not adjust, or set, hydraulic pressures higher or lower than those specified in this manual.
24. Never operate this equipment with hydraulic hoses that are damaged or "kinked". Replace damaged hoses immediately.
25. Do not lift, or support, hydraulic hoses with wire rope slings.
26. Never attempt to connect quick disconnects when the power unit is running.
27. Do not pull on, or attempt to move equipment, with hydraulic hoses.
28. Do not attempt to locate hydraulic leaks with your hands. High pressure hydraulic leaks can penetrate the skin, causing severe damage, blood poisoning and infection. Do not attempt to repair leaks while the equipment is in operation.
29. Do not attempt to tighten, or loosen, fittings or hoses when the machine is in operation.
30. Power unit must always be placed on level, stable, ground.
31. Do not remove power unit heat shields, or operate power unit without heat shields. Severe fires may result.
32. A properly maintained fire extinguisher, suitable for oil fires, must be kept in the immediate vicinity of equipment operations.
33. When moving or transporting this equipment, insure that the vehicle or vessel is of sufficient capacity to handle the load, and that the equipment is properly tied down.
34. When moving or transporting this equipment, be sure that quick disconnect dust caps are tight, and that cap safety cables are in place. Be sure that all equipment parts are tight, or properly secured, before shipment. Unsecured parts may vibrate loose and fall, during transport, causing injury or property damage.
35. Keep crane boom, piles, leads, wire rope and other equipment at least 15' (5M) from electrical power lines, transformers and other electrical equipment, or at such distance as required by applicable safety codes.



MODEL 100K
TOP DRIVE
EARTH AUGER

OPERATING INSTRUCTIONS

II. PREPARATION FOR OPERATION

B. SAFETY PRECAUTIONS (CONTINUED)

36. Rounded or damaged bolt heads or nuts should be replaced so that proper torque values may be obtained. Proper torque values are necessary to prevent parts on this equipment, leads and crane boom from loosening and falling. Refer to Torque Chart, in this manual, for proper values.
37. Keep hands away from clamp jaws.
38. When drilling "batter" piles, insure that the leads, and crane boom, have sufficient bending strength to handle the worst case load. Consult APE/J&M.

REMEMBER, SAFETY IS EVERYONE'S BUSINESS.



**MODEL 100K
TOP DRIVE
EARTH AUGER**

OPERATING INSTRUCTIONS

II. PREPARATION FOR OPERATION

C. RIGGING OF EARTH AUGER

A steel wire rope sling must be connected to the lifting sheave. 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.



All rigging of either the hydraulic power unit or top drive auger must be done in accordance with standard rigging guide lines set forth in ASTM standards; APE/J&M does not assume responsibility for incorrect rigging or procedures.

D. CONNECTION TO THE OUTPUT FLANGE

The earth auger is usually shipped with the hex coupler already attached.

If the hex coupler is not attached, it will be necessary to attach it to the bottom of the output flange.

1. Install Conforms GROUT SEAL into ID groove in machined SEAL RING (3" = 400502 / 5" = 400528)
2. Grease lubricate the appropriate GROUT SEAL ID, and slide the seal/ring assembly (step#1) halfway onto the SLINGER TUBE, located within the auger OUTPUT SHAFT.
 - a. The triangular protrusion, inside the GROUT SEAL, should stop the seal installation at the halfway point.
3. Carefully slide the OUTPUT FLANGE into position on the end of the auger OUTPUT SHAFT, being careful that the "tubular nose" on the OUTPUT FLANGE slides easily into the previously installed GROUT SEAL.
 - a. **DO NOT APPLY EXCESSIVE FORCE.**
 - b. If binding or excessive resistance is encountered, remove the OUTPUT FLANGE and check the GROUT SEAL for damage.
 - c. Repeat (step#2)
4. Insure that all 16 tapped holes on the end of the output shaft are clear and clean.
5. Align the eight 15/16" Ø (24 mm Ø) bolt holes in the OUTPUT FLANGE with tapped holes in the OUTPUT SHAFT, attach Schnoor lock washers, and screw in eight .875-9UNC X 3.75" Long SHCS until the flange contacts the shaft.
 - a. Apply anti-seize lubricant to threads
 - b. Finger tight only
6. Insert eight .875-9 UNC STUDS through 1.375"Ø holes in the OUTPUT FLANGE.
 - a. Apply anti-seize lubricant to threads
 - b. Square end of STUD facing outward



**MODEL 100K
TOP DRIVE
EARTH AUGER**

**OPERATING
INSTRUCTIONS**

II. PREPARATION FOR OPERATION

D. CONNECTION TO THE OUTPUT FLANGE (CONTINUED)

7. Screw STUDS into the OUTPUT SHAFT until the shoulder on the STUD contacts the OUTPUT SHAFT.
 - a. Finger tight only
8. Apply anti-seize lubricant to the tapered portions of the FEMALE COLLET (400554) and MALE COLLET (400556).
9. With the large ID end of the FEMALE COLLET facing outward, insert eight FEMALE COLLETS into 1.375"Ø holes in the OUTPUT SHAFT, and push all the way to the bottom of these holes.
10. With the small tapered end of eight MALE COLLETS facing inward, push these collets into 1.375"Ø holes until they contact the FEMALE COLLETS.
11. Prevent OUTPUT FLANGE from turning
 - a. Use appropriate chain wrench on flange, or block flighting
12. Lightly tighten the eight .875-9UNC X 3.75" Long SHCS.
 - a. By hand with short hex key
13. Assemble hardened FLAT WASHERS and .875-9UNC HEX NUTS onto the STUDS, and torque nuts to 450 FT. LB.
 - a. Torque in 150 FT. LB increments, in a crossing pattern
 - b. Apply anti-seize lubricant to threads
14. Torque eight .875-9UNC X 3.75" Long SHCS to 600 FT. LB.
 - a. Torque in 150 FT. LB increments, in a crossing pattern

E. CONNECTION OF 200MM FEMALE HEX TO FLIGHTING

The standard output shaft uses the 200mm hex coupler. The flighting and female hex coupling must be prepared correctly to have them welded together. Please follow the directions below:

The parts needs to be clean, free of rust, no oil or grease. Preheat the coupler as well as the flighting pipe to between 400-600 degrees. Weld the entire coupler without stopping with 80,000 tensile strength wire. After finishing welding check temperature and wrap with thermal blanket and let cool to half of the after weld temperature then preheat to half of what the post temperature is and the warp again with thermal blanket and let cool completely.



**MODEL 100K
TOP DRIVE
EARTH AUGER**

**OPERATING
INSTRUCTIONS**

II. PREPARATION FOR OPERATION

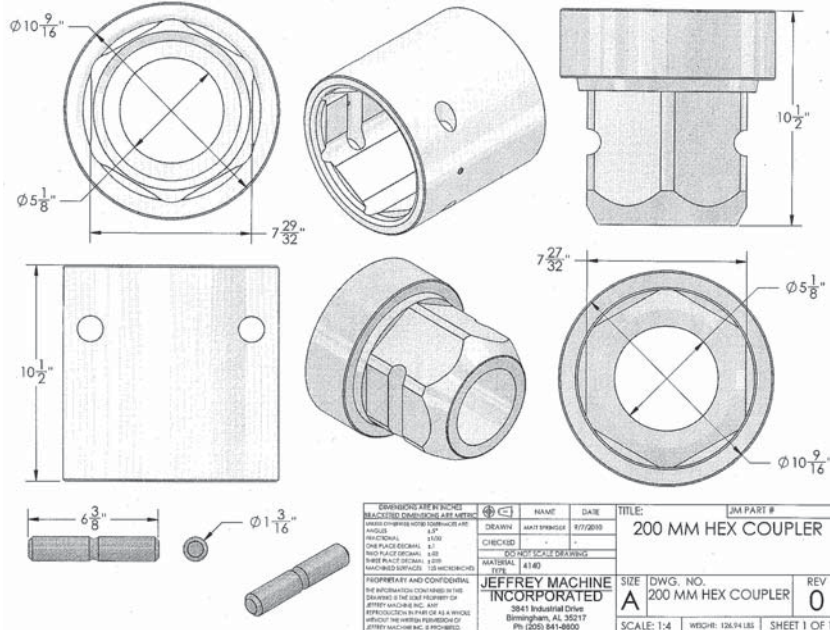


Fig.1

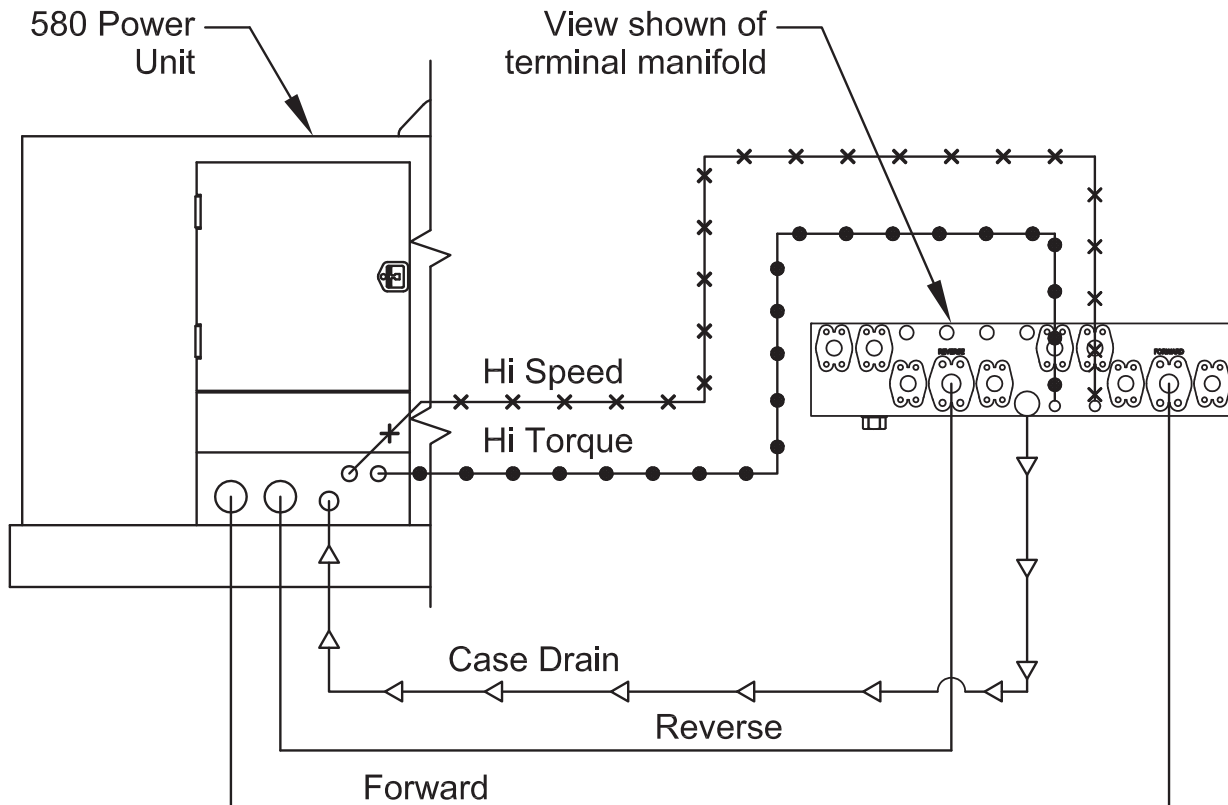


Fig.2



**MODEL 100K
TOP DRIVE
EARTH AUGER**

OPERATING INSTRUCTIONS

II. PREPARATION FOR OPERATION

F. CONNECTION OF HEX SHAFT TO FLIGHTING

The standard output 200mm male hex needs to be lined up with female hex on flighting. Place grout seal (400446) in groove on the nose of the male hex. Slide the flighting onto the male hex until the holes in the female line up with grooves in the male. Place a pin in a hole, center the pin and insert and tighten set screw. Repeat by inserting the other pin and set screw.

G. CONNECTION OF HYDRAULIC HOSES

1. Connection of hoses at power unit.

a. The auger is connected to the power unit by five hydraulic hoses (Fig. 2) on the previous page.



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. Hose couplers are arranged to insure correct connections at the power unit. See the diagram (Fig. 2) for correct hose connection.

c. Clean couplers with a lint-free cloth before making connections.



Do not use engine starting fluid to clean quick disconnects, this will damage the seals and result in an oil leak.

d. Make sure that the couplers are fully run up, and hand tightened only, do not use wrenches to over tighten.

2. Connection of hoses at auger.

a. The auger is usually shipped with the hoses attached to the auger. If the hoses have been shipped separately, they must be connected in the field. Fig. 2 shows the correct arrangement of the five hoses connecting the power unit to the auger.



Starting the auger with the hoses reversed will result in operations backwards from labeled controls.



**MODEL 100K
TOP DRIVE
EARTH AUGER**

OPERATING INSTRUCTIONS

II. PREPARATION FOR OPERATION

H. BLEEDING HYDRAULIC SPEED CONTROL HOSES

1. When the auger is shipped with all hoses attached, the hoses are usually full of fluid and may be used immediately. However, if any of the speed control hoses are connected at the jobsite or if air is present in hoses, they must be bled prior to operation.
2. Read SECTION III - OPERATING INSTRUCTIONS.



Use caution when bleeding any hydraulic lines, even low hydraulic pressure can cause injury to personnel.

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 1500 RPM, remove the high speed line at the auger. Turn the high speed switch on the control pendant to HIGH SPEED. Wait until fluid flows from the end of the hose. When fluid flows without air, shut of engine and replace the hose to the auger and tighten the connection.
5. With the engine warmed-up and running at 1500 RPM, remove the high torque line at the auger. Turn the high torque switch on the control pendant to HIGH TORQUE. Wait until fluid flows from the end of the hose. When fluid flows without air, shut of engine and replace the hose to the auger and tighten the connection.

I. FILLING AUGER FORWARD AND REVERSE HOSES

1. The auger is usually shipped with the forward and reverse hydraulic hoses full of fluid and the unit may be used immediately. However, if the forward or reverse hose has been removed from the vibrator, the hose should be allowed to fill with hydraulic fluid prior to full speed 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 1000 RPM and in the “High Torque” position, turn and hold the switch to REVERSE. The hoses will fill in approximately 5 minutes.



The auger will begin rotating shortly after the switch is turned. Allow it to run to be sure the hoses are full before work is started.



MODEL 100K
TOP DRIVE
EARTH AUGER

OPERATING
INSTRUCTIONS

III. OPERATING INSTRUCTIONS

CONTROL PANEL WITH CONTROL PENDANT

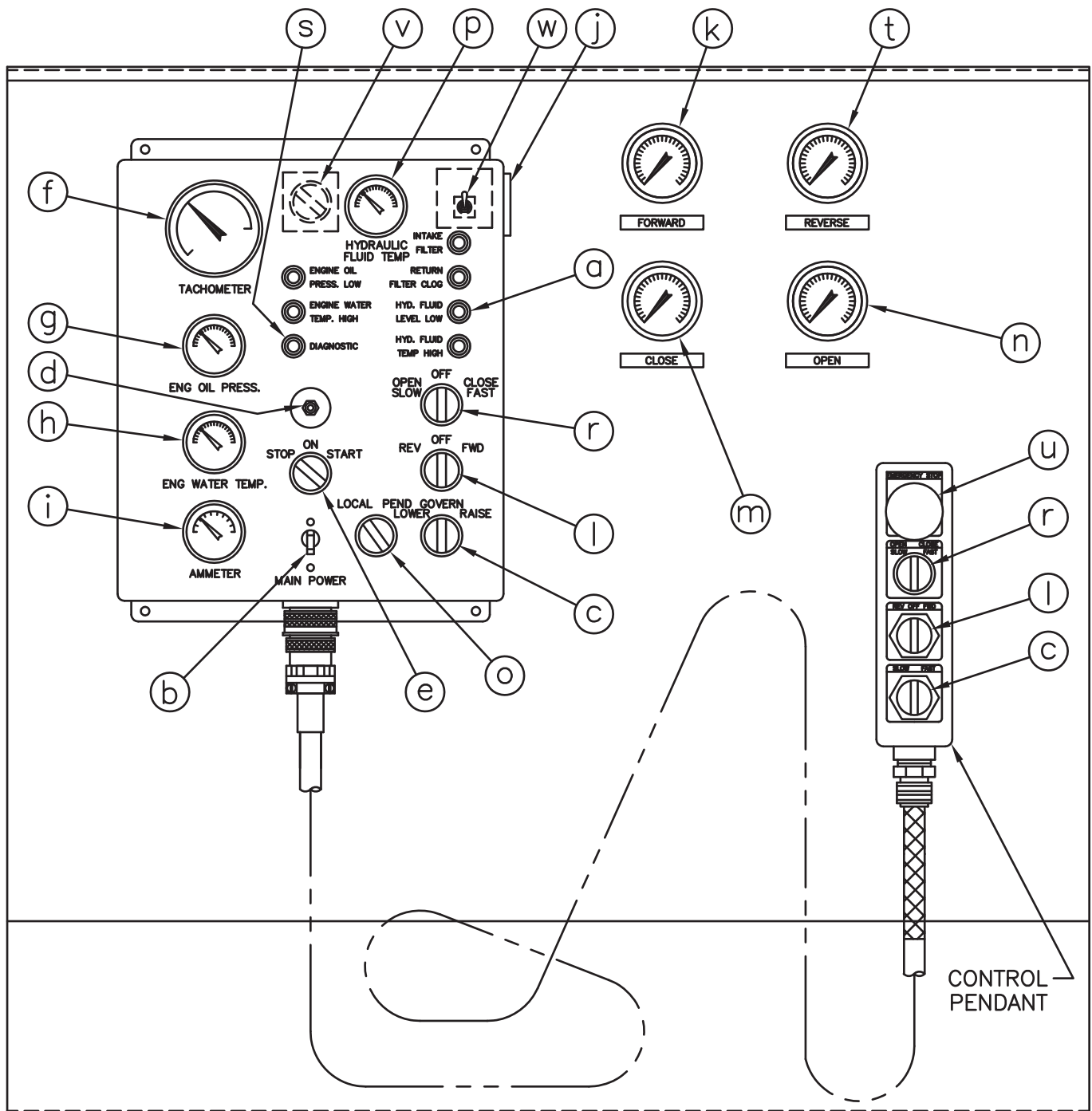


Fig.1



**MODEL 100K
TOP DRIVE
EARTH AUGER**

**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, auger, and the OPERATION AND MAINTENANCE INSTRUCTIONS.
2. Control panel contains the following controls and gages:
 - a. Shutdown indicator lights (6) See notes below.
 - b. Main power switch (Circuit Breaker) - on/off switch for 24 volt electrical power.
 - c. Engine throttle.
 - d. Engine shut-down reset button - on start must be held in until oil pressure exceeds 30 PSI.
 - e. Engine "OFF/ON/START" switch - for diesel engine.
 - f. Engine tachometer
 - g. Engine oil pressure gage
 - h. Engine water temperature gage
 - i. Engine volt meter
 - j. Engine hour meter
 - k. Pressure gage - (Drive - Forward)
 - l. FOR/REV switch
 - m. Pressure gage - (Close)
 - n. Pressure gage - (Open)
 - o. Local-Pendant switch
 - p. Hydraulic Fluid temperature gage
 - r. Speed / Torque switch
 - s. Diagnostic light
 - t. Pressure gage - (Drive - Reverse)
 - u. Emergency Stop - Push to stop engine
 - v. Auger-Vibro switch
 - w. Normal-Test switch

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



**MODEL 100K
TOP DRIVE
EARTH AUGER**

OPERATING INSTRUCTIONS

III. OPERATING INSTRUCTIONS

B. CONTROL PANEL (CONTINUED)

3. Intake Filter shutdown indicator - comes on if the engine has been shut down automatically due to the engine air filter being clogged.
4. Return Filter Clog shutdown indicator - comes on if the engine has been shut down automatically due to the hydraulic 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 the engine has been shut down automatically due to high hydraulic oil temperature.

The Diagnostic light indicates when the engine fault code is flashing for CAT software.



The OPERATION AND MAINTENANCE INSTRUCTIONS on the control panel are there as reminders only. They are not complete and therefore not intended to substitute for a thorough understanding of the Operating Manual.

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 fluid is below 0°F(-18°C). The temperature may be read on the gage on the hydraulic reservoir. If ambient temperatures below 0°F(-18°C) are anticipated, an immersion heater for the hydraulic fluid is available. Consult J&M for details.
3. Turn the switch to SLOW.
4. Hold SHUTDOWN RESET button in and turn the ENGINE START switch to START position. Release the shutdown reset button after engine oil pressure exceeds 30 psi. If the engine fails to start after 30 seconds of cranking, allow the starter to cool for two minutes before repeating the starting procedure.
5. As the engine starts, release the ENGINE START switch. It will return to the RUN position.
6. Adjust the throttle until the engine is running at 1500 RPM and allow to warm-up for five minutes.
7. Allow the temperature of the hydraulic fluid to come up to at least 30°F(-1°C) before starting auger.



**MODEL 100K
TOP DRIVE
EARTH AUGER**

**OPERATING
INSTRUCTIONS**

III. OPERATING INSTRUCTIONS

D. WARMING HYDRAULIC FLUID

1. The auger should not be operated at full speed if the temperature of the hydraulic fluid is below 70°F(21°C). Check gage on the reservoir.
2. If temperature of the hydraulic fluid is below 70°F(21°C), set the diesel engine at 1500 RPM and run the auger as reduced speed until the temperature of the hydraulic fluid exceeds 70°F(21°C).
3. When the engine is warmed up and hydraulic fluid temperature is at least 70°F(21°C), full speed operation may begin. Adjust the throttle so the engine is running at 2200 RPM unloaded. the Engine should maintain about 2200 RPM under load.



Do not operate the auger if the hydraulic fluid temperature exceeds 180°F(82°C) as this may damage hydraulic components.

E. OPERATION OF CONTROL PENDANT

1. The operation of the auger is controlled by the control pendant. The control pendant is connected to the control panel with 50 feet of electrical cable to permit operation from any advantageous position to view the auger. (Consult J&M for pendant extensions)
2. The pendant has three, three-way switches, one with an indicator light and an Emergency Stop button.
 - a. To Start Rotation:

Select High Speed (FAST) or High Torque (SLOW). Turn the drive switch to FORWARD for clockwise rotation or REVERSE for counter clockwise rotation.

- b. To Stop Rotation:

Turn the drive switch to OFF.

NOTE: Accidentally turning the switch to REVERSE normally has no effect and will not cause damage. It is better for the auger if you wait until the fighting stops spinning before changing the direction of rotation.

- c. To change speed you may switch from FAST to SLOW or from SLOW to FAST. The speed difference is either going to be 2X faster or half as fast. Shifting from one to the other can be done at any time or in either direction.



**MODEL 100K
TOP DRIVE
EARTH AUGER**

OPERATING INSTRUCTIONS

III. OPERATING INSTRUCTIONS

E. OPERATION OF CONTROL PENDANT (CONTINUED)

- d. To change engine speed:

Turn the Throttle switch (LOWER-RAISE) to LOWER and the engine speed will decrease. Turn the switch to RAISE and the engine speed will increase. Momentarily turning the throttle switch to RAISE or LOWER during operations will adjust engine speed, and therefore auger speed, to facilitate the desired rotation rate.

- e. Emergency stop button:

Push the EMERGENCY STOP button in and all operating functions will cease to operate. Diesel engine and auger will stop immediately.

- f. If the control pendant is damaged or the pendant line is cut, you may still operate the auger by using the control switches on the control panel (See Fig. 1 on page III-1. On the control panel there is a switch labeled "LOCAL-PENDANT". Turn the switch to LOCAL and the switches on the control panel will be functional, and the Control Pendant will be disabled.

F. SHUT DOWN

1. Stop the auger
2. Allow the diesel engine to run for five minutes at 1500 RPM.
3. Reduce engine speed to low idle for about thirty seconds.
4. Turn the switch to SLOW-OPEN for 3 seconds and return to the OFF position.

⚠WARNING

If the engine is shut down while the switch is in the FAST-CLOSE position high pressure oil will be trapped in the hose by the check valve in the clamp manifold. Turning the switch to SLOW-OPEN will relieve this pressure and allow the 3/8" quick disconnects to be removed easily and safely.

5. Stop the engine by turning the ENGINE START switch to OFF. (Engine may also be stopped by pushing the EMERGENCY STOP button on the Control Pendant).
6. Flip main power switch to off.



**MODEL 100K
TOP DRIVE
EARTH AUGER**

OPERATING INSTRUCTIONS



**MODEL 100K
TOP DRIVE
EARTH AUGER**

OPERATING INSTRUCTIONS

IV. MAINTENANCE AND ADJUSTMENTS

A. GENERAL

Preventive maintenance includes normal servicing that will keep the top drive auger 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 protective 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. Visually inspect all bolts, nuts and screws, including the bolts fastening the gearbox to the frame and the bolts, studs fastening hex adapter to the output shaft and all grout clamp bolts, to insure they are tight.



CAUTION Vibration loosens bolts - check carefully.

- b. Grease the lifting sheave pin, the rotary joint and the slinger with any good multi-purpose grease. As shown and described in Fig 1 on the following page.
- c. Check the oil level in the lube tank and add oil if required. The oil level should be at half way up the sight glass. Change oil if milky or contaminated. **DO NOT OVERFILL**



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



**MODEL 100K
TOP DRIVE
EARTH AUGER**

**OPERATING
INSTRUCTIONS**

IV. MAINTENANCE AND ADJUSTMENTS

B. DAILY (CONTINUED)

- d. Check the fluid level in the hydraulic reservoir and refill if necessary.
- e. 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.
- f. Electrical components need no maintenance except periodic wiping with a clean, dry, lint-free cloth to remove dust.
- g. Perform all daily maintenance checks and lubrication indicated in the CATERPILLAR OPERATION GUIDE.

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 pump and all hydraulic manifolds for leaks.
- c. Check the filter indicators. 0-17psi = Filter Clean, 18-23psi = Change Filter, 24 + psi = Filter Clogged The return filter on the power pack must be checked with the diesel engine running at full speed.

ON THE INNER SIDE OF THIS TUBE IS THE LUBE OIL SIGHT GLASS. CHECK THIS ONCE EVERY 8 HOUR SHIFT. LUBE OIL SHOULD BE VISABLE AT HALF WAY FULL IN SIGHT GLASS. USE ONLY SCHAEFFER 268 GEAR LUBE J&M P/N 110444

THESE GREASE FITTINGS PROVIDE GREASE TO THE ROTARY JOINT AND THE SLINGER.

- 1. GREASE ROTARY JOINT PACKING BOX WITH 3-5 SHOTS EVERY 2-4 HOURS ALWAYS WHILE ROTATING UNDER NO PRESSURE.
- 2. GREASE ROTARY JOINT BEARING HOUSING AFTER 1 HOUR OF ROTATION UNTIL GREASE EXISTS THE BEARING HOUSING.
- 3. GREASE SLINGER FACE SEAL DAILY THERE IS A RELIEF VALVE UNDER THE SLINGER TO ALLOW YOU TO KNOW WHEN THIS CAVITY IS FULL.

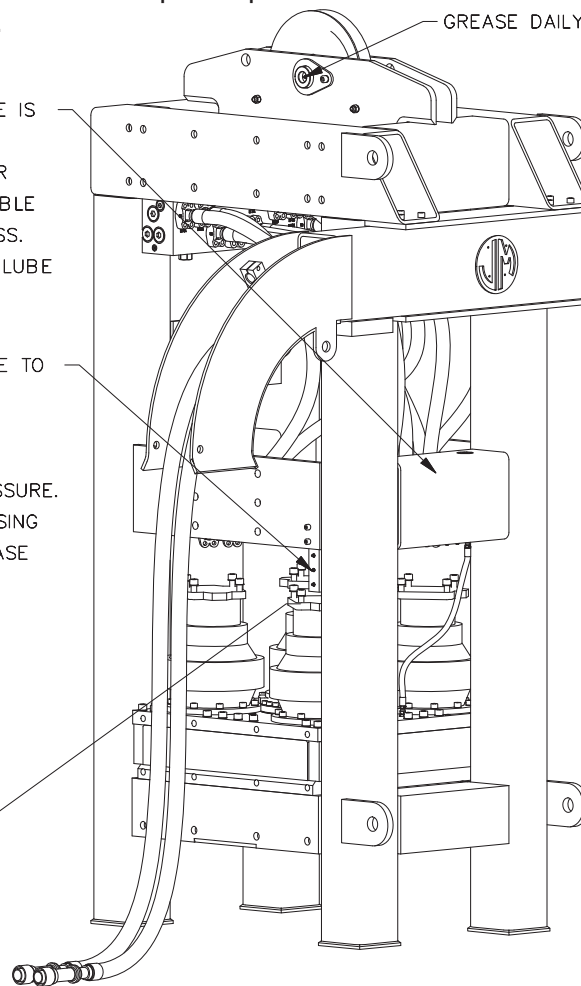
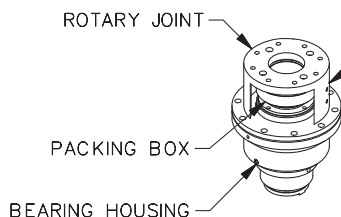


Fig. 1



**MODEL 100K
TOP DRIVE
EARTH AUGER**

OPERATING INSTRUCTIONS

IV. MAINTENANCE AND ADJUSTMENTS

C. 100 HOURS, 500 HOURS AND OTHER

1. Every 100 hours, drain and add new lubricant in the gear case and lube tank.
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. There after change every six months or 2000 hours, which ever comes first.

D. ANNUALLY

1. Have the hydraulic fluid tested by a local hydraulic service center or oil company. Replace if required.

INFORMATION

The frequency with which hydraulic fluid requires changing depends both on the condition of the fluid and the operating conditions involved. The most accurate method for determining how often fluid should be changed is to have a laboratory fluid analysis done periodically.

2. See Caterpillar OPERATION GUIDE.

E. SEVERE CONDITIONS

The servicing intervals specified are based on normal operating conditions. Operation under severe or unusual conditions will require some adjustments in servicing intervals.

1. When the average temperature is above 80°F(26°C) or below -10°F(-23°C), reduce service time intervals by one-half of those specified above.
2. When operating in the presence of dust or sand, reduce service time intervals by one-half of those specified.
3. When operating in excess of twelve hours per day, reduce service time intervals by one-half of those specified.
4. When operating in air with high moisture or salt, 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 fluid tested quarterly.
5. For extended inactive periods, the engine should be started at least once a week and run until thoroughly warm. Servicing time intervals may be extended from those specified, but for actual time intervals, contact your local Caterpillar dealer, especially during lengthy storage periods.



**MODEL 100K
TOP DRIVE
EARTH AUGER**

**OPERATING
INSTRUCTIONS**

IV. MAINTENANCE AND ADJUSTMENTS

F. LUBRICATION (CONTINUED)

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 CH-4.
- c. New engines are shipped with Caterpillar SAE 15W-40 but 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).

ASHLAND	15W-40	400M + HDT
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. (CAT bulletin #SEBU5898-06)

2. 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 products of oil deterioration. Most problems can be minimized or avoided simply by maintaining a disciplined preventive maintenance program.



**MODEL 100K
TOP DRIVE
EARTH AUGER**

**OPERATING
INSTRUCTIONS**

IV. MAINTENANCE AND ADJUSTMENTS

F. LUBRICATION (CONTINUED)

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 fluid 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 fluid is not recommended.

INFORMATION

New power units are shipped with Terresolve Invirological 146 Hydraulic oil. This oil is non-toxic and will not harm soil or water and is biodegradable. Adding any other oil from the list below, will contaminate the Terresolve 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 fluid in the hydraulic system.

FIRST Preference Group:

TERRESOLVE	Invirological 146
CHEVRON	Clarity AW46
MOBIL	DTE-15
SUN	2105

SECOND Preference Group:

ARCO	Duro AW46
CHEVRON	Hydraulic AW46
PHILLIPS	Magnus A46
SHELL	Tellus 46

THIRD Preference Group:

BORON	Energol HLP46
CITGO	A.W. Hydraulic 46
CONOCO	Super 46
EXXON	Nuto H46
GULF	Harmony 46AW
SUN	Sunvis 846
TEXACO	Rando HD AZ46



MODEL 100K
TOP DRIVE
EARTH AUGER

OPERATING INSTRUCTIONS

IV. MAINTENANCE AND ADJUSTMENTS

F. LUBRICATION (CONTINUED)

INFORMATION

Whenever fluids 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 fluids from the third preference group requires even a more discerning inspection than use of fluids from the second group.

The recommended fluids were chosen based on the hydraulic system operating temperature range being 5°F (-15 °C) (cold ambient start-up) to 180°F (82°C) (maximum operating).

INFORMATION

When operating in arctic conditions, it is recommended to use a heater to pre-heat the oil prior to starting. Contact J&M 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.

TERRESOLVE Invirological 146 hydraulic fluid is available from J&M in five gallon cans. See SECTION VIII - ORDERING PARTS.

3. Gear Case / Gear Reducers

The fluid level is easily read through the sight glass located on the inside wall of the lube tank in the center of the frame. The correct level of lubricating oil is half way up the sight glass. The lube tank provides lubrication oil to all gear reducers and gear box by flooding each of them with two hoses. Lubricating oil may be added when necessary, through the hole in the top of the lube tank after removing the #20 SAE plug. To drain the case, remove a 1" pipe plug in the bottom of the gear case.

4. Multi-Pump Drive Adapter

The fluid level is easily checked by removing the dip stick or 1/4 inch 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 breather or 1/2 inch 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 inch socket head pipe plug on the bottom of the Multi-pump Drive Adapter.

5. The preferred lubricating oil for J&M gear cases and multi-pump drive adapters is "High Moly" oil (Schaeffer 268). Longer intervals between fluid changes and fewer maintenance hours spent on mechanical service can generally be realized with this fluid.

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



**MODEL 100K
TOP DRIVE
EARTH AUGER**

**OPERATING
INSTRUCTIONS**

IV. MAINTENANCE AND ADJUSTMENTS

F. LUBRICATION (CONTINUED)

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

- a. The gear case lubricants installed at the factory are 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
PHILLIPS	MP 85W-140
SHELL	Omala 460
SUN	Sunep 1110

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
UNION	MP 85W-140
VALVOLINE	Gear Lub 85W-140

SCHAEFFER 268 Lubricant is available from J&M in five gallon cans. See SECTION VIII ORDERING PARTS.

G. CAPACITIES

1. Diesel Engine Crankcase	38	Quarts
2. Hydraulic System (Reservoir)	435	Gallons
3. Gear Case / Gear Reducers	7	Gallons
4. Fuel Tank Sub-Base (Diesel)	150	Gallons
5. Engine Cooling System	56	Quarts
6. Multi-Pump Drive Adapter	8	Quarts



**MODEL 100K
TOP DRIVE
EARTH AUGER**

OPERATING INSTRUCTIONS

IV. MAINTENANCE AND ADJUSTMENTS

H. DRAINING AND FILLING HYDRAULIC FLUID 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 fluid is pumped to the reservoir through the return filter (F2) to insure no dirt enters the hydraulic system.

I. CHANGING HYDRAULIC RETURN FILTER ELEMENTS

1. The two return filters are located on the hydraulic reservoir below the Control Panel.
2. To remove the return filter elements, remove the 4 hex head bolts from the housing cover. The bypass valve assembly is bolted to the cover.

NOTE: Approximately 1 gallon (3.8L) of hydraulic oil will be lost.

3. Remove and separate the two elements. Save the plastic element connector; The use of J&M filter elements is strongly recommended. Always use support springs installed inside of the elements. Remove and reuse the support springs from the old elements if new springs are not supplied.
4. Clean filter housing interior and all component parts with a lint free rag.
5. Check cover 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 cover with bypass valve assembly.



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

8. Repeat for second filter assembly.
9. With new return filter elements installed, start the power unit and run for approximately three minutes. **CHECK FOR LEAKS.**



**MODEL 100K
TOP DRIVE
EARTH AUGER**

**OPERATING
INSTRUCTIONS**

IV. MAINTENANCE AND ADJUSTMENTS

J. BOLT TORQUE INFORMATION

Torque, in foot-pounds, is determined by the length of the wrench handle (in feet) multiplied by the weight (or force in pounds) applied at the end of the handle. For example, if the wrench is one foot long and five pounds of force is applied at the end of the handle, the total torque applied would be five foot pounds. A six inch wrench would require ten pounds of force to obtain five foot pounds of torque.

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 auger assemblies listed. Whenever any of these bolts, are installed or replaced, the given torque specifications should be adhered to.

AUGER FINAL ASSEMBLY Page VIII-6,7 & 8

Item 41	1/2"-13	119 Ft-Lbs (16.4 Kg-M)
Item 22, 30, 36	5/8"-11	233 Ft-Lbs (32.3 Kg-M)
Item 6	3/4"-10	417 Ft-Lbs (57.6 Kg-M)
Item 35	7/8"-9	676 Ft-Lbs. (93.4 Kg-M)

GEAR CASE Page VIII-10 &11

Item 5	1/2"-13	119 Ft-Lbs (16.4 Kg-M)
Item 23	5/8"-11	233 Ft-Lbs (32.3 Kg-M)
Item 11, 25	3/4"-10	417 Ft-Lbs (57.6 Kg-M)

5 INCH HEX OUTPUT STEM Page VIII-40

Item 4	3/4"-10	417 Ft-Lbs (57.6 Kg-M)
Item 10, 14	7/8"-9	676 Ft-Lbs. (93.4 Kg-M)

LEAD GUIDES Page VIII-44

Item 9, 12, 13	1"-8	1,009 Ft-Lbs (139.4 Kg-M)
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**MODEL 100K
TOP DRIVE
EARTH AUGER**

**OPERATING
INSTRUCTIONS**

V. HYDRAULIC CIRCUITRY

A. SPEED / TORQUE CONTROL

With the diesel engine running, hydraulic oil is taken from the reservoir by the CLAMP PUMP (P2). The clamp pump flows oil to the clamp manifold and flow returns to the reservoir if the speed torque switch has not been moved. Returning oil is filtered by the return filter (F2).

Turning the Speed / Torque switch to FAST activates the CLOSE SOLENOID on the CLAMP VALVE (V1), Hydraulic oil is directed to FV and RV valves. This directs all drive flow to only 2 of the drive motors. FAST will provide the maximum speed of the output shaft. In the FAST setting the auger is also running at half of the maximum torque. Turning the switch to SLOW activates the OPEN SOLENOID on the CLAMP VALVE (V1), hydraulic oil is directed to SV valve. This directs the drive flow to all 4 drive motors. SLOW will provide the maximum torque to the output shaft. In the SLOW setting the rotation speed is half of max. The clamp valve relief valve is set at 4500 PSI (310 Bar).

B. AUGER 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 the RETURN FILTERS (F2), if the auger switch is in the OFF position.

Turning the auger switch to FORWARD activates the FORWARD SOLENOID on the CONTROL VALVE (V2), directing pump flow to the AUGER MOTORS (M). This will cause the output shaft to spin Clockwise (CW).

Turning the auger switch to REVERSE activates the REVERSE SOLENOID on the CONTROL VALVE (V2), directing pump flow to the AUGER MOTORS (M). This will cause the output shaft to spin Counter Clockwise (CCW).

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 4500 PSI (310 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 AUGER MOTORS (M) returns to the power unit. 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). Case drain oil from the motors returns to the reservoir. Case drain pressure is limited to 65 PSI (4.5 Bar) by the CASE DRAIN RELIEF VALVE (RV3).



**MODEL 100K
TOP DRIVE
EARTH AUGER**

**OPERATING
INSTRUCTIONS**

V. HYDRAULIC CIRCUITRY

B. AUGER DRIVE (CONTINUED)

Returning the Auger Switch to the center OFF position de-energizes control valve (V2), and again opens cartridges CA1 and CB1 which allows pump flow to return to the reservoir without driving the auger.

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.

C. VIBRATOR DRIVE

To convert the 580 Power unit to operate a J&M, or similar vibratory driver / extractor. To adjust RELIEF VALVES (RV-1 & RV-4) to drive forward and reverse pressure specified for vibro, and adjust RELIEF VALVE (RV-2), if necessary for the clamp.

See J&M Vibratory / Extractor Manuals for the description of use of power unit in "Vibro Mode".

D. OTHER

Returning fluid is filtered by the RETURN FILTER (F2). INDICATOR GAGE (GA5) shows condition of FILTER (F2).

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

A TEMPERATURE SWITCH (TS) located in the reservoir operates the hydraulic fluid cold light.

The HEAT EXCHANGER (HE) cools the hydraulic fluid returning to the reservoir. The Heat Exchanger is part of the Triple Core Cooler.

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

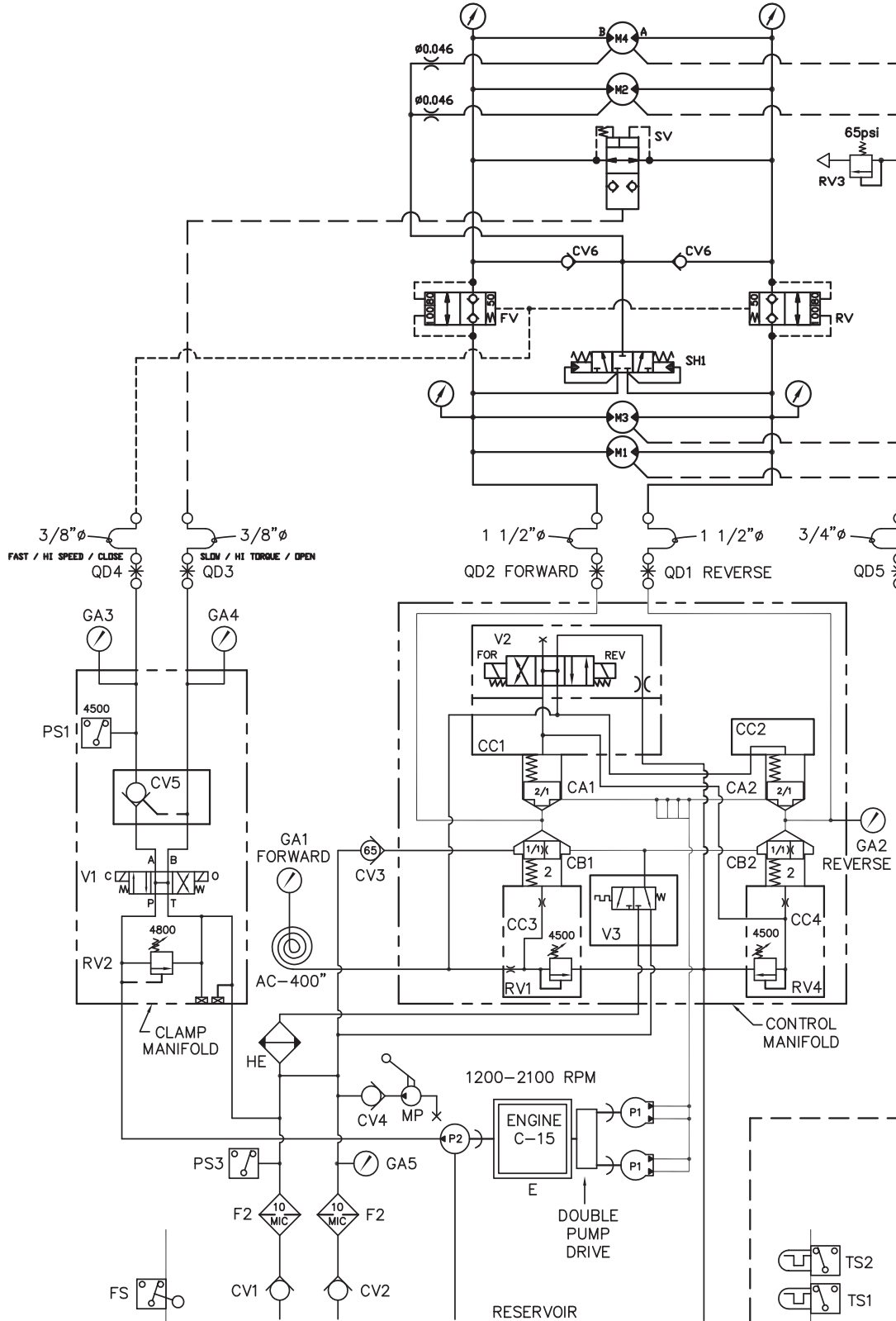


**MODEL 100K
TOP DRIVE
EARTH AUGER**

**OPERATING
INSTRUCTIONS**

V. HYDRAULIC CIRCUITRY

HYDRAULIC SCHEMATIC





**MODEL 100K
TOP DRIVE
EARTH AUGER**

**OPERATING
INSTRUCTIONS**

V. HYDRAULIC CIRCUITRY

E. HYDRAULIC COMPONENTS LIST

Notation	Description	Part Number	Page Number
AC	Accumulator Hose	110680	VIII-23
CA1 & 2	Cartridge A (2)	110624	VIII-37
CB1 & 2	Cartridge B (2)	110622	VIII-37
CC1	Cartridge Cover	110262	VIII-37
CC2	Cartridge Cover	110546	VIII-37
CC3	Cartridge Cover	110606	VIII-37
CC4	Cartridge Cover	110544	VIII-37
CV1 & 2	Check Valve Return Filter	110864	VIII-35
CV3	Check Valve - Bypass	130339	VIII-37
CV4	Manual Pump Check Valve	100451	VIII-31
CV5	Clamp Check Valve	110149	VIII-39
CV6	Check Valve - Drill Shuttle Oil	352115	VIII-17
E	Diesel Engine	170946	VIII-30
F2	Return Filter	110118	VIII-32
FS	Float Switch	100314	VIII-32
FV	Forward HI Speed Cartridge FAST	400570	VIII-15
GA1-4	Pressure Gage	110600	VIII-21
GA-5	Filter Indicator Gage	100436	VIII-32
HE	Triple Core Cooler	100102	VIII-30
M1-4	Motor	400578	VIII-13
MP	Manual Pump	100447	VIII-31
P1	Drive Pump (2)	110490	VIII-30
P2	Clamp Pump	110401	VIII-30
PS-1	Clamp Pressure Switch	810425	VIII-39
PS3	Pressure Switch	100602	VIII-33
QD1	Drill Reverse Disconnect	110690	VIII-35
QD2	Drill Forward Disconnect	110692	VIII-35
QD3	SLOW / Clamp Open Disconnect	100777	VIII-31
QD4	FAST / Clamp Close Disconnect	100245	VIII-31
QD5	Case Drain Disconnect	400095	VIII-31
RV	Reverse HI Speed Cartridge FAST	400570	VIII-15
RV1	Forward Relief Valve	100632	VIII-37
RV2	Clamp Relief Valve	100898	VIII-39
RV3	Case Drain Relief Valve	110214	VIII-15
RV4	Reverse Relief Valve	100632	VIII-37
SH1	Hot Oil Shuttle Cartridge	400424	VIII-17
SV	HI Torque Cartridge SLOW	400418	VIII-15
TS1	Temperature Switch	110590	VIII-33
TS2	Temperature Switch	110640	VIII-25
VI	Clamp Control Valve	120899	VIII-39
V2	Control Valve	120899	VIII-37
V3	Cooler Valve	110628	VIII-37



MODEL 100K
TOP DRIVE
EARTH AUGER

OPERATING INSTRUCTIONS



**MODEL 100K
TOP DRIVE
EARTH AUGER**

OPERATING INSTRUCTIONS

VI. ELECTRIC CIRCUITRY (REFERENCE:ELECTRICAL SCHEMATIC PG VI-6)

A. STARTING DIESEL ENGINE

The BATTERIES (EB1, EB2) provides 24-volt current to start the diesel engine. With the MAIN POWER switch ON (the Auger switch REV-FOR on the control pendant should be in the OFF position) and hold the SHUTDOWN RESET button in, turning the ENGINE START SWITCH to START energizes the START RELAY which energizes the STARTER MOTOR and turns over the diesel engine. If fuel is available, the diesel engine will start. The HOUR METER indicates engine operating hours. A TACHOMETER indicates engine speed.

B. STOPPING DIESEL ENGINE

Turning the ENGINE START switch to OFF de-energizes the switched power to the ECM which shuts off the fuel supply to the diesel engine. The engine stops.



**MODEL 100K
TOP DRIVE
EARTH AUGER**

OPERATING INSTRUCTIONS

VI. ELECTRICAL CIRCUITRY

C. SAFETY CONTROL SYSTEM

INFORMATION

A system of safety controls shut off the fuel supply, which stops the diesel engine in the event that engine water temperature is too high or engine oil pressure is too low.

The heart of the safety system is the shutdown reset, which is normally closed, thereby providing current to operate the HOUR METER and to energize the FUEL SOLENOID. Energizing the fuel solenoid opens the injector pump and allows fuel to flow to the diesel engine. The shutdown reset must remain closed so that fuel continues to flow to the diesel engine.

If the coil in the shutdown reset is energized, the shutdown reset will open, shutting off the fuel to the diesel engine. The engine will stop. The coil may be energized by either of the following devices:

1. **ENGINE OIL PRESSURE GAGE** - If oil pressure is below 15 PSI, contacts in the gage will be closed providing current to energize the shutdown reset coil. On start-up, the reset button of the shutdown reset (on the control panel) must be held in until oil pressure exceeds 30 PSI.
2. **ENGINE WATER TEMPERATURE GAGE** - If water temperature exceeds 210°F(99°C), the contacts of the gage will close energizing the shutdown reset coil.
3. Pushing the **EMERGENCY STOP BUTTON** on Control Pendant energizes the shutdown reset coil.
4. **Return Filter Switch** - if the hydraulic return filter is clogged, the return filter switch (PS3) will close energizing the shutdown reset and turning on the indicator light. The Return Filter Shutdown is disabled if the Temperature Switch Contacts (TS1) are opened by oil temperature less than 100°F(38°C).
5. **Hydraulic Level Float Switch** - If the hydraulic fluid level drops below the float switch (about 30 gallons), the contacts of the switch will close energizing the shutdown reset coil. This also will turn on the **HYDRAULIC FLUID LEVEL LOW** light.
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 shutdown reset coil. This will also turn on the indicator light.



**MODEL 100K
TOP DRIVE
EARTH AUGER**

OPERATING INSTRUCTIONS

VI. ELECTRICAL CIRCUITRY

D. SELECTING HIGH TORQUE

With the diesel engine running, turning the SPEED/TORQUE switch (HIGH TORQUE-HIGH SPEED), on the control pendant to HIGH TORQUE energizes the close-clamp solenoid (CLOSE-SOL.). This operates the clamp control hydraulic valve and pilots SV for High Torque operation. This works in forward and reverse.

When the pressure in the high torque hydraulic circuit reaches 4800 PSI, the pressure switch (PS-1) opens and de-energizes the close-clamp solenoid and turns on the CLAMP LIGHTS on the control pendant and control panel. If high torque pressure falls below 4500 PSI, the pressure switch closes and re-energizes the close-clamp solenoid to rebuild pressure. The CLAMP LIGHTS go out. When pressure returns to 4800 PSI, The pressure switch opens de-energizing the close-clamp solenoid and turns on the CLAMP LIGHTS.

E. SELECTING HIGH SPEED

With the diesel engine running, turning the SPEED/TORQUE switch (HIGH TORQUE-HIGH SPEED), on the control pendant to HIGH SPEED energizes the open-clamp solenoid (OPEN-SOL.). This operates the clamp control hydraulic valve and pilots FV and RV for High Speed operation. This works in forward and reverse.

F. STARTING AUGER FORWARD

With the diesel engine running, turning the auger switch on the control pendant to the FORWARD position energizes the forward SOLENOID on the control valve(V2). The control valve directs hydraulic fluid to the hydraulic motors and the auger starts the output shaft rotating clockwise. It is best to have the speed/torque selected before starting the auger.

G. STOPPING AUGER

With the diesel engine running, turning the auger switch on the control pendant to the center (OFF) position de-energizes the forward SOLENOID. Fluid no longer is directed to the motors and the output shaft stops.

H. STARTING AUGER REVERSE

With the diesel engine running, turning the auger switch on the control pendant to the REVERSE position energizes the reverse SOLENOID on the control valve(V2). The control valve directs hydraulic fluid to the hydraulic motors and the auger starts the output shaft rotating counter clockwise. It is best to have the speed/torque selected before starting the auger.



**MODEL 100K
TOP DRIVE
EARTH AUGER**

OPERATING INSTRUCTIONS

VI. ELECTRICAL CIRCUITRY

I. 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. The hydraulic fluid cold light indicates fluid temperature is below 70°F (21°C), this is sensed by the temp. switch (T.S.) located on front of reservoir. Pushing the button tests the bulb and power to complete circuit.

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

Turning the Governor switch to the FAST position will increase engine speed (RPM). Turning the Governor switch to the SLOW position will decrease engine speed.

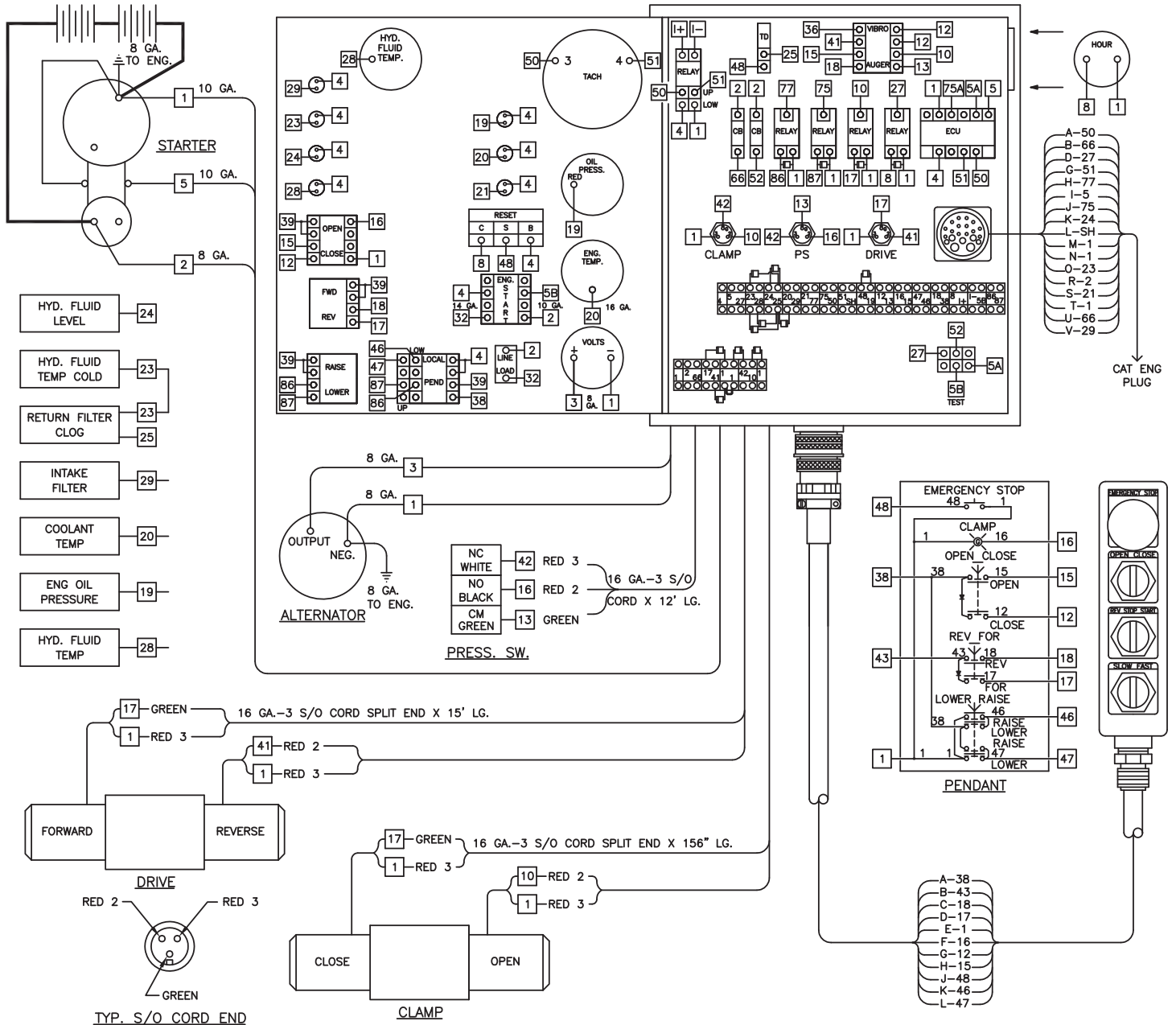


**MODEL 100K
TOP DRIVE
EARTH AUGER**

**OPERATING
INSTRUCTIONS**

VI. ELECTRICAL CIRCUITRY

ELECTRICAL LAYOUT



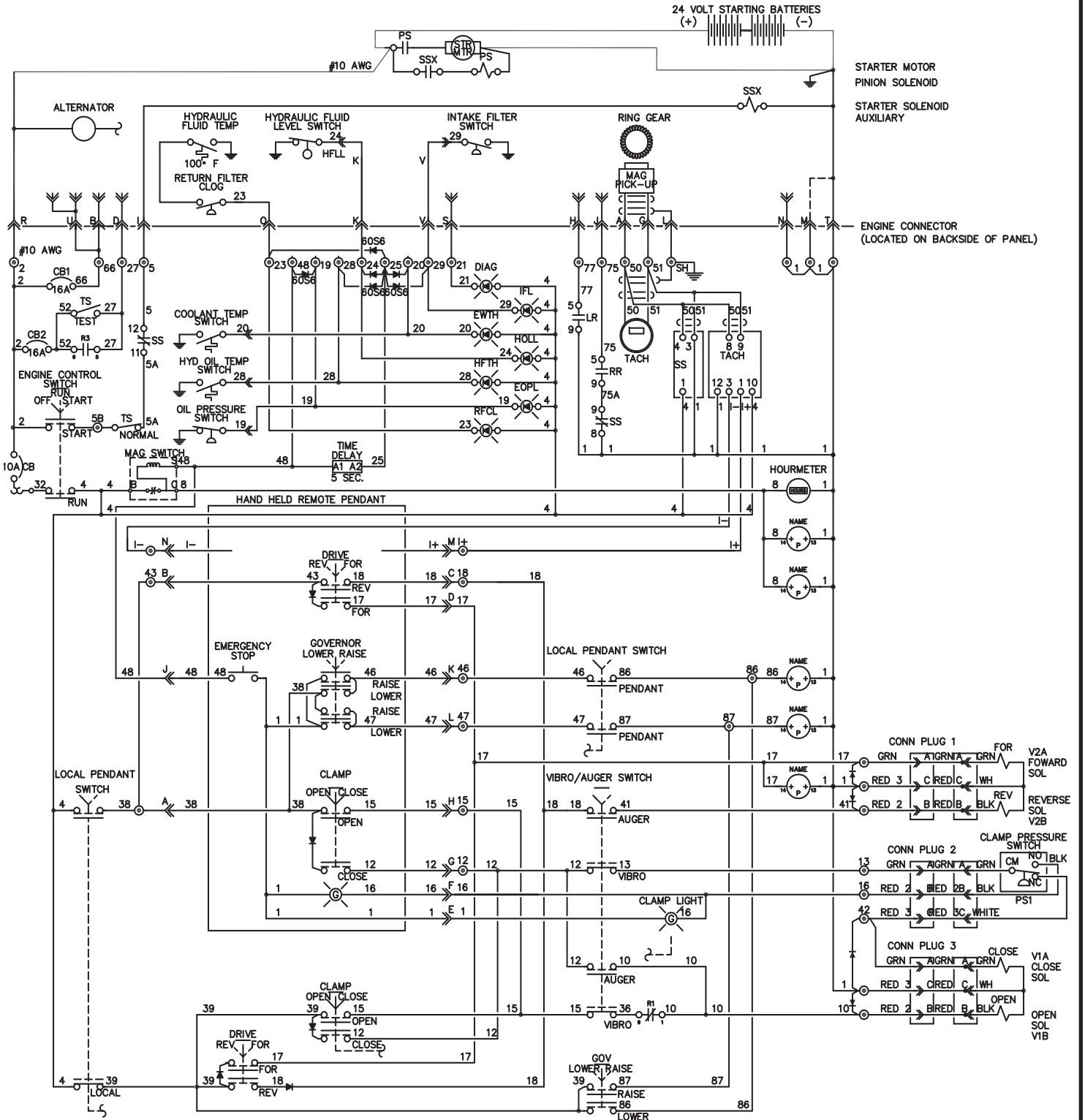


MODEL 100K TOP DRIVE EARTH AUGER

OPERATING INSTRUCTIONS

VI. ELECTRICAL CIRCUITRY

ELECTRICAL SCHEMATIC





**MODEL 100K
TOP DRIVE
EARTH AUGER**

**OPERATING
INSTRUCTIONS**

VI. ELECTRICAL CIRCUITRY

J. ELECTRICAL COMPONENTS LIST

<u>Notation</u>	<u>Reference</u>	<u>Part Number</u>	<u>Page Number</u>
ALTERNATOR	Alternator	See Cat. Parts Book	
AMMETER	Ammeter	110371	VIII-23
BATTERY	24-Volt Battery	150081	VIII-31
CB	Main Power Circuit Breaker	400141	VIII-23
CB1, CB2	Circuit Breaker 16 Amp	170871	VIII-25
CLAMP LIGHT (2)	Clamp Light Bulb	130305	VIII-23
DRIVE (2)	Vibrator Switch (FWD/REV)	170841	VIII-23
EMERG STOP	Emergency Stop Button	130507	VIII-27
ENG. OIL PRESS.	Engine Pressure Gage and Switch	100329	VIII-23
ENG. START SW.	Engine Start Switch	110615	VIII-23
ENG. WATER TEMP.	Engine Water Temperature Gage and Switch	110697	VIII-23
HOUR METER	Hour Meter	100343	VIII-23
HYD. FLUID TEMP	Hyd.Fluid Temperature Switch Gage	110640	VIII-25
L1-L6	Shutdown Indicator Light	170875	VIII-23
L7	Diagnostic Indicator Light	170956	VIII-25
LOCAL-REMOTE	Local-Remote Switch	170843	VIII-23
LOWER-RAISE	Engine Throttle Switch	100566	VIII-23
LR	Engine Governor Decrease	170887	VIII-25
MAG SWITCH	Shutdown Reset	130257	VIII-23
OPEN/CLOSE (2)	Clamp Switch (OPEN/CLOSE)	170837	VIII-23
PS-1	Pressure Switch	810425	VIII-39
RR	Engine Governor Increase	170887	VIII-25
STR MTR	Engine Starter Motor	See Cat.Parts Book	
TACH	Tachometer	170905	VIII-23
V1A	Close-Clamp Solenoid (Valve)	120891	VIII-39
V1B	Open-Clamp Solenoid (Valve)	120891	VIII-39
V2A	Forward Solenoid (Valve)	120891	VIII-37
V2B	Reverse Solenoid (Valve)	120891	VIII-37



**MODEL 100K
TOP DRIVE
EARTH AUGER**

OPERATING INSTRUCTIONS



**MODEL 100K
TOP DRIVE
EARTH AUGER**

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
HHPP	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
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 subsection A, above, for specific abbreviations.) Listed below is a typical screw description:
0.50 - 13 UNC X 1.50 LG SHCS

0.50 = 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-9.



**MODEL 100K
TOP DRIVE
EARTH AUGER**

PARTS LIST

VII. GENERAL DATA

C. SERIAL NUMBER LOCATIONS

1. The following J&M top drive auger units are serial numbered separately:
 - a. Auger
 - b. Power unit

2. In addition to the serial number plate itself (on augers and power units), the serial number is stamped into each unit in one or more places as follows:
 - a. Auger stamped twice - once on top plate of gear box on the front face, once on the gear box front face just below the top plate.
 - b. Power unit stamped twice - once on the top of the fuel tank by the filler stand pipe, once on the hydraulic tank by the J&M logo.



MODEL 100K
TOP DRIVE
EARTH AUGER

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; State to whom shipment is to be made and method of shipment desired, otherwise our own judgement will be used.
4. SHORTAGES; Claims for shortages 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 ten 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 100K
TOP DRIVE
EARTH AUGER**

PARTS LIST

VIII. ORDERING PARTS

B. FITTING DESCRIPTION KEY

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

SELECTOR INDEX

- 2 - INCH FITTING
- 9 - METRIC FITTING

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.)

FIRST END SIZE

- * IN 1/16THS OF AN INCH (INDEX 2)
- IN MILLIMETERS (INDEX 9)
- SEE GENERAL SPECIFICATION SHEET FOR SEQUENCE OF ORDER

FIRST END FITTING STYLE

- SEE FITTING STYLE SELECTOR CHART SC-1

SECOND END SIZE

- IF APPLICABLE - SEE FIRST END SIZE

SECOND END FITTING STYLE

- IF APPLICABLE - SEE FIRST END FITTING STYLE

THIRD END SIZE

- IF APPLICABLE - SEE FIRST END SIZE

THIRD END FITTING STYLE

- IF APPLICABLE - SEE FIRST END SIZE

* EXCEPTIONS

- 90 = 10" 96 = 6"
- 92 = 12" 98 = 8"
- 94 = 14" 99 = NON CODE SIZE

MATERIAL

- 1 - CARBON STEEL
- 2 - BRASS
- 4 - STAINLESS STL
- 5 - AAR MAL IRON
- 6 - MALEABLE IRON
- 8 - FORGED STEEL

SPECIAL NOTATIONS

PRESSURE RATING

- 0 - NONE
- 1 - 125 LB.
- 3 - SCH 40
- 4 - SCH 80

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.)

LENGTH CODE

- (ELBOWS & NIPPLES)
- __L - LONG (ELBOW)
- __X - EXTRA LONG (ELBOW)
- __C - CLOSE (NIPPLE)

- PIPE NIPPLES (LONG) ONLY
- IN DEC. INCHES FOR INDEX 2
- 050 = 5.0 INCHES
- 105 = 10.5 INCHES

- IN MILLIMETERS FOR INDEX 9
- 120 = 12.0 MILLIMETERS
- 084 = 8.4 MILLIMETERS

FOURTH END SIZE & FITTING STYLE

- (CROSSES ONLY)
- SEE FIRST END FITTING SIZE OR END STYLE



**MODEL 100K
TOP DRIVE
EARTH AUGER**

PARTS LIST

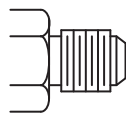
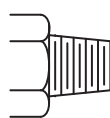
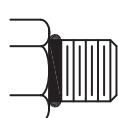
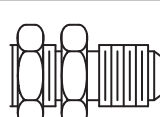
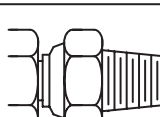
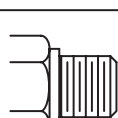
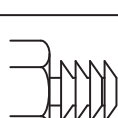
VIII. ORDERING PARTS

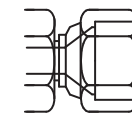

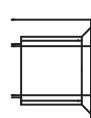
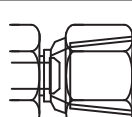
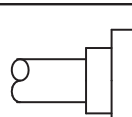
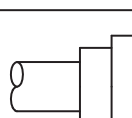
B. FITTING DESCRIPTION KEY (CONTINUED)

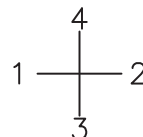
FITTING STYLE SELECTOR CHART

SC-1

FOR END FITTING STYLE SELECTION

M		JIC MALE 37 Deg. FLARE
P		MALE PIPE NPT
R		S.A.E. MALE O-RING (& ADJUSTABLE)
B		JIC MALE 37 Deg. FLARE BULKHEAD
D		MALE PIPE NPT SWIVEL
S		B.S.P. MALE PIPE
T		HOSE BARB

J		JIC FEMALE 37 Deg. FLARE (& SWIVEL)
Q		FEMALE PIPE NPTF
K		S.A.E. FEMALE O-RING
N		FEMALE PIPE NPSM-SWIVEL
F		SPLIT FLANGE 3000 PSI. CODE 61
H		SPLIT FLANGE 6000 PSI. CODE 62





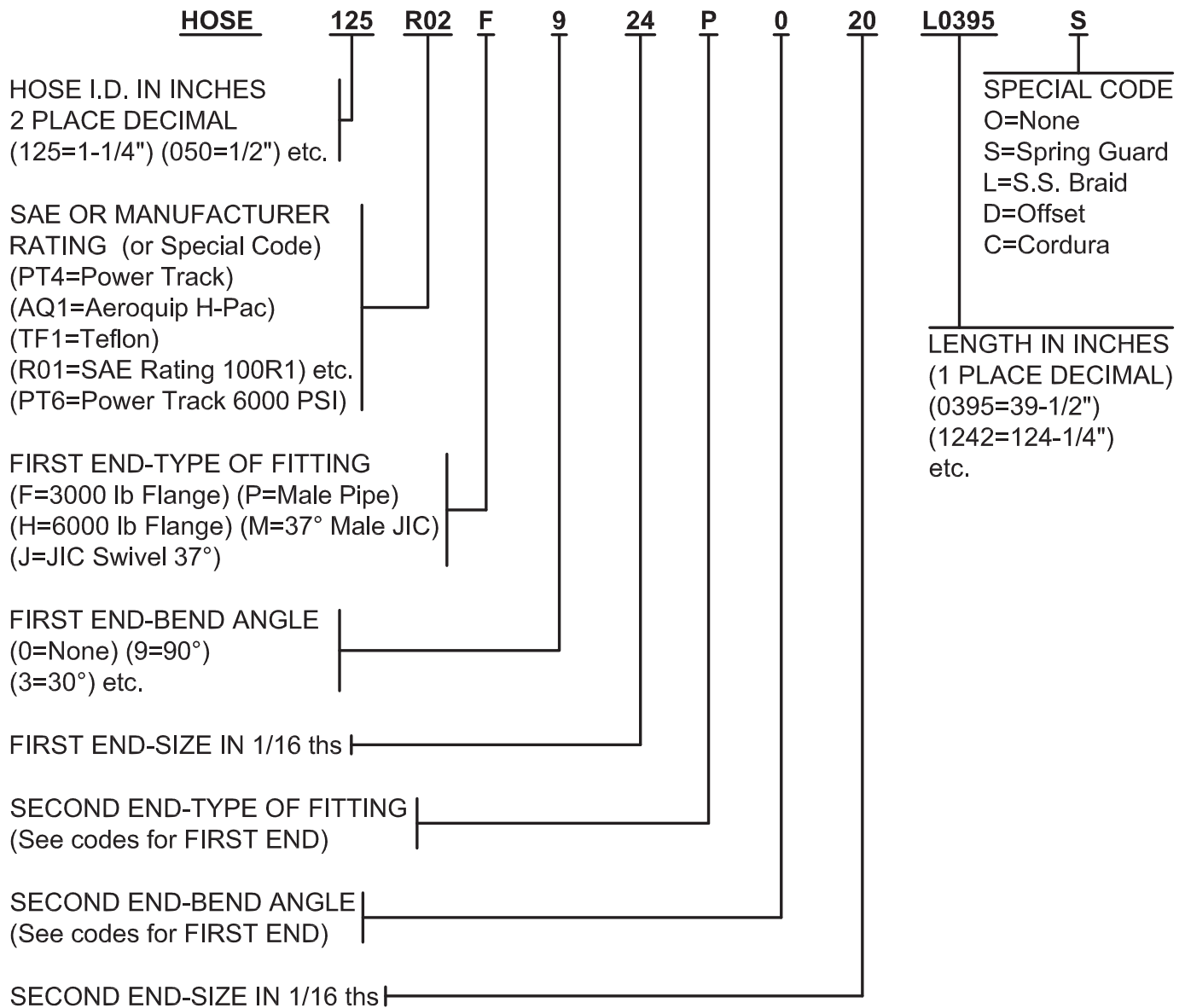
**MODEL 100K
TOP DRIVE
EARTH AUGER**

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 100K
TOP DRIVE
EARTH AUGER**

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. EARTH AUGER	800613
b. GEAR CASE	810951
c. TERMINAL MANIFOLD	810953
d. HOT OIL SHUTTLE	810976
e. HOSE ASSEMBLIES - INTERCONNECTING	800637
f. POWER UNIT - ENCLOSURE	810919
g. CONTROL BOX	810974
h. CONTROL PENDANT	800639
i. POWER UNIT - INTERNAL	800641
j. CONTROL MANIFOLD	810447
k. CLAMP MANIFOLD	810915
l. 5 INCH ROTARY JOINT	800615
m. 3 INCH ROTARY JOINT	800623
n. U37 INCH LEAD GUIDES	800619
o. 50' PENDANT EXTENSION CABLE	800059

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.

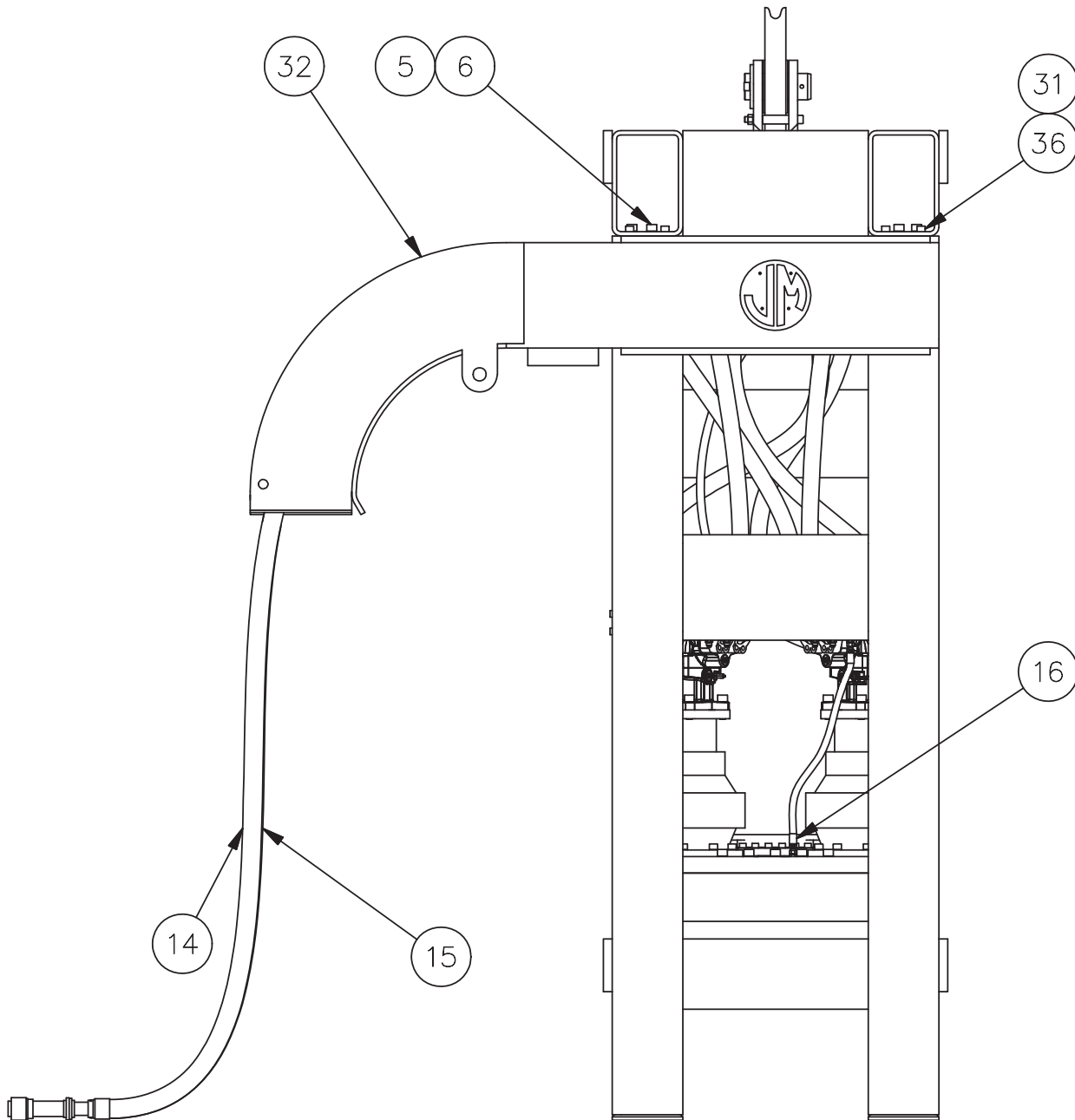


MODEL 100K
TOP DRIVE
EARTH AUGER

PARTS LIST

EARTH AUGER

800613



FRONT VIEW

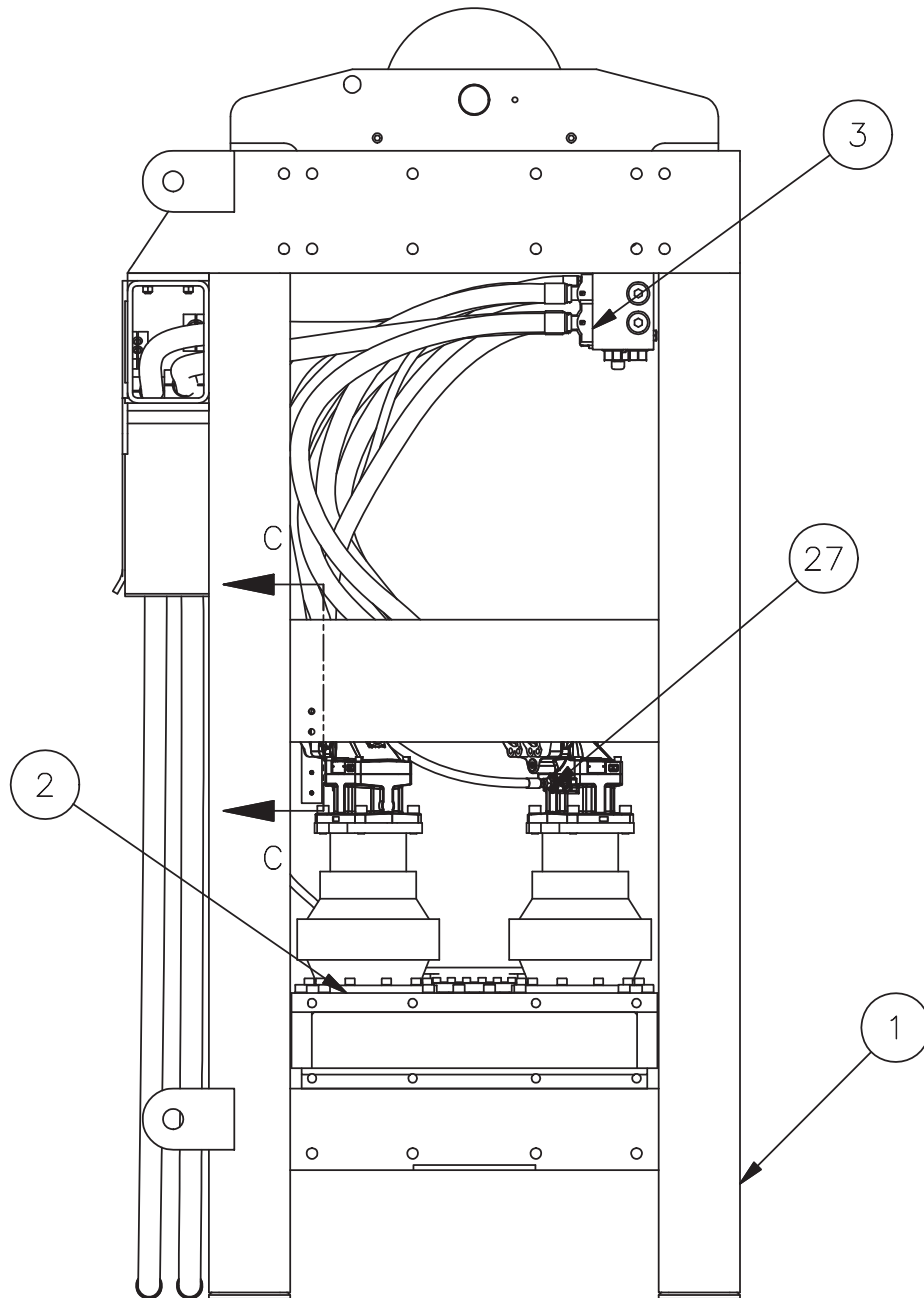


MODEL 100K
TOP DRIVE
EARTH AUGER

PARTS LIST

EARTH AUGER

800613



SIDE VIEW

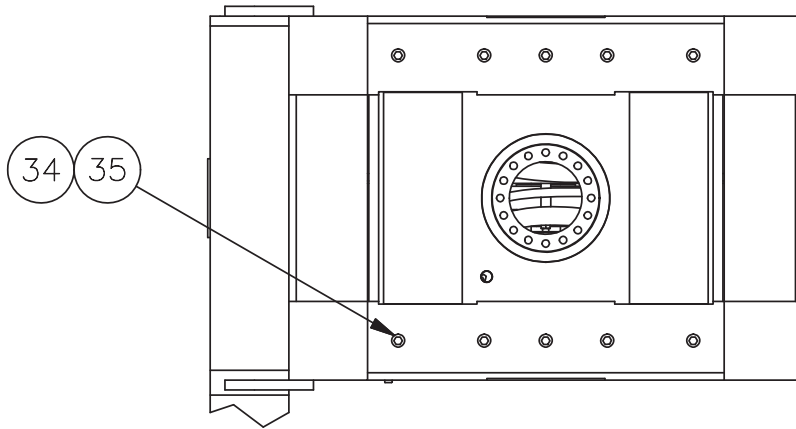


MODEL 100K
TOP DRIVE
EARTH AUGER

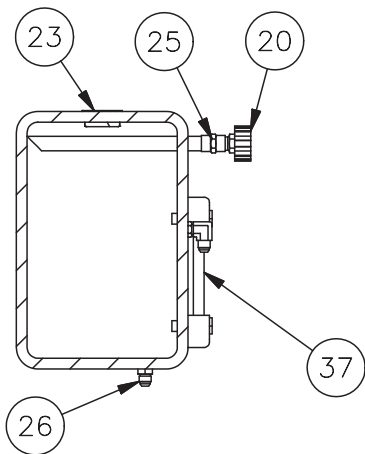
PARTS LIST

EARTH AUGER

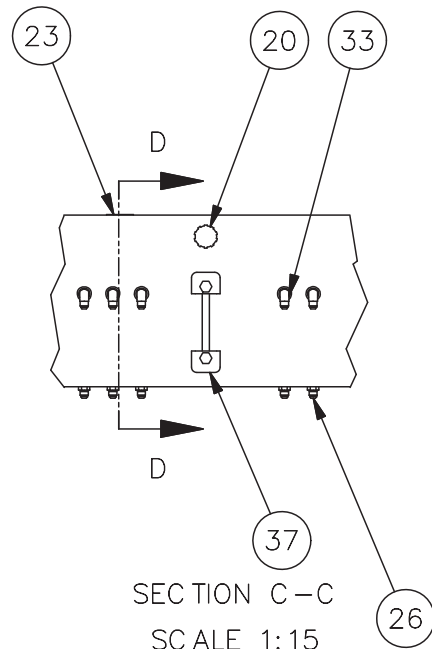
800613



BOTTOM VIEW



SECTION D-D
SCALE 1:10



SECTION C-C
SCALE 1:15



MODEL 100K
TOP DRIVE
EARTH AUGER

PARTS LIST

EARTH AUGER

800613

<u>Item</u>	<u>Part Number</u>	<u>Qty.</u>	<u>Description</u>
1	400564	1	FRAME
2	810951	1	GEAR BOX ASM
3	810953	1	TERMINAL MANIFOLD ASSEMBLY
4	110986	8	20 SPLIT FLANGE CODE 62
5	400468	4	0.75 LOCK WASHER SCHNORR
6		4	0.75-10UNC X 1.75 LG SHCS
7		1	HOSE MOTOR 1 FWD PORT B
8		1	HOSE MOTOR 2 FWD PORT B
9		1	HOSE MOTOR 3 FWD PORT B
10		1	HOSE MOTOR 4 FWD PORT B
11		1	HOSE MOTOR 1 REV PORT A
12		1	HOSE MOTOR 2 REV PORT A
13		1	HOSE MOTOR 3 REV PORT A
14		1	HOSE POWER UNIT REV
15		1	HOSE POWER UNIT FWD
16		1	HOSE GEAR BOX BREATHER
17		1	HOSE MOTOR 1 CASE DRAIN
18		1	HOSE MOTOR 4 REV PORT A
19	160469	1	18 INCH SHEAVE
20	400845	1	BREATHER
21	400466	12	0.625 LOCK WASHER SCHNORR
22	100575	1	0.63-11UNC X 1.25 LG SHCS
23		1	FITT2P-20R
24		4	GREASE FITTING 0.13 NPT
25	110143	1	FITT2S-06Q06Q
26	170818	5	FITT2S-06M06R000-000H001
27	300099	1	FITT2S-08M10R000-000H001
28	400562	1	SHEAVE PIN
29	400560	3	ROPE GUARD
30	130731	3	0.63-11UNC X 6.00 LG SHCS
31	100273	11	0.63-11UNC HEX NUT
32	400548	1	HOSE BOOM
33	130057	5	FITT2L-06M06R
34	400470	10	0.875 LOCK WASHER SCHNORR
35		10	0.88-9 UNC X 2.25 LG SHCS
36	100071	8	0.63-11UNC X 2.50 LG SHCS
37	400444	1	SIGHT GLASS 5 INCH
38	400442	1	GREASE FITTING BAR
39	400464	2	0.50 LOCK WASHER SCHNORR
40	100485	2	0.50-13UNC HEX NUT
41	110735	2	0.50-13UNC X 2.50 SHCS
42	100037	16	2-222 O-RING
43	110119	2	2-225 O-RING

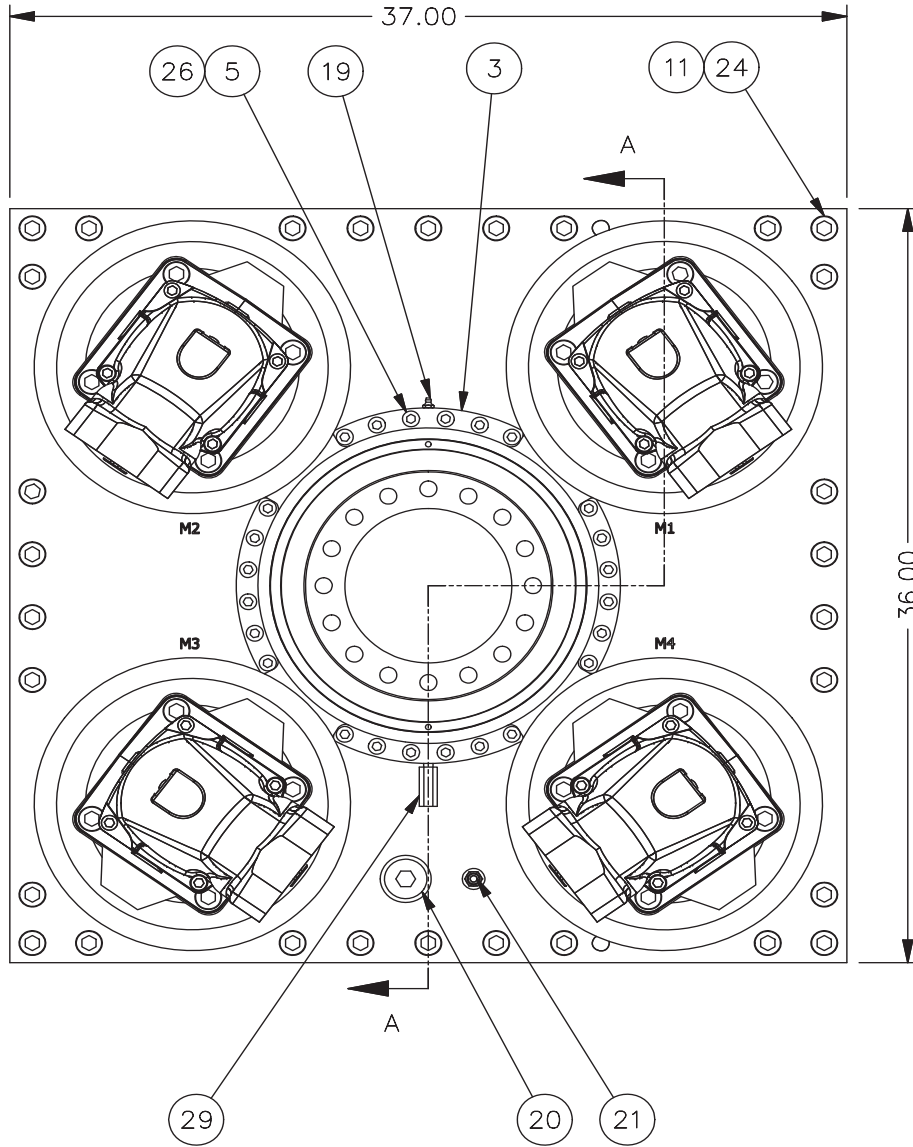


MODEL 100K
TOP DRIVE
EARTH AUGER

PARTS LIST

GEAR CASE

810951



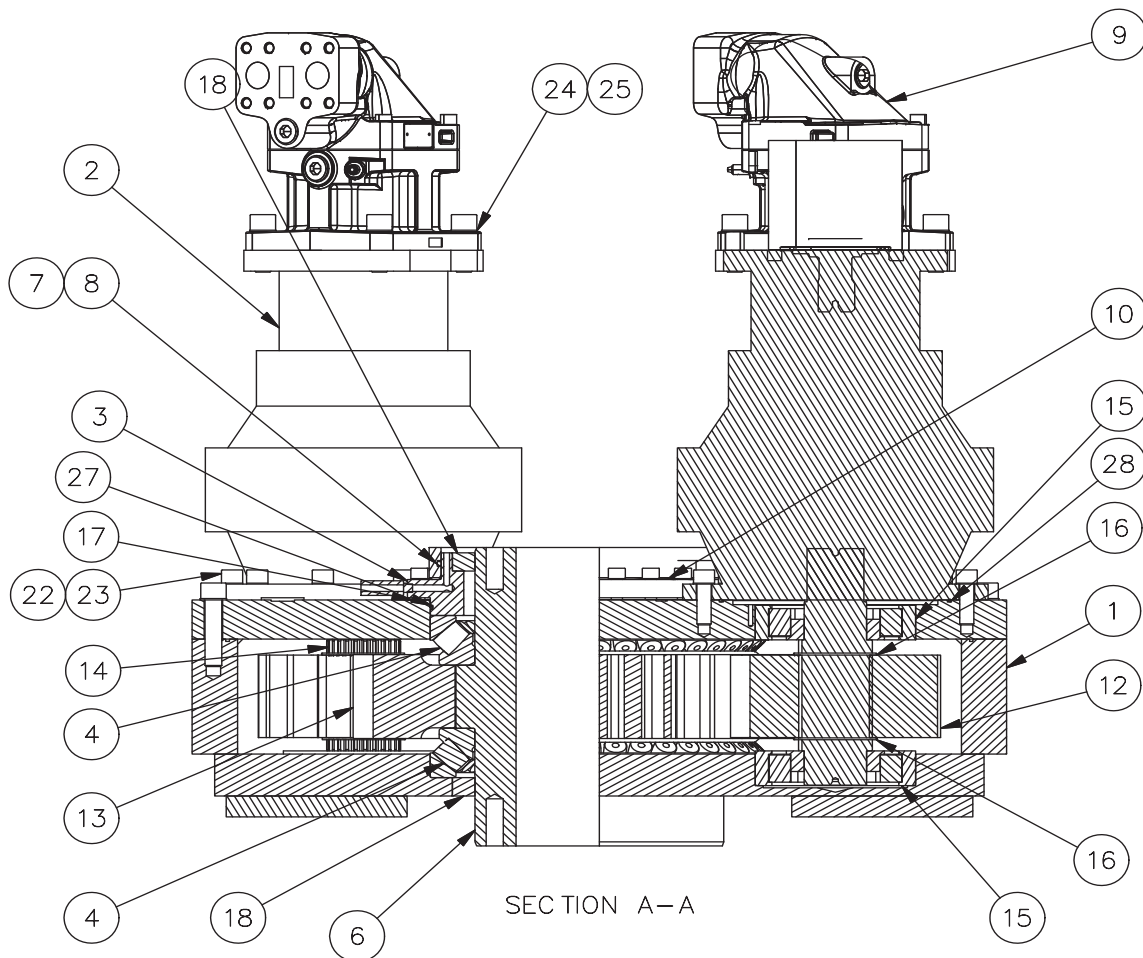


MODEL 100K
TOP DRIVE
EARTH AUGER

PARTS LIST

GEAR CASE

810951





MODEL 100K
TOP DRIVE
EARTH AUGER

PARTS LIST



MODEL 100K
TOP DRIVE
EARTH AUGER

PARTS LIST

GEAR CASE

810951

Item	Part Number	Qty.	Description
1	400586	1	GEAR BOX FRAME MACHINING
2	400550	4	PLANETARY GEAR REDUCER "D"
3	400584	1	RETAINER RING
4	400631	2	TAPERED BEARING
5	400043	24	0.50-13UNC X 2.25 SHCS
6	400588	1	OUTPUT SHAFT
7	400582	1	NYLON FACE SEAL
8	400380	1	2-383 O-RING
9	400578	4	F12-125 MOTOR
10	400576	1	WAVE SPRING
11		30	0.75-10UNC X 3.25 SHCS
12	400527	4	PINION GEAR
13	400519	1	BULL GEAR
14	400523	4	PINION SHAFT
15	150017	8	ROLLER BEARING
16	400691	8	RETAINING RING
17	400566	1	SHIM PACK
18	400635	2	SEAL
19		1	GREASE FITTING 0.13 NPT
20		1	FITT2P-20R
21	170818	1	FITT2S-06M06R000-000H001
22	400466	40	0.625 LOCK WASHER SCHNORR
23	140227	40	0.63-11UNC X 2.00LG SHCS
24	400468	46	0.75 LOCK WASHER SCHNORR
25	400069	16	0.75-10UNC X 2.00 SHCS
26	400464	24	0.50 LOCK WASHER SCHNORR
27	400416	1	2-280 O-RING
28	110097	4	2-274 O-RING
29	400440	1	GREASE RELIEF VALVE
36	100597	3	0.25 FLAT WASHER
37	100576	3	0.25-20 UNC X 0.63 LG SHCS
38	100559	3	0.25 LOCK WASHER
39	170811	135	O-Ring Cord 0.125 CS / Inch

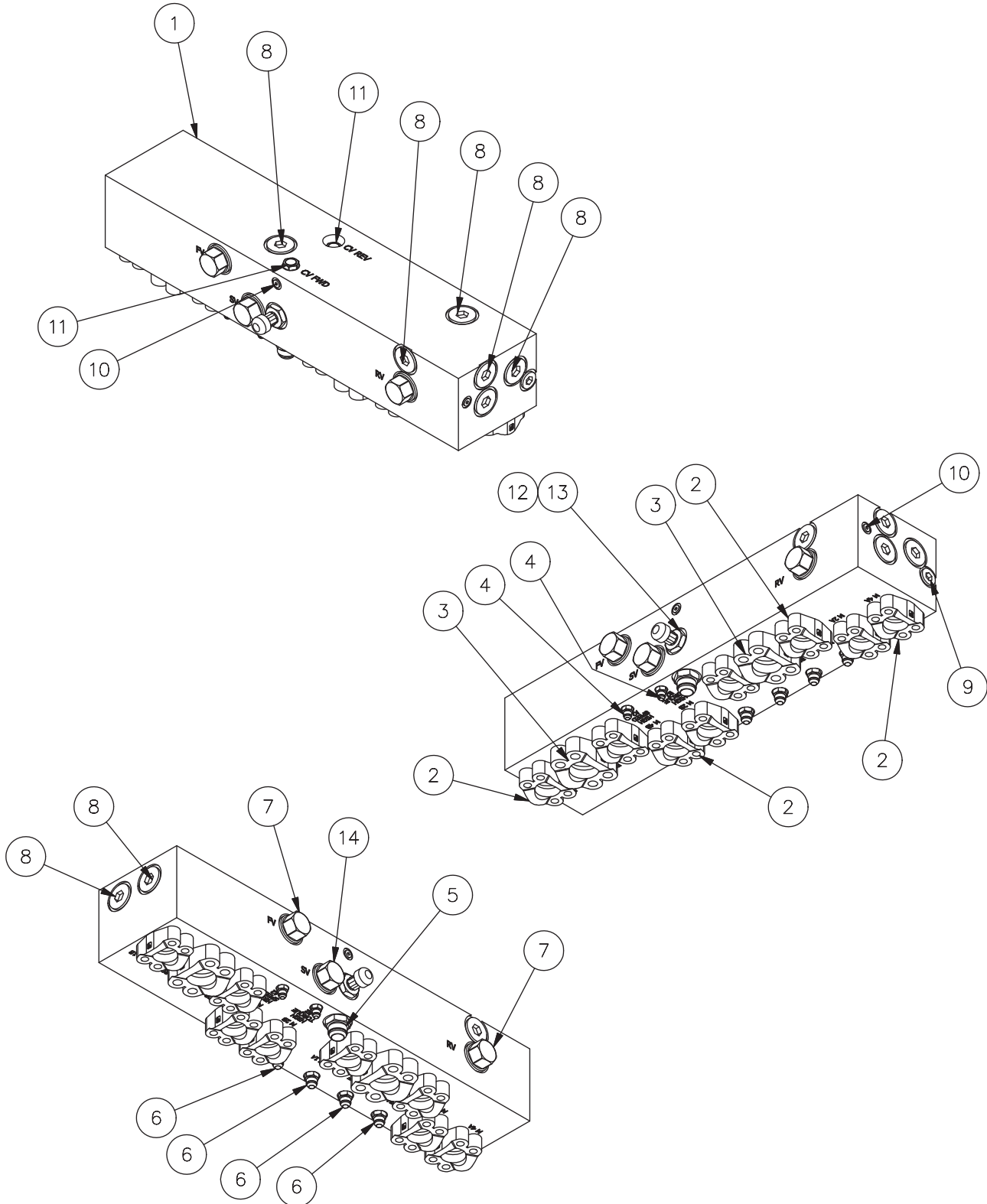


MODEL 100K
TOP DRIVE
EARTH AUGER

PARTS LIST

TERMINAL BLOCK

810953





MODEL 100K
TOP DRIVE
EARTH AUGER

PARTS LIST

TERMINAL BLOCK

810953

Item	Part Number	Qty.	Description
1	400572	1	TERMINAL MANIFOLD
2	110986	8	20 SPLIT FLANGE CODE 62
3	110243	2	24 SPLIT FLANGE CODE 62
4	170818	2	FITT2S-06M06R000-000H001
5	300676	1	FITT2S-16M16R000-0000001
6	100139	4	FITT2S-08M08R000-000H001
7	400570	2	PRIORITY VALVE
8	160503	8	FITT2P-20R
9	110248	1	FITT2P-12R
10	110935	2	FITT2P-04R
11	400420	2	CAVITY PLUG
12	110214	1	RELIEF VALVE
13		1	FITT2S-08Q16R
14	400418	1	PRIORITY VALVE

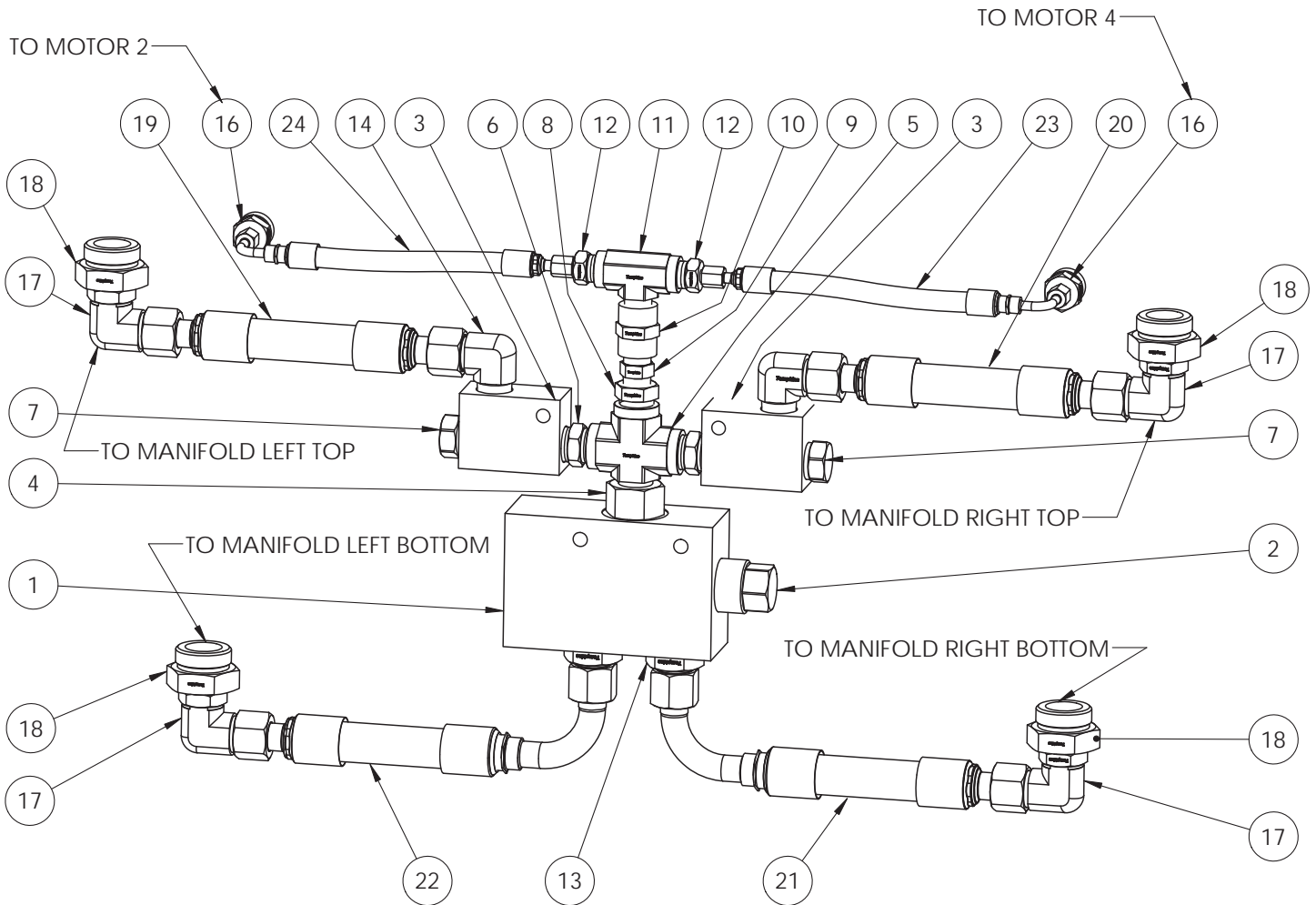


MODEL 100K
TOP DRIVE
EARTH AUGER

PARTS LIST

HOT OIL SHUTTLE

810976





MODEL 100K
TOP DRIVE
EARTH AUGER

PARTS LIST

HOT OIL SHUTTLE

810976

Item	Part Number	Qty.	Description
1	400422	1	SHUTTLE BODY
2	400424	1	SHUTTLE VALVE
3	400426	2	CV BODY
4		1	FITT2S-12Q16R
5		1	FITT2X-12P12Q12Q12Q
6	120049	2	FITT2S-12P12P
7	352115	2	CHECK VALVE
8	400409	1	FITT2S-12P08Q
9	100705	1	FITT2S-08P08P
10	300443	1	FITT2S-08Q08Q
11		1	FITT2T-08Q08Q08P
12		2	ORIFICE FITTING FITT2S-04M08P
13	100847	2	FITT2S-12M16R
14	100489	2	FITT2L-12M12P
15		2	ORIFICE PLUG FITT2P-01P 0.0469
16		2	FITT2S-04M12R
17	100590	4	FITT2L-12M12R
18		4	FITT2S-12K20R
19		1	HOSE075R09J012J012L02650
20		1	HOSE075R09J012J012L02800
21		1	HOSE075R09J912J012L03800
22		1	HOSE075R09J912J012L03600
23		1	HOSE025R03J904J004L05800
24		1	HOSE025R03J904J004L04600

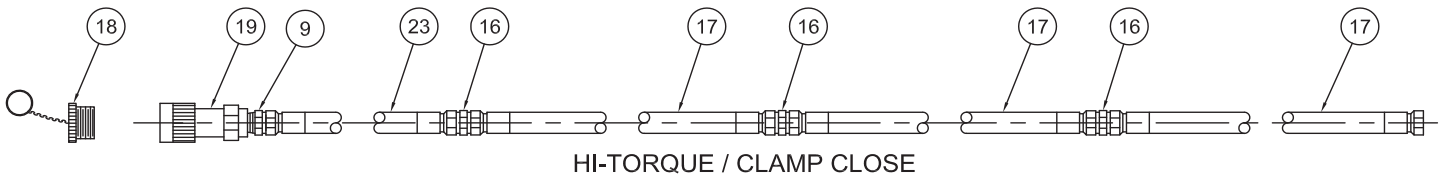
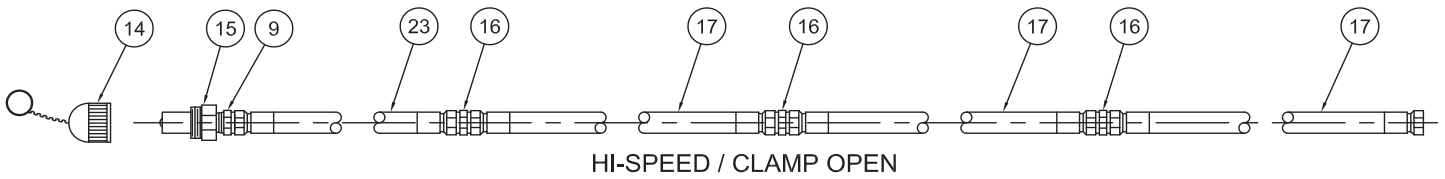
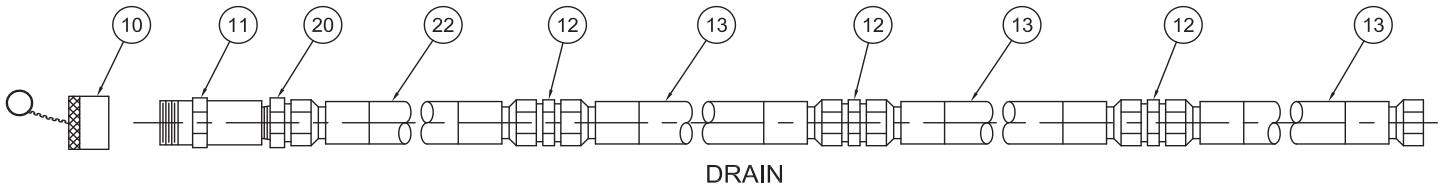
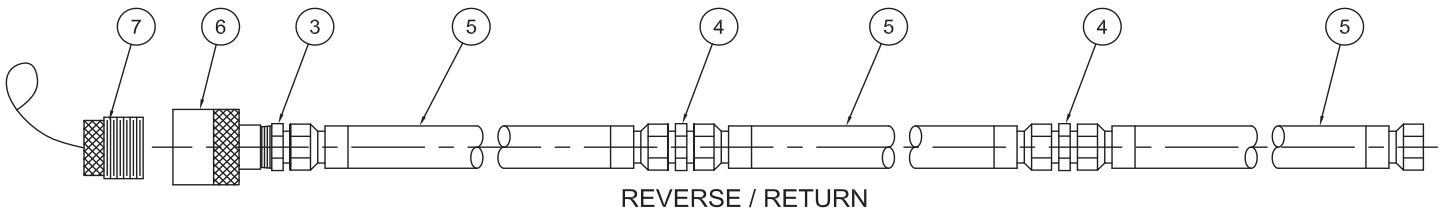
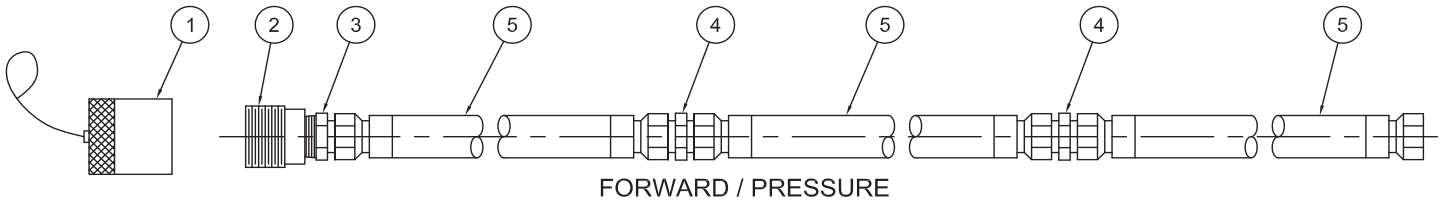


MODEL 100K
TOP DRIVE
EARTH AUGER

PARTS LIST

HOSE ASSEMBLIES - INTERCONNECTING

800637





MODEL 100K
TOP DRIVE
EARTH AUGER

PARTS LIST

HOSE ASSEMBLIES

800637

Item	Part Number	Qty.	Description
1	110955	1	1.50 DUST CAP
2	110690	1	1.50 MALE DISCONNECT
3	100565	2	FITT2S-24P24M000-000H001
4	110240	4	FITT2S-24M24M000-000H001
5	110141	6	HOSE150PT6J024J024L60000
6	110692	1	1.50 FEMALE DISCONNECT
7	110957	1	1.50 DUST PLUG
8	110271	2	FITT2S-32M32M000-000H001
9	400203	2	FITT2S-06M06P000-000H001
10	400253	1	.75 DUST CAP
11	400251	1	.75 MALE DISCONNECT
12	130789	3	FITT2S-16M16M000-000H001
13	140685	3	HOSE100PT4J016J016L60000
14	100257	1	.375 DUST CAP
15	100245	1	.375 MALE DISCONNECT
16	120081	6	FITT2S-06M06M000-000H001
17	100247	6	HOSE038R02J006J006L60000
18	100737	1	.375 DUST PLUG
19	100777	1	.375 FEMALE DISCONNECT
20	140759	1	FITT2S-12P16M000-000H001
21	130243	10	RUBBER TIE DOWN
22	140685	1	HOSE100PT4J016J016L05400
23	100247	1	HOSE038R02J006J006L05400

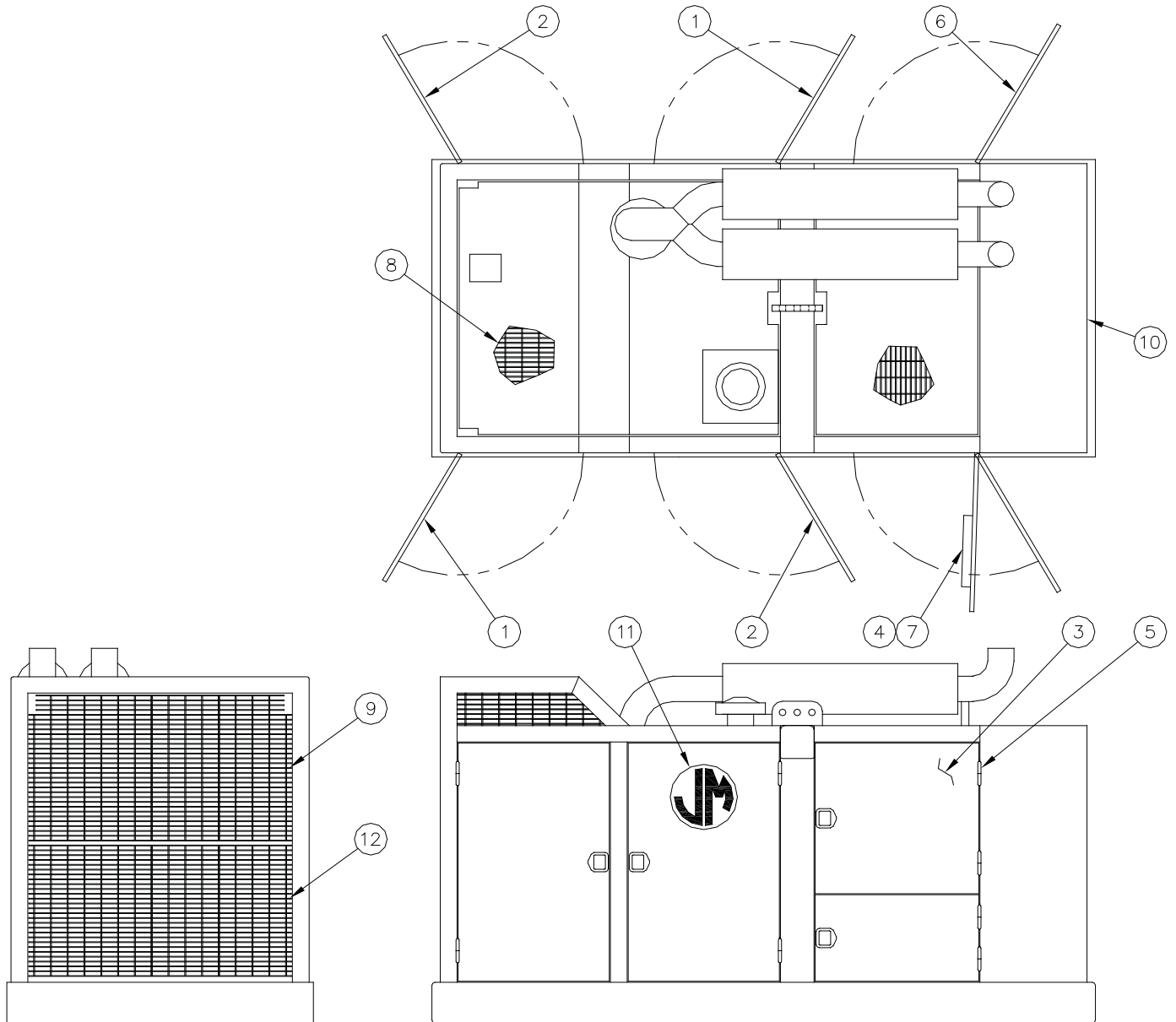


MODEL 100K
TOP DRIVE
EARTH AUGER

PARTS LIST

POWER UNIT ENCLOSURE

810919





MODEL 100K
TOP DRIVE
EARTH AUGER

PARTS LIST

POWER UNIT ENCLOSURE

810919

<u>Item</u>	<u>Part Number</u>	<u>Qty.</u>	<u>Description</u>
1	610423	2	Cover Door
2	610424	2	Cover Door
3	610418	1	Cover Door
4	610420	1	Cover Door
5	100834	14	Bullet Hinge
6	610422	1	Cover Door
7	100600	1	Hex Key Rack
8	610444	1	Exhaust Grill Top Grates
9	610442	1	Intake Grill Front Top
10	400278	1	J&M Logo Plate
11	100290	2	J&M Decal
12	610450	1	Intake Grill Front Bottom

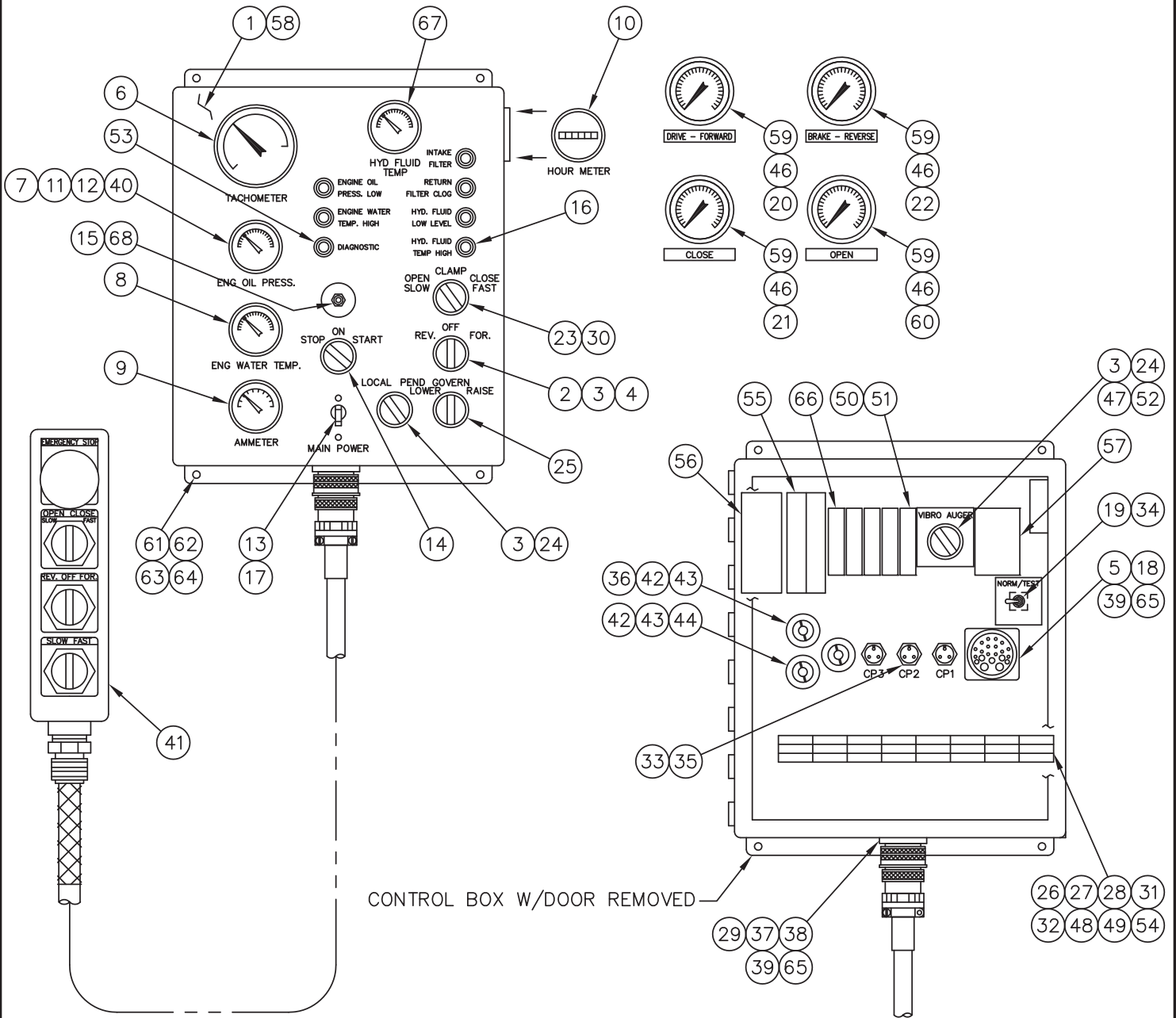


MODEL 100K
TOP DRIVE
EARTH AUGER

PARTS LIST

CONTROL BOX

810974





**MODEL 100K
TOP DRIVE
EARTH AUGER**

PARTS LIST

CONTROL BOX

810974

Item	Part Number	Qty.	Description
1	170835	1	Enclosure
2	170841	1	Drive For/Rev Switch
3	170901	5	Contact Block 1 N.O. 1 N.C.
4	170903	1	Contact Block 1 N.O.
5	170845	1	Engine Receptacle
6	170905	1	Tachometer
7	100329	1	Oil Pressure Gage
8	110697	1	Water Temp Gage
9	110371	1	Ammeter
10	100343	1	Hour Meter
11	170939	1	HOSE025BSSJ004J004L04200
12	170941	1	FITT2L-04M02Q000-0000002
13	400141	1	Circuit Breaker, 10 Amp
14	110615	1	Engine Control Switch
15	130257	1	Shutdown Reset
16	170875	2	Red L.E.D.
17	100331	2	#6-32 X 0.25 Lg BHCS
18	170847	1	Engine Receptacle Gasket
19	170853	1	Toggle Switch
20	110680	1	HOSE025AQ1J004J004L40000
21	170909	1	HOSE025AQ1J004J004L03900
22	170911	1	HOSE025AQ1J004J004L07900
23	400604	1	Clamp Open/ Close Switch
24	170843	1	Local/ Pendant Switch
25	100566	1	Governor Raise/Lower Switch
26	400161	2	#10 Lock Washer
27	400163	2	#10-32 Hex Nut
28	110649	2	#10-32 X 0.375 Lg PHMS
29	170861	1	Pendant Receptacle Cover
30	130305	1	Light Bulb
31	170877	30	Terminal Bock
32	170879	2	Terminal Block
33	170849	3	S/O. Cord Receptacle
34	170855	1	Switch Bracket
35	110843	3	0.50 Lock Nut
36	170863	1	0.75 - 0.38 - 0.50 Connector
37	170857	1	Pendant Receptacle
38	170859	1	Pendant Receptacle Gasket
39	110754	8	#6-32 X 0.375 Lg RHMS
40	300611	1	FITT2S-02P04E000-000H002



MODEL 100K
TOP DRIVE
EARTH AUGER

PARTS LIST



MODEL 100K
TOP DRIVE
EARTH AUGER

PARTS LIST

CONTROL BOX

810974

Item	Part Number	Qty.	Description
41	800639	1	Pendant Assembly
42	170865	3	0.75 Lock Nut
43	170867	3	0.75 Rubber Gasket
44	170869	1	0.75 Connector
46	100321	4	FITT2L-04M04Q000-0000001
47	170960	1	Vibro-Auger Label
48	170881	1	Terminal End Section
49	170883	2	Terminal End Clamp
50	170887	2	Relay, 1 Pole
51	170885	2	Relay Base, 1 Pole
52	170958	1	Lagre Z Bracket
53	170956	1	Amber L.E.D.
54	100413	8	Diode, 6 Amp
55	170871	2	Circuit Breaker, 16 Amp
56	170873	1	Tach Transducer
57	170893	1	Speed Switch
58	170962	1	Faceplate Label
59	110600	4	0-6000 PSI Gage
60	170913	1	HOSE025AQ1J004J004L04200
61	100576	4	0.25-20 X 0.625 Lg SHCS
62	100559	4	0.25 Lock Washer
63	100598	4	0.25-20 Hex Nut
64	100597	4	0.25 Flat Washer
65	110696	8	#6 Lock Washer
66	170954	1	In-Line Time Delay Solid State
67	110640	1	Hyd. Temp. Gage
68	130910	1	Dust Cover

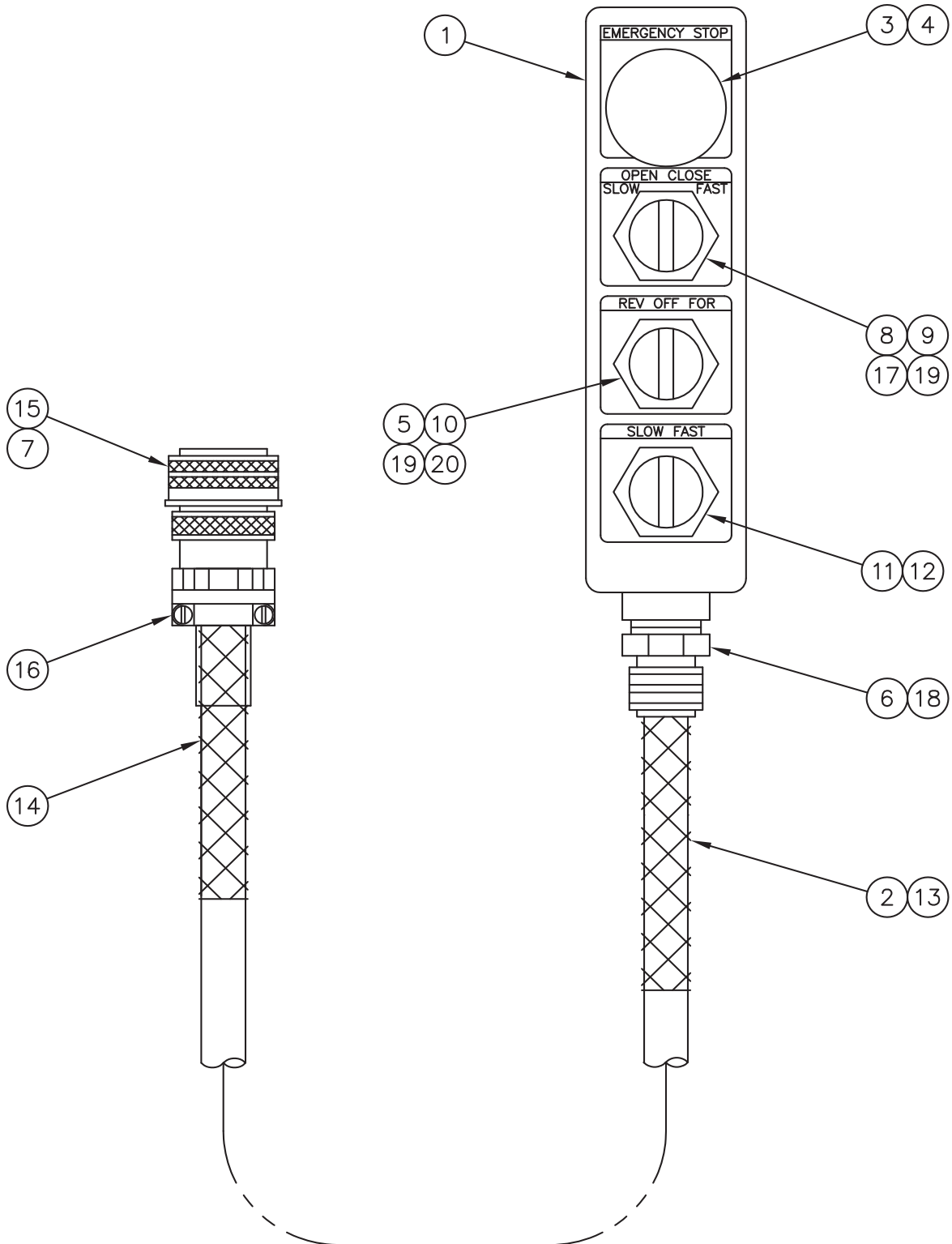


MODEL 100K
TOP DRIVE
EARTH AUGER

PARTS LIST

PENDANT ASSEMBLY

800639





MODEL 100K
TOP DRIVE
EARTH AUGER

PARTS LIST

PENDANT ASSEMBLY

800639

Item	Part Number	Qty.	Description
1	130153	1	Pendant Box
2	110603	1	Cord Grip Pendant End
3	130507	1	Emergency Stop Button
4	130509	1	Emergency Stop Label
5	170841	1	Drive For/Rev Switch
6	170865	1	0.75 Lock Nut
7	170899	1	Pendant Receptacle Cover
8	400604	1	Clamp Open/ Close Switch
9	100401	1	Clamp Open/ Close Label
10	100864	1	Rev/Off/Fwd Label
11	100566	1	Governor Raise/ Lower Switch
12	100562	1	Lower/Governor/Raise Label
13	100560	50	Pendant Cable
14	170839	1	Cord Grip Plug End
15	170895	1	Pendant Receptacle
16	170897	1	Receptacle Clamp
17	130305	1	Light Bulb
18	170867	1	0.75 Rubber Gasket
19	100413	3	Diode, 6 Amp
20	170901	1	Contact Block 1 N.O. 1 N.C.

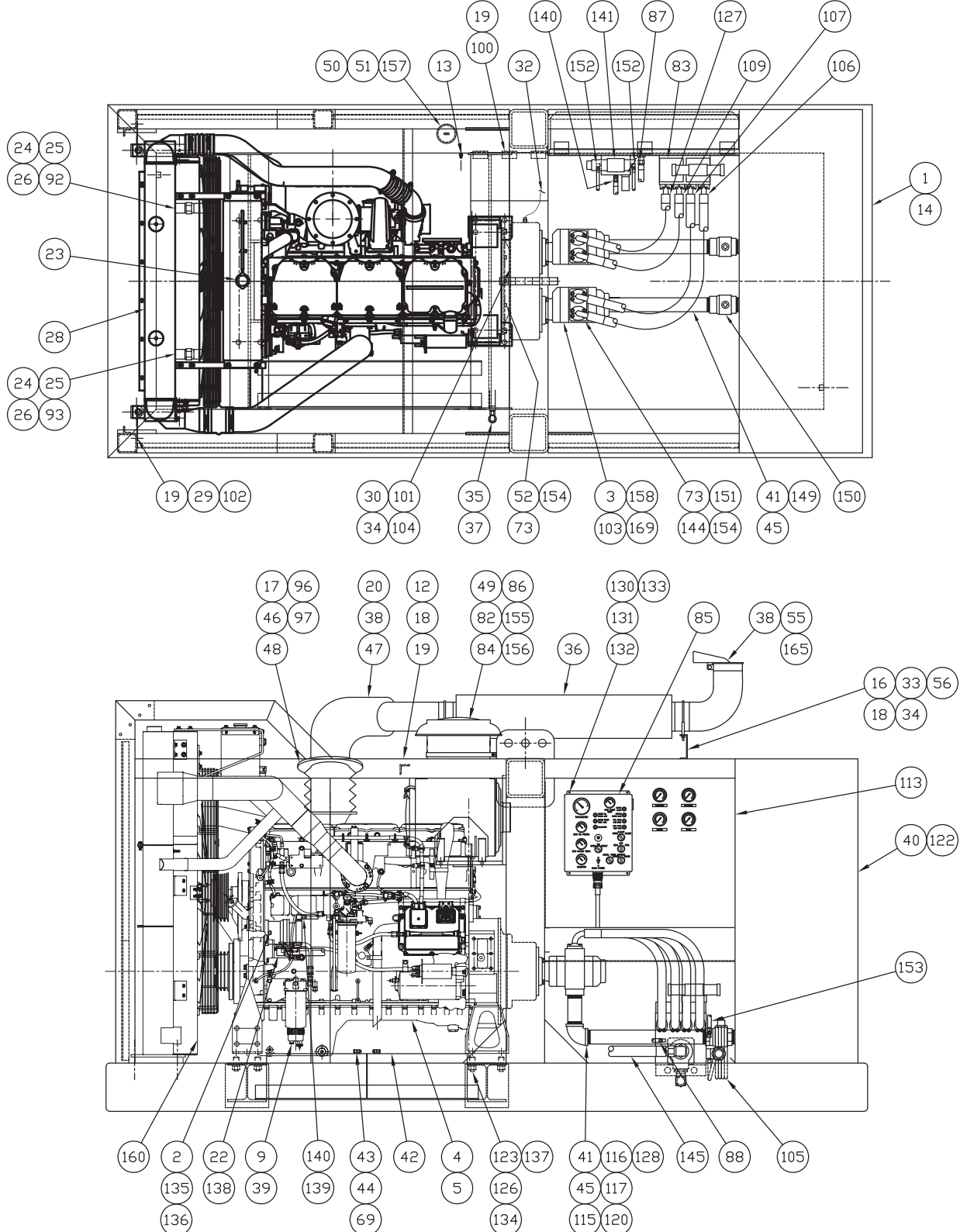


**MODEL 100K
TOP DRIVE
EARTH AUGER**

PARTS LIST

POWER UNIT - INTERNAL

800641



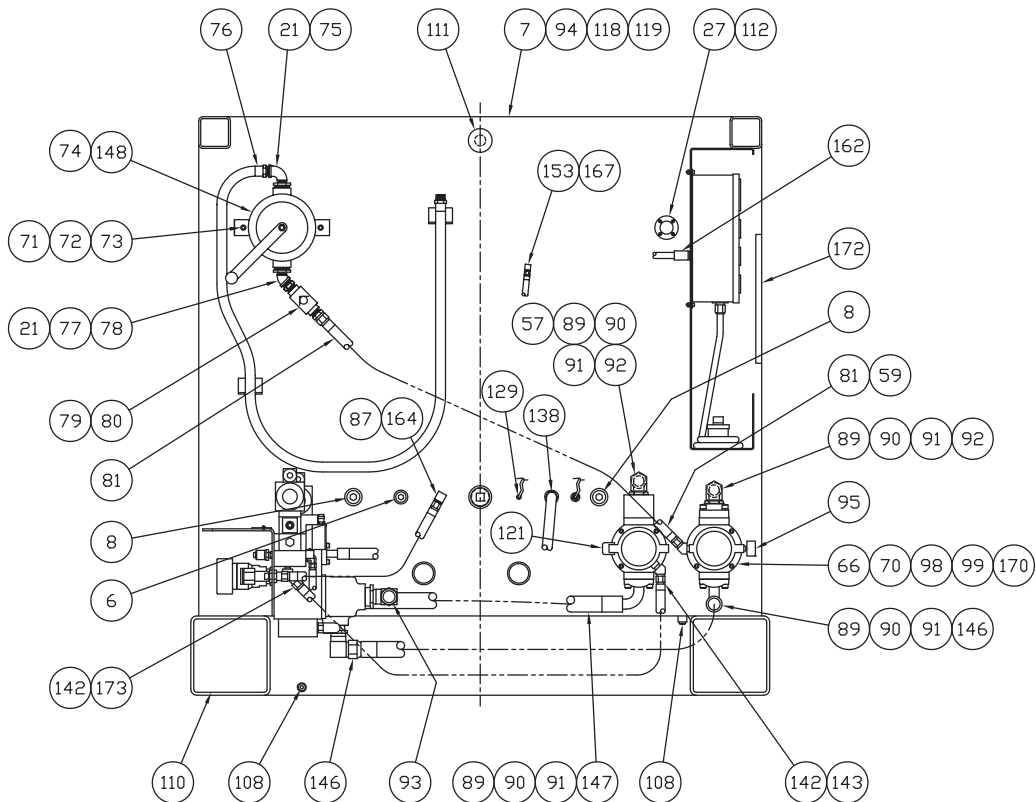
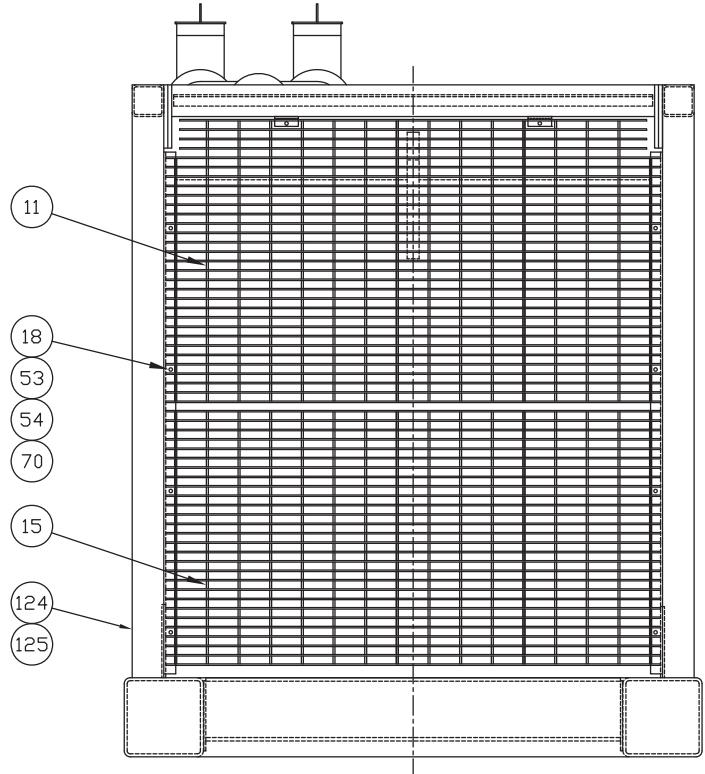
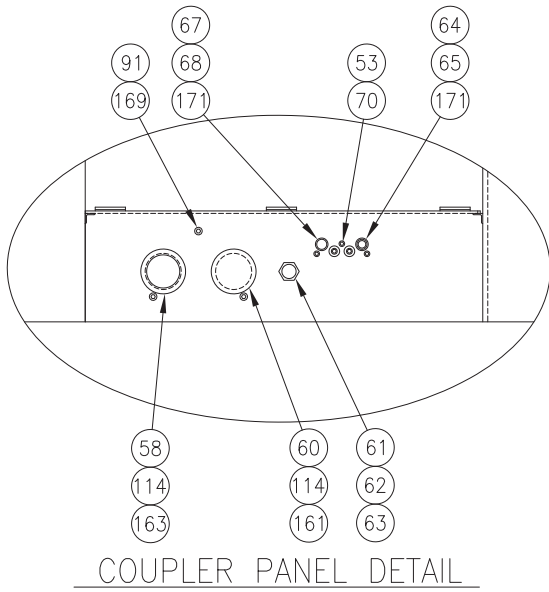


**MODEL 100K
TOP DRIVE
EARTH AUGER**

PARTS LIST

POWER UNIT - INTERNAL

800641





**MODEL 100K
TOP DRIVE
EARTH AUGER**

PARTS LIST

POWER UNIT - INTERNAL

800641

Item	Part Number	Qty.	Description
1	610011	1	580 SUBBASE ASM
2	110401	1	CLAMP PUMP
3	110490	2	570D DRIVE PUMP
4	170946	1	C-15 DIESEL ENGINE
5	400247	38	ENGINE OIL/QUART
6	100063	1	FITT2P-16P000000-000S007
7	170872	28	0.38-16 UNC X 1.00 LG SHSC SS
8	110055	2	FITT2P-20P000000-000S007
9	170931	1	FUEL WATER SEPARATOR
10	110369	1	FITT2S-06P04Q000-000H001
11	610442	1	INTAKE FRONT TOP GRATING
12	610444	1	EXHAUST RIGHT GRATING
13	110203	1	FITT2S-04M04P000-000H001
14	810919	1	580 POWER UNIT ENCLOSURE
15	610450	1	INTAKE FRONT BOTT GRATING
16	100396	8	.312-18UNC x 1.50 LG. SHCS
17	170908	16	0.88-9 UNC HEX NUT
18	100398	30	SADDLE CLIP
19	110830	40	.25 X 2 IN. HEX TEX SCREW
20	610448	1	EXHAUST ADPT WELDMENT
21	110089	2	FITT2S-20P16Q000-000H001
22	100783	1	FITT2L-16M16R000-000H001
23	100726	15	ANTIFREEZE/GAL
24	110443	2	FITT2L-24M24Q000-0000001
25	110437	2	FITT2S-24P24P000-0550301
26	100547	2	FITT2S-32P24Q000-000H006
27	110564	4	.25-20 x 2.25 LG RHMS
28	110102	1	TRIPLE CORE COOLER C-15
29	110112	2	SIDE AIR BAFFLE
30	140803	8	.5-13UNC X 1.00 LG HHCS
31	400151	50	.375 FLAT WASHER
32	100408	1	MAGNETIC PICK-UP(300-570)
33	100289	8	.312-18 HEX NUT
34	100287	8	.312 LOCK WASHER
35	400227	1	FITT2L-06M06P000-0000001
36	110504	2	MUFFLER
37	100715	1	FITT2S-16P06Q000-000H001
38	100297	4	EXHAUST PIPE CLAMP
39	170864	1	WATER SEPARATOR ASM
40	140415	435	HYDRAULIC FLUID/GAL



MODEL 100K
TOP DRIVE
EARTH AUGER

PARTS LIST

POWER UNIT - INTERNAL

800641

Item	Part Number	Qty.	Description
41	170926	4	FITT2S-40P40T000-000001
42	150081	2	BATTERY
43	110653	1	BATTERY CABLE-6
44	170918	1	BATTERY CABLE 28"
45	170922	4	2.50 HOSE CLAMP
46	170914	1	FLEX ASSEMBLY 8"
47	170912	1	GASKET 8" ANSI
48	170910	1	GASKET 8" CATERPILLAR
49	170902	1	6" HUMP HOSE
50	100417	1	FITT2C-48Q000000-0000306
51	100419	1	PETCOCK
52	110138	1	HUB SUPPORT FLEX PLATE
53	400149	27	.375 LOCK WASHER
54	100535	54	.375 -16 HEX NUT
55	110506	2	MUFFLER OUTLET ELBOW
56	110342	4	MUFFLER SUPPORT
57	110140	1	RETURN FILTER FLANGE BLOCK
58	110957	1	1.50 DUST PLUG
59	110641	1	FITT2V-12M08P000-0000001
60	110955	1	1.50 DUST CAP
61	100387	1	FITT2S-12P12B000-000H001
62	400095	1	.75 FEMALE DISCONNECT
63	400121	1	.75 DUST PLUG
64	100245	1	.375 MALE DISCONNECT
65	100257	1	.375 DUST CAP
66	110110	2	RETURN FILTER GASKET
67	100777	1	.375 FEMALE DISCONNECT
68	100737	1	.375 DUST PLUG
69	170916	1	BATTERY CABLE 20"
70	100051	19	.375-16 X 1.0 LG SHCS LOC WEL
71	100439	2	.437-X1.75 LG SHCS
72	400153	2	.437 FLAT WASHER
73	100443	32	.437 LOCK WASHER
74	100447	1	HAND PUMP
75	110377	1	FITT2L-16P16Q000-0000306
76	400215	1	HOSE100R01P016P016L08400
77	110385	1	FITT2V-16P16Q000-0000306
78	100449	1	FITT2S-16P16P000-000H001
79	100451	1	CHECK VALVE
80	300119	1	FITT2S-16P12M000-000H001



**MODEL 100K
TOP DRIVE
EARTH AUGER**

PARTS LIST

POWER UNIT - INTERNAL

800641

Item	Part Number	Qty.	Description
81	110130	1	HOSE075R01J012J012L05900
82	110431	6	6in BAND CLAMP
83	810447	1	570D CONTROL MANIFOLD ASM.
84	110429	2	AIR INTAKE ELBOW
85	810974	1	580 CONTROL BOX ASM
86	110427	1.5	AIR INTAKE TUBE PER FT
87	170874	1	HOSE075R01J012J012L04150
88	170932	1	HOSE025R02J004J004L10700
89	100596	4	#24 SPLIT FLANGE HALF
90	110119	4	2-225 O-RING
91	100119	4	.5-13 X 1.25 LG SHCS LOC WEL
92	170936	1	HOSE150R01J024F924L17200
93	170938	1	HOSE150R01J024J024L13450
94	170870	28	0.38 LOCK WASHER S.S.
95	100436	1	GAGE (0-100 P.S.I.)
96	170904	16	0.88 LOCK WASHER
97	170906	16	0.88-9 UNC X 2.50 HHCS
98	110118	2	FILTER ASSEMBLY
99	810117	4	K10 ELEMENT ASSEMBLY
100	100558	1	TOOL BOX
101	110108	1	DOUBLE PUMP DRIVE C-15
102	110106	68	FOAM TUBING / INCH
103	100614	8	.5-13 UNC X 1.50 LG HHCS
104	110444	2	TRANSMISSION OIL / GAL.
105	110680	1	HOSE025R02J004J004L40000
106	110474	1	HOSE100PT4F016F920L05250
107	110476	1	HOSE100PT4F016F920L04800
108	100423	4	FITT2P-08P000000-000S007
109	110478	1	HOSE100PT4F016F920L04500
110	100725	150	DIESEL FUEL/GAL
111	100455	1	BREATHER
112	100314	1	FLOAT SWITCH
113	110355	1	LEVEL GAUGE
114	110392	2	FITT2S-24R24P000-000H001
115	400015	2	2.5 SOLID FLANGE
116	400379	2	2-232 O-RING 90 DURO
117	110735	8	.5-13 X 2.5 LG SHCS
118	110146	1	RESERVOIR COVER PLATE
119	110144	1	COVER GASKET
120	170930	2	FITT2L-40Q40Q000-0000306



**MODEL 100K
TOP DRIVE
EARTH AUGER**

PARTS LIST

POWER UNIT - INTERNAL

800641

Item	Part Number	Qty.	Description
121	100602	1	PRESSURE SWITCH
122	610287	1	HYD RESERVOIR
123	140111	12	.75-10 X 4.0 LG SHCS LW
124	100299	6	PRIMER/GAL
125	100298	6	APE / J&M YELLOW PAINT/GAL
126	100587	12	.75-10 HEX NUT
127	110100	1	HOSE100PT4F016F920L04250
128	170928	1	FITT2S-40P40P000-050301
129	110590	1	HYDRAULIC TEMPERATURE
130	100557	4	.25-20 x .75 LG SHCS
131	100598	4	.25-20 HEX NUT
132	100597	4	.25 FLAT WASHER
133	100559	4	.25 LOCK WASHER
134	100069	12	.75 LOCK WASHER MEDIUM
135	100513	8	.5-13 X 1.5 LG SHCS
136	100027	2	.5 HI-COLLAR LOCK WASHER
137	100589	12	.75 FLAT WASHER
138	110122	1	HOSE100R01P016J016L10100
139	100787	1	FITT2L-08M08R000-000H001
140	170920	1	HOSE050PT4J008J008L08700
141	810449	1	CLAMP MANIFOLD ASM
142	300481	1	FITT2L-12M08P000-0000001
143	170934	1	HOSE075R01J012J012L05700
144	100037	4	2-222 O-RING 90 DURO
145	170940	1	HOSE150R01J024J024L04250
146	110780	1	HOSE150R01J024F924L04900
147	170942	1	HOSE150R01F924J024L03400
148	130091	1	PUMP MOUNTING BRACKET
149	170924	2	HOSE250R0400000000L01600
150	400117	2	STOP COCK
151	100045	8	#20 PA SPLIT FLANGE HALF
152	130207	2	HOSE019R01J004J004L10000
153	110120	1	HOSE038R02J006J006L06900
154	100462	28	.437-14 UNC X 1.25 LG HHCS
155	170882	1	AIR FILTER INNER ELEMENT
156	170884	1	AIR FILTER OUTER ELEMENT
157	300197	1	FITT2L-04P04Q000-0000306
158	120683	2	248-O-RING
159	110909	1	.75 X 15 LG PIPE SCH40
160	100588	1	FITT2L-24M24P000-0000001



MODEL 100K
TOP DRIVE
EARTH AUGER

PARTS LIST



MODEL 100K
TOP DRIVE
EARTH AUGER

PARTS LIST

POWER UNIT - INTERNAL

800641

Item	Part Number	Qty.	Description
161	110690	1	1.50 MALE DISCONNECT
162	110104	1	S/O CORD 25' LG
163	110692	1	1.50 FEMALE DISCONNECT
164	100489	1	FITT2L-12M12P000-0000001
165	110695	2	RAIN CAP
166	170876	1	OIL FILTER
167	140581	1	FITT2L-06M04P000-0000001
168	170878	1	FUEL FILTER
169	100121	11	.50 LOCK WASHER MEDIUM
170	110864	2	CHECK VALVE
171	110794	2	FITT2S-06P06P000-000H001
172	170902	1	DOCUMENT HOLDER
173	300231	1	FITT2V-12M12J000-000H001

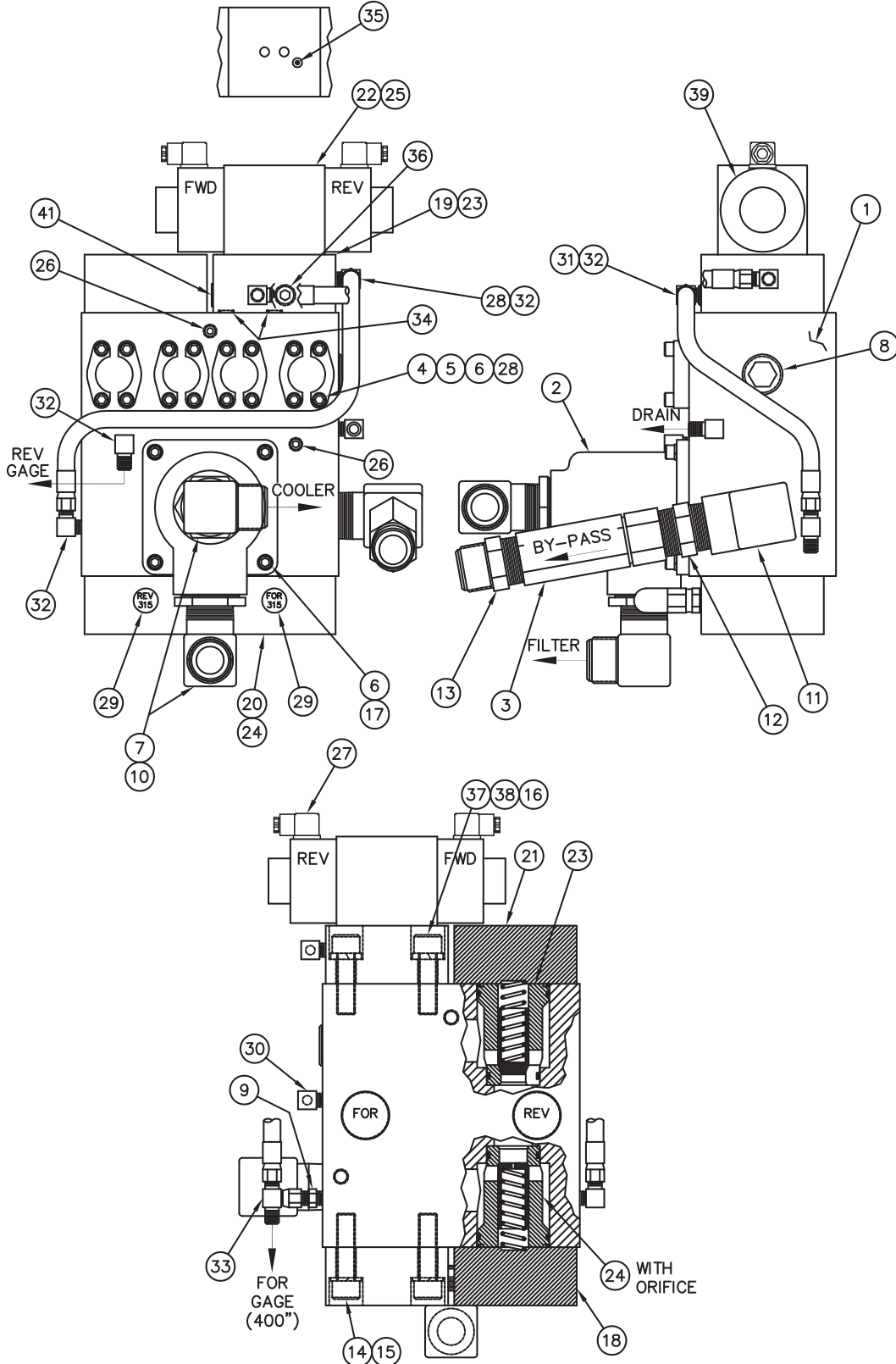


MODEL 100K
TOP DRIVE
EARTH AUGER

PARTS LIST

CONTROL MANIFOLD ASSEMBLY

810447





**MODEL 100K
TOP DRIVE
EARTH AUGER**

PARTS LIST

CONTROL MANIFOLD ASSEMBLY

810447

Item	Part Number	Qty.	Description
1	110516	1	Manifold Block
2	110628	1	Cooler Valve (V3)
3	130339	1	Check Valve (CV3)
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	120899	1	Control Valve Din Connect (V2)
26	100845	2	FITT2P-04P000000-000S007
27	120897	2	Lighted DIN Connector
28	100719	1	HOSE025R02J004J004L03000
29	100632	2	Relief Cartridge (315)
30	140581	1	FITT2L-04P06M000-0000001
31	100149	1	HOSE025R02J004J004L01900
32		4	FITT2L-04M06R000-0000001
33	100556	1	FITT2T-04M04M04J-0000001
34	110602	2	#111-O-Ring
35	140387	1	Orifice
36		1	FITT2P-10R000000-000S007
37	100067	4	.75-10 X 2.50 Lg SHCS Lockwel
38	400727	4	.75 Hi-Collar Lock Washer
39	120891	2	Solenoid for 120899 It. 25
40	120925	1	15 Foot S/O Cord
41	400992	1	FITT2P-06R000000-000S001

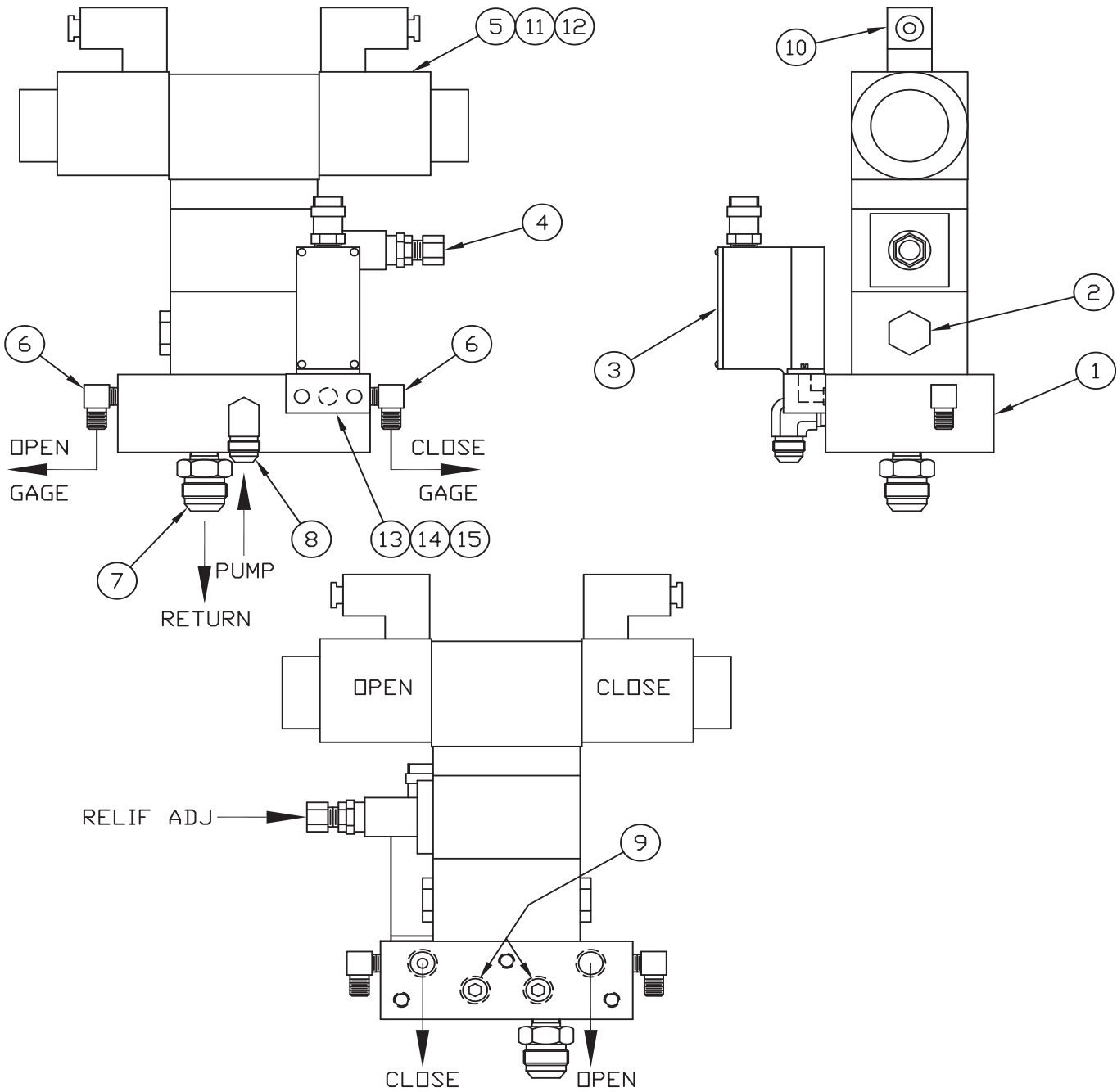


MODEL 100K
TOP DRIVE
EARTH AUGER

PARTS LIST

CLAMP MANIFOLD

810915





MODEL 100K
TOP DRIVE
EARTH AUGER

PARTS LIST

CLAMP MANIFOLD

810915

Item	Part Number	Qty	Description
1	110642	1	CLAMP MANIFOLD BLOCK
2	110149	1	CHECK VALVE
3	810425	1	PRESSURE SWITCH ASSEMBLY
4	100898	1	SANDWICH RELIEF
5	120899	1	Control Valve Din Connect (V1)
6	140539	2	FITT2L-04M02P000-0000001
7	170974	1	FITT2S-12M06P000-000H001
8	300341	1	FITT2L-08M06P000-000H001
9	400213	2	FITT2P-06P000000-000S007
10	120897	2	Lighted DIN Connector
11	170968	4	0.25-20 X 6.00 LG SHCS
12	170970	4	0.25 Bolt Spacer 0.25 Thick
13	110134	1	Turning Manifold
14	110167	2	10-32 X 1.00 SHCS
15	110602	1	2-011 O-Ring
16	120891	2	Solenoid for 120897 It. 5
17	160583	15	2-015 O-Ring between Valves
18	120925	1	156 Inch Split S/O Cord

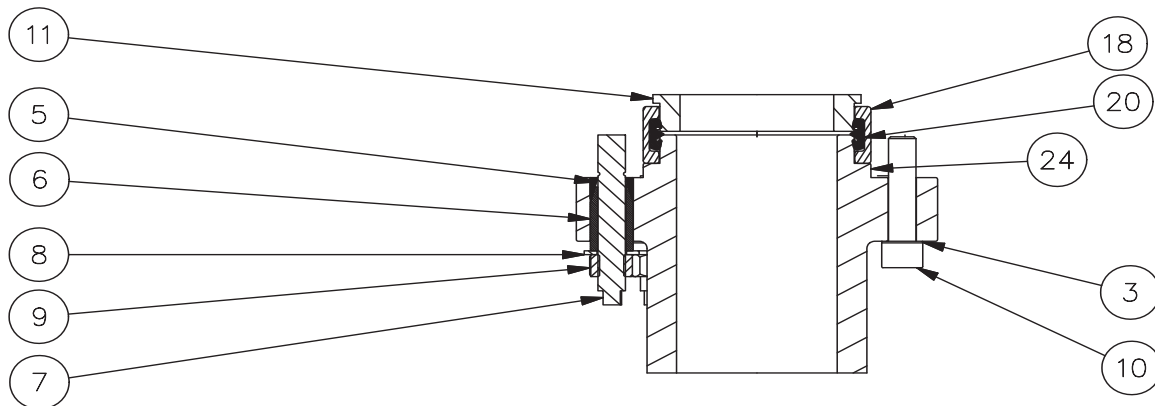
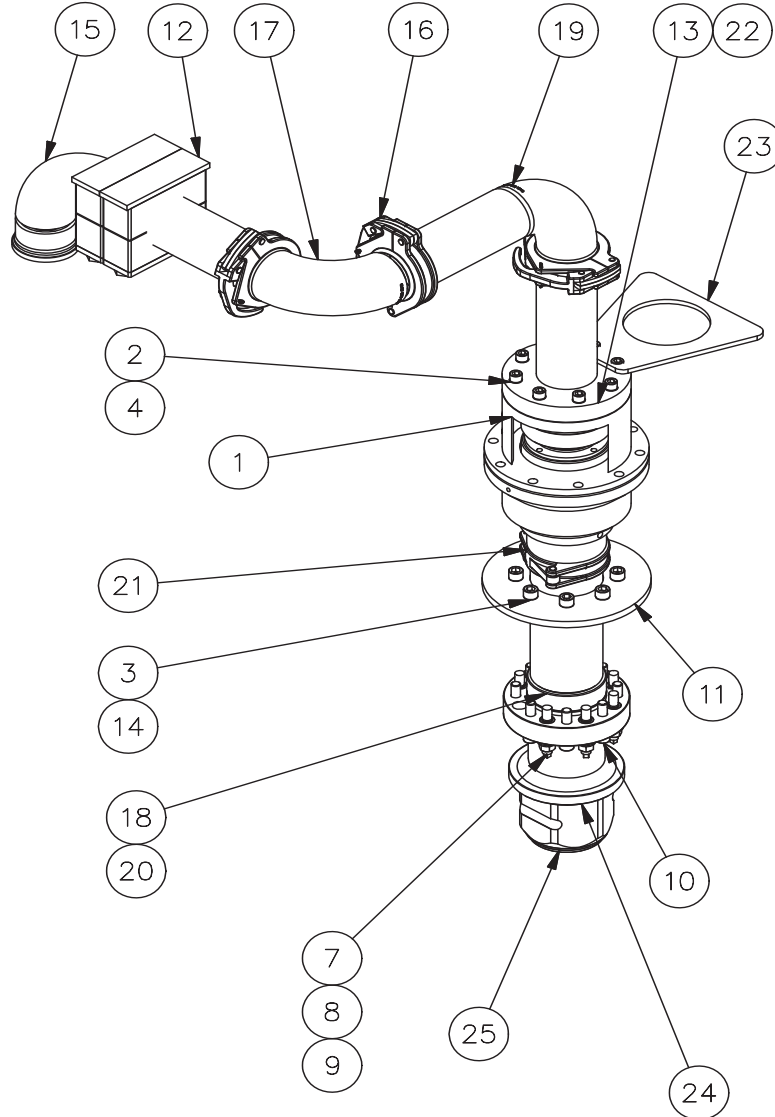


MODEL 100K
TOP DRIVE
EARTH AUGER

PARTS LIST

5 INCH ROTARY JOINT ASSEMBLY

800615





MODEL 100K
TOP DRIVE
EARTH AUGER

PARTS LIST

5 INCH ROTARY JOINT ASSEMBLY

800615

Item	Part Number	Qty.	Description
1	400530	1	5 INCH ROTARY JOINT
2	400468	8	0.75 LOCK WASHER SCHNORR
3	400470	16	0.875 LOCK WASHER SCHNORR
4	400069	8	0.75-10UNC X 2.00 SHCS
5	400554	8	FEMALE COLLET
6	400556	8	MALE COLLET
7	400552	8	STUD
8		8	0.88 FLAT WASHER
9		8	0.88-9 UNC HEX NUT
10		8	0.88-9 UNC X 3.75 LG SHCS
11	400574	1	5 INCH SLINGER ASM
12	400536	2	5 INCH PIPE CLAMP
13	400534	1	6 FLANGE TO 5 CONFORMS
14	400913	8	0.88-9 UNC X 1.50 LG SHCS
15	400532	1	5 INCH GROUTE INLET PIPE
16	400492	3	5 INCH SNAP COUPLING CONFORMS
17	400488	1	5 INCH CONFORMS ELBOW
18	400528	1	5 INCH CONFORMS SLEEVE
19	400486	1	GROUT TUBE
20	400482	1	5 INCH CONFORMS GASKET
21	400480	1	5 INCH 2 BOLT COUPLING CONFORMS
22	400478	1	GASKET
23	400458	1	ANTI ROTATION PLATE
24	400546	1	5 INCH MALE JEFFERY HEX
25	400446	1	GROUT SEAL
26	400456	1	200 MM HEX COUPLER FEMALE
27	400454	1	200 MM LOCKING PIN SET

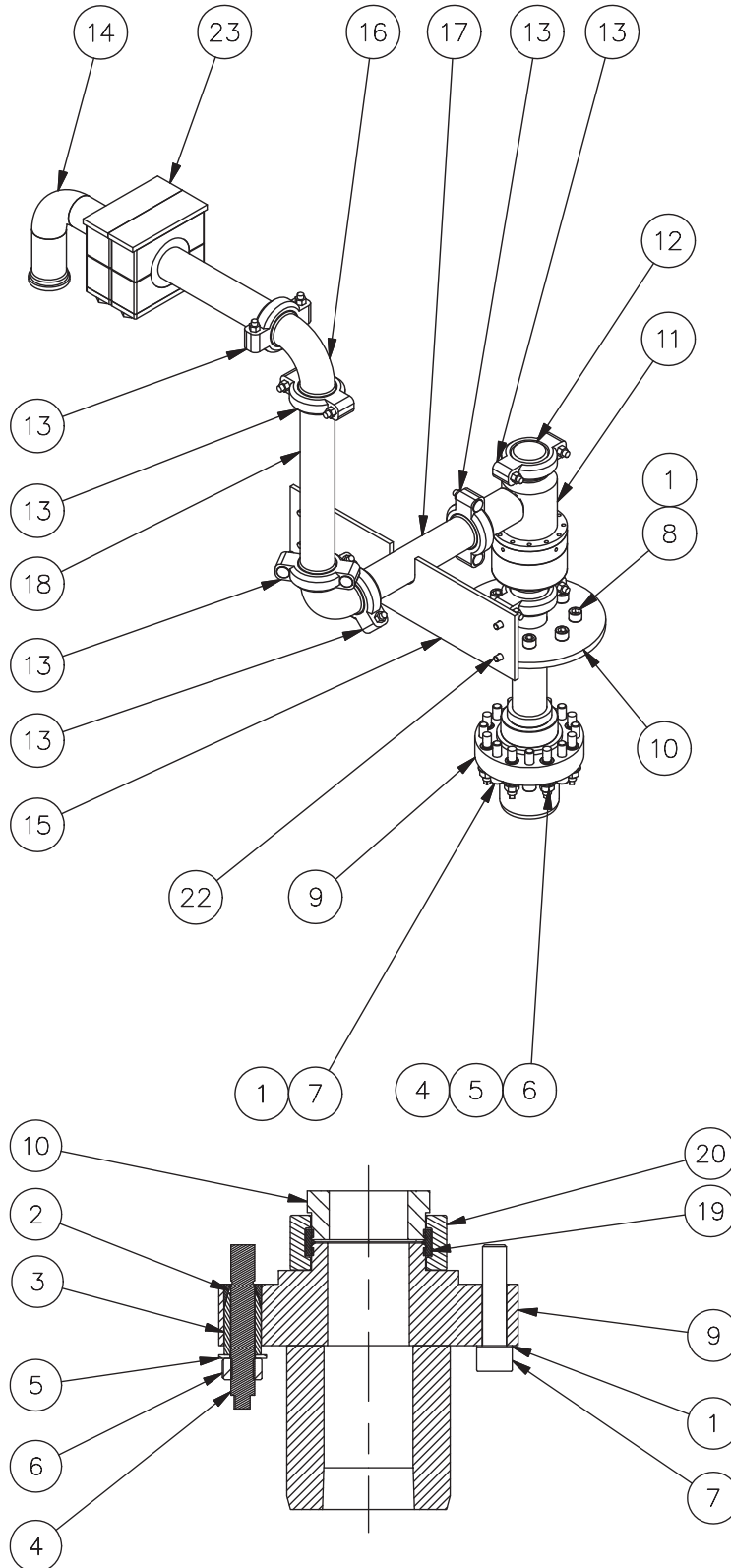


**MODEL 100K
TOP DRIVE
EARTH AUGER**

PARTS LIST

3 INCH ROTARY JOINT ASSEMBLY

800623





MODEL 100K
TOP DRIVE
EARTH AUGER

PARTS LIST

3 INCH ROTARY JOINT ASSEMBLY

800623

Item	Part Number	Qty.	Description
1	400470	16	0.875 LOCK WASHER SCHNORR
2	400554	8	FEMALE COLLET
3	400556	8	MALE COLLET
4	400552	8	STUD
5		8	0.88 FLAT WASHER
6		8	0.88-9UNC HEX NUT
7		8	0.88-9 UNC X 3.75 LG SHCS
8	400913	8	0.88-9 UNC X 1.50 LG SHCS
9	400506	1	3 INCH API BOTTOM FLANGE
10	400504	1	3 INCH SLINGER ASM
11	400590	1	3 INCH ROTARY JOINT
12	631052P	1	CONFORMS PLUG
13	631057	7	3 INCH CONFORMS COUPLING 2 BOLT
14	400500	1	3 INCH INLET TUBE
15	400474	1	3" GROUTE TUBE PLATE
16	400498	2	3 INCH CONFORMS ELBOW
17	400496	1	3 INCH SWIVEL PIPE
18	400494	1	GROUT PIPE
19	400484	1	3 INCH CONFORMS GASKET
20	400502	1	3 INCH CONFORMS SLEEVE
21	400466	4	0.63 LOCK WASHER SHCNORR
22	100575	4	0.63-11UNC X 1.25 LG SHCS
23	400476	2	3 INCH PIPE CLAMP

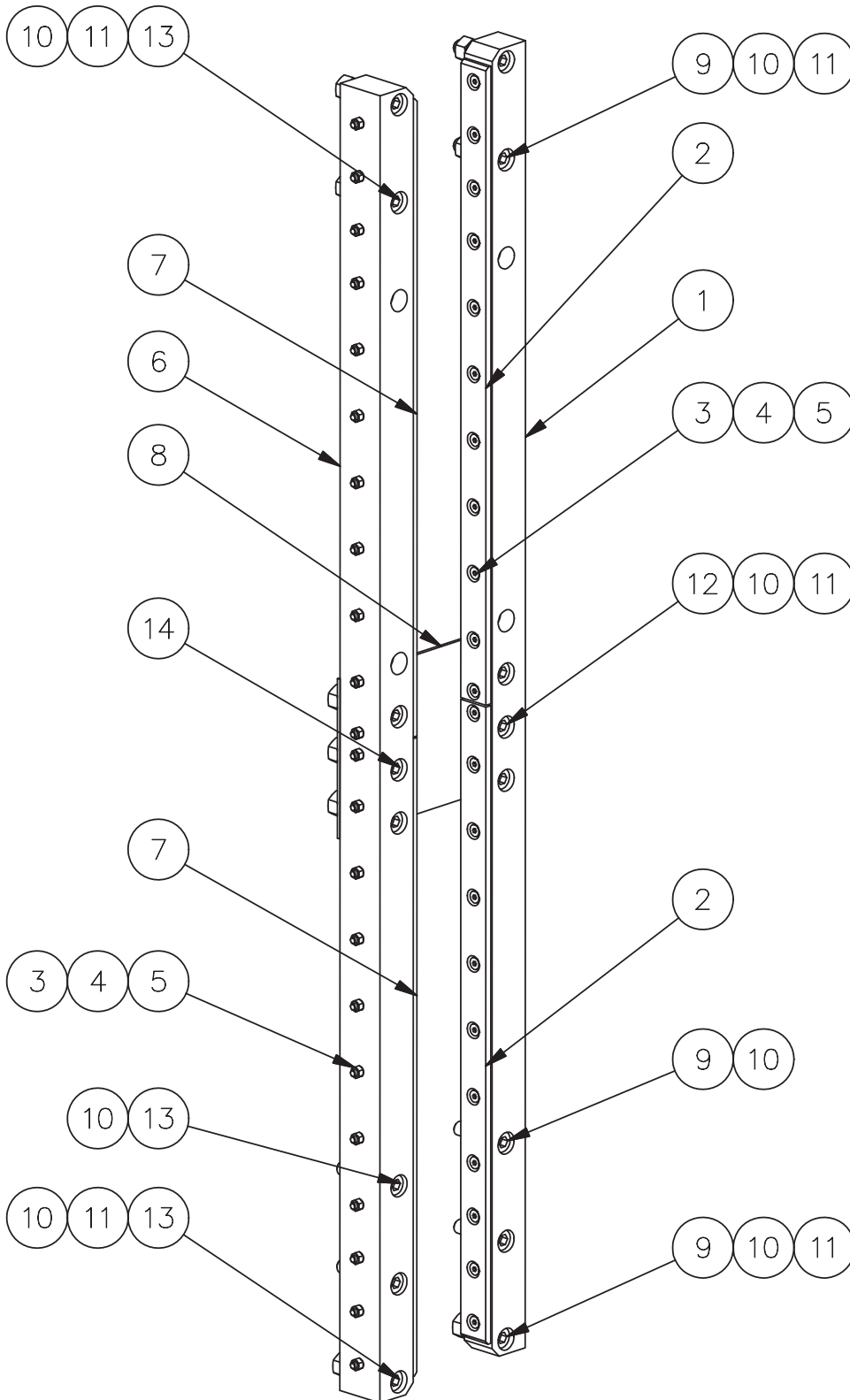


MODEL 100K
TOP DRIVE
EARTH AUGER

PARTS LIST

U37 INCH LEAD GUIDES ASSEMBLY

800619





MODEL 100K
TOP DRIVE
EARTH AUGER

PARTS LIST

U37 INCH LEAD GUIDES ASEMBLY

800619

Item	Part Number	Qty.	Description
1	400414	2	LEAD GUIDE REAR
2	400410	4	WEAR PAD REAR
3		88	0.50-13UNC X 4.50 LG FHCS
4	400464	88	0.50 LOCK WASHER SCHNORR
5	100485	88	0.50-13UNC HEX NUT
6	400412	2	LEAD GUIDE FRONT
7	400408	4	WEAR PAD FRONT
8	400406	2	GUIDE SPACER
9		10	1.00-8UNC X 3.50 LG SHCS
10	400472	32	1.00 LOCK WASHER SCHNORR
11	400051	24	1.00-8UNC HEX NUT
12	100212	6	1.00-8UNC X 4.00 LG SHCS
13		10	1.00-8UNC X 4.50 LG SHCS
14	300015	6	1.00-8UNC X 5.00 LG SHCS

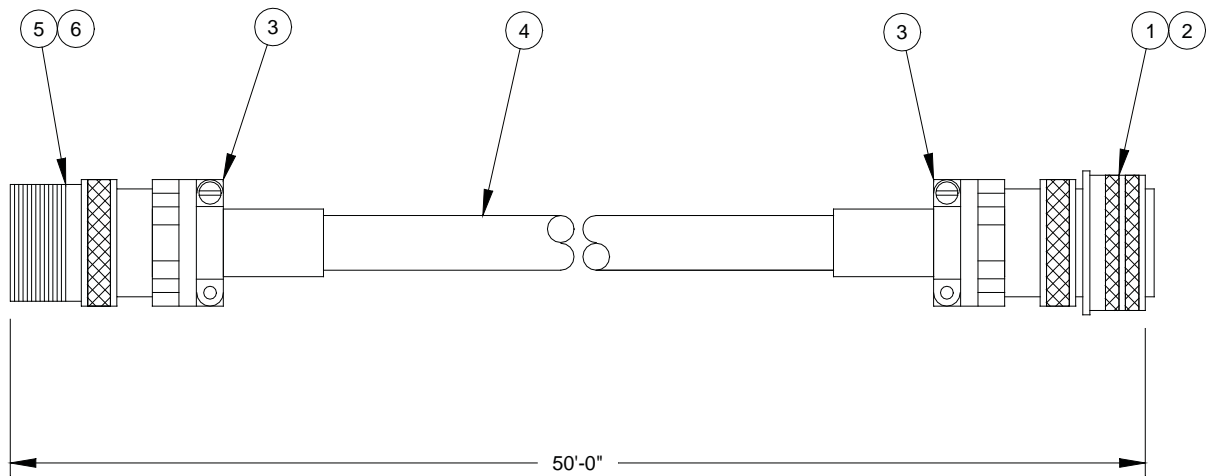


MODEL 100K
TOP DRIVE
EARTH AUGER

PARTS LIST

50' PENDANT EXTENSION CABLE

800059





MODEL 100K
TOP DRIVE
EARTH AUGER

PARTS LIST

50' PENDANT EXTENSION CABLE

800059

<u>Item</u>	<u>Part Number</u>	<u>Qty.</u>	<u>Description</u>
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-PLG



**MODEL 100K
TOP DRIVE
EARTH AUGER**

PARTS LIST

VIII. ORDERING PARTS

E. MISCELLANEOUS ACCESSORIES

1. Tools

<u>Part Number</u>	<u>Qty.</u>	<u>Description</u>
100651	1	24-Volt Test Light
810045	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) 1/ 2" Allen Wrench - Long Arm
100681		(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

<u>Part Number</u>	<u>Qty.</u>	<u>Description</u>
810013	5 GAL	Hydraulic Fluid
810011	5 GAL	Vibration Case Lubricant
100726	1 GAL	Coolant/Anti-Freeze
100298	1 GAL	APE / J&M Yellow Paint
100299	1 GAL	Primer



MODEL 100K
TOP DRIVE
EARTH AUGER

PARTS LIST

VIII. ORDERING PARTS

E. MISCELLANEOUS ACCESSORIES (CONTINUED)

3. 100K Hose Group Kit - Internal

Item	P/N	Qty.	Description	Page Ref.
7		1	HOSE MOTOR 1 FWD PORT B	VIII-9
8		1	HOSE MOTOR 2 FWD PORT B	VIII-9
9		1	HOSE MOTOR 3 FWD PORT B	VIII-9
10		1	HOSE MOTOR 4 FWD PORT B	VIII-9
11		1	HOSE MOTOR 1 REV PORT A	VIII-9
12		1	HOSE MOTOR 2 REV PORT A	VIII-9
13		1	HOSE MOTOR 3 REV PORT A	VIII-9
14		1	HOSE POWER UNIT REV	VIII-6
15		1	HOSE POWER UNIT FWD	VIII-6
16		1	HOSE GEAR BOX BREATHER	VIII-6
17		1	HOSE MOTOR 1 CASE DRAIN	VIII-9
18		1	HOSE MOTOR 4 REV PORT A	VIII-9

4. 580 Hose Group Kit - Internal

Item	P/N	Qty.	Description	Page Ref.
76	400215	1	HOSE100R01P016P016L08400	VIII-29
81	110130	1	HOSE075R01J012J012L05999	VIII-29
87	170874	1	HOSE075R01J012J012L04150	VIII-28
88	170932	1	HOSE025R01J004J004L10700	VIII-28
92	170932	1	HOSE150R01J024F924L17200	VIII-28
93	170938	1	HOSE150R01J024J024L13450	VIII-28
105	110680	1	HOSE025R02J004J004L40000	VIII-28
106	110474	1	HOSE100PT4F016F920L04350	VIII-28
107	110476	1	HOSE100PT4F016F920L04100	VIII-28
109	110478	1	HOSE100PT4F016F920L04000	VIII-28
127	110100	1	HOSE100PT4F016F920L04250	VIII-28
138	110122	1	HOSE100R01P016J016L10100	VIII-28
140	170920	1	HOSE050PT4J008J008L08700	VIII-28
143	170934	1	HOSE075R01J012J012L05700	VIII-29
145	170940	1	HOSE150R01J024J024L04250	VIII-28
146	110780	1	HOSE150R01J024F924L04900	VIII-29
147	110780	1	HOSE150R01J024F924L04900	VIII-29
149	170924	2	HOSE250R0400000000L01600	VIII-28
152	130207	2	HOSE019R01J004J004L10000	VIII-28
153	110120	1	HOSE038R02J006J006L06900	VIII-28
28	100719	1	HOSE025R02J004J004L03000	VIII-36
31	100149	1	HOSE025R02J004J004L01900	VIII-36



MODEL 100K
TOP DRIVE
EARTH AUGER

PARTS LIST



**MODEL 100K
TOP DRIVE
EARTH AUGER**

PARTS LIST

VIII. ORDERING PARTS

E. MISCELLANEOUS ACCESSORIES (CONTINUED)

5. 100K O-Ring Kit

<u>P/N</u>	<u>Qty.</u>	<u>Description</u>
100037	16	2-222 O-ring
110119	2	2-225 O-ring
170811	135	O-ring Cord 0.125 CS / Inch
400580	1	2-383 O-RING
400416	1	2-280 O-RING
352067	4	2-274 O-RING

6. 580 O-Ring Kit

<u>P/N</u>	<u>Qty.</u>	<u>Description</u>
100037	4	2-222 O-ring
110119	4	2-225 O-ring
400379	2	2-232 O-ring
120683	2	2-248 O-ring
100091	4	2-219 O-ring
110602	2	2-111 O-ring
120891	15	2-015 O-ring
170972	1	2-011 O-ring

7. Quick Disconnect Rebuild Kit

850067

<u>P/N</u>	<u>Qty.</u>	<u>Description</u>
	1	Male Check Poppet Valve
	1	Female Check Poppet Valve
	2	Snap-Lock Ring
	1	Snap-Ring Pliers

8. Quick Disconnect Seal Kit

850185

<u>P/N</u>	<u>Qty.</u>	<u>Description</u>
110829	2	2-230 O-ring
110980	2	230 Backup
110230	2	2-216 O-ring



**MODEL 100K
TOP DRIVE
EARTH AUGER**

PARTS LIST

VIII. ORDERING PARTS

F. RECOMMENDED SPARE PARTS

EARTH AUGER 800613 Refer to page VIII-8

<u>Item</u>	<u>P/N</u>	<u>Qty.</u>	<u>Description</u>
20	400845	1	BREATHER
37	400444	1	SIGHT GLASS 5 INCH
42	100037	16	2-222 O-RING
43	110119	2	2-225 O-RING

GEAR CASE 810951 Refer to page VIII-10

<u>Item</u>	<u>P/N</u>	<u>Qty.</u>	<u>Description</u>
7	400582	1	NYLON FACE SEAL
8	400580	1	2-383 O-RING
9	400578	4	F12-125 MOTOR
10	400576	1	WAVE SPRING
18	400635	2	SEAL

TERMINAL MANIFOLD 810953 Refer to page VIII-14

<u>Item</u>	<u>P/N</u>	<u>Qty.</u>	<u>Description</u>
7	400570	2	PRIORITY VALVE
11	400568	2	CHECK VALVE
12	100032	1	RELIEF VALVE
14	400418	1	PRIORITY VALVE

HOT OIL SHUTTLE 810976 Refer to page VIII-16

<u>Item</u>	<u>P/N</u>	<u>Qty.</u>	<u>Description</u>
2	400424	1	SHUTTLE VALVE
7	300720	2	CHECK VALVE



**MODEL 100K
TOP DRIVE
EARTH AUGER**

PARTS LIST

VIII. ORDERING PARTS

F. RECOMMENDED SPARE PARTS (CONTINUED)

POWER UNIT - INTERNAL (580) 800595 Refer to page VIII-24 & 25

<u>Item</u>	<u>P/N</u>	<u>Qty</u>	<u>Description</u>
9	170931	1	Fuel Water Separator Element
99	810117	4	Hyd.Oil Filter
155	170882	1	Air Filter Inner Element
156	170884	1	Air Filter Outer Element
166	170876	1	Oil Filter Element
168	170878	1	Fuel Filter Element

5 INCH ROTARY JOINT ASSEMBLY 800615 Refer to page VIII-40

<u>Item</u>	<u>P/N</u>	<u>Qty.</u>	<u>Description</u>
16	400492	1	5 INCH SNAP COUPLING CONFORMS
20	400482	1	5 INCH CONFORMS GASKET
21	400480	1	5 INCH 2 BOLT COUPLING CONFORMS
22	400460	1	2-432 O-RING
25	400446	3	GROUT SEAL

3 INCH ROTARY JOINT ASSEMBLY 800623 Refer to page VIII-42

<u>Item</u>	<u>P/N</u>	<u>Qty.</u>	<u>Description</u>
13	631057	3	3 INCH CONFORMS COUPLING 2 BOLT
19	400484	3	3 INCH CONFORMS GASKET

U37 INCH LEAD GUIDES ASEMBLY 800619 Refer to page VIII-44

<u>Item</u>	<u>P/N</u>	<u>Qty.</u>	<u>Description</u>
2	400410	4	WEAR PAD REAR
3		20	0.50-13UNC X 4.50 LG FHCS
4	400464	20	0.50 LOCK WASHER SCHNORR
5	100485	20	0.50-13UNC HEX NUT
7	400408	4	WEAR PAD FRONT



MODEL 100K
TOP DRIVE
EARTH AUGER

PARTS LIST



**MODEL 100K
TOP DRIVE
EARTH AUGER**

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.



MODEL 100K
TOP DRIVE
EARTH AUGER

PARTS LIST