DRAFT
Maintenance Effort Remains Consistent with the Prior Fiscal Year

STATEMENT OF WORK
INSPECT REPAIR ONLY AS NECESSARY (IROAN)
DITCHING MACHINE
MODEL 2300
NSN 3805-01-240-0995

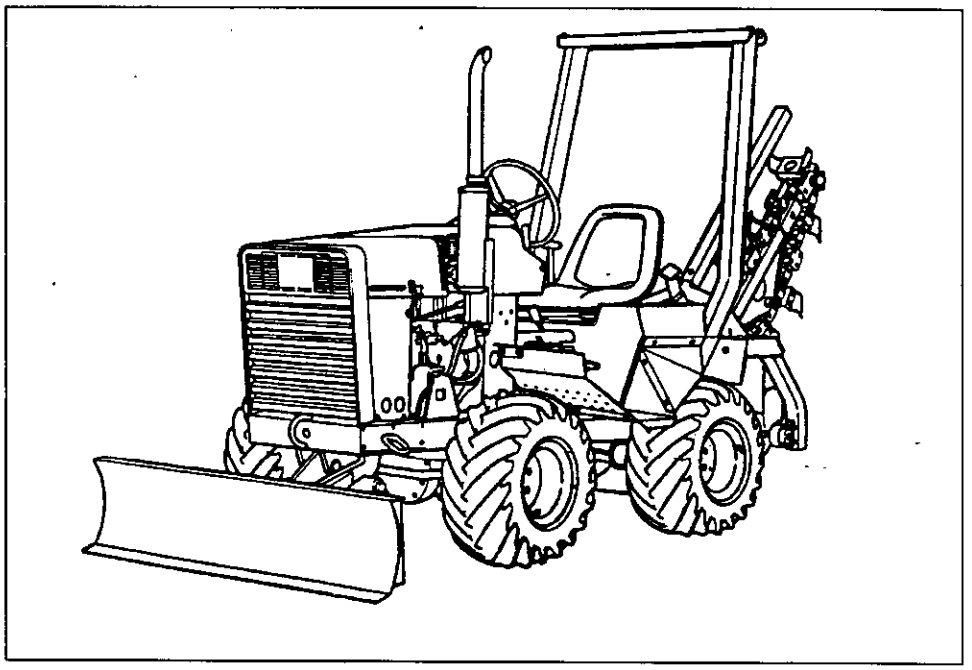

TABLE OF CONTENTS

Para	Section	PAGE
1.0	SCOPE	1
1.1	Background	1
2.0	APPLICABLE DOCUMENTS	1
2.1	Military Standards	1
2.2	Other Government Documents And Publications	1
2.3	Industry Standards	2
3.0	REQUIREMENTS	3
3.1	General Tasks	3
3.1.1	IROAN Objective and Functions	3
3.2	Detailed Tasks	3
3.2.1	Phase I Pre-Induction	3
3.2.2	Phase II IROAN	4
3.2.3	Phase III Inspection, Testing and Acceptance	23
3.2.4	Phase IV Packaging, Handling, Storage and Transportation (PHS&T)	24
3.3	Configuration Management	25
3.3.1	Configuration Status Accounting (CSA)	25
3.3.2	Configuration Control	25
3.4	Government Furnished Equipment Accountability (GFE)	25
3.5	Contractor Furnished Material (CFM)	26
3.6	Quality Assurance Provisions	26
3.7	Acceptance	27
3.8	Rejection	27
4.0	REPORTS	27
4.1	Inspection Check Sheets	27

APPENDICES

Appendix A Pre-Induction Checklist for Ditching Machine	A-1
Appendix B Final Operational Test Sheet for Ditching Machine	B-1

STATEMENT OF WORK FOR THE
Inspect Repair Only as Necessary (IROAN)
for the
Ditching Machine, Model 2300
NSN 3805-01-240-0995

1.0 SCOPE. This Statement of Work (SOW) establishes and sets forth tasks and identifies the work efforts that shall be performed by the contractor in the IROAN effort of the Ditching Machine Model 2300, hereafter referred to as the Ditching Machine. This document contains requirements to restore the Ditching Machine to condition Code "A." Condition Code "A" is defined as "serviceable/issuable without qualification. Equipment defined as such should be new, used, repaired or reconditioned material is serviceable/issuable to all customers without limitation or restriction." This includes material with more than six months shelf-life remaining. National Stock Number (NSN) shall be known as the Ditching Machine (NSN 3805-01-240-0995.)

1.1 Background. IROAN is defined as "The maintenance technique which determines the minimum repairs necessary to restore equipment components or assemblies, to prescribed standards by utilizing all available diagnostic equipment and test procedures in order to minimize disassembly and parts replacement."

2.0 APPLICABLE DOCUMENTS. The following documents form a part of this SOW to the extent specified. Unless otherwise specified, issues of these documents are those listed which are in effect on the date of solicitation. In the event of conflict between the documents referenced herein and the contents of this SOW, the contents of this SOW shall be the superseding requirement.

2.1 Military Standards.

MIL-STD-129	DoD Standard Practice for Military Marking
MIL-STD-642	Identification Marking of Combat and Tactical Transport Vehicles.
MIL-STD-130	Identification Marking of U.S. Military Property

2.2 Other Government Documents and Publications. The issues of these documents cited below shall be used:

SL-4-10050A	Repair Parts List For Ditching Machine Model 2300 W/CH1
TM-10050A-14	Operation and Maintenance Instructions for Ditching Machine Ditch Witch Model 2300 W/CH1
LI-10050A	Lubrication Instructions for Ditching Machine, Model 2300

MI-10050A-25/1	Modification Instruction, Relocation of Battery Cables on the Ditching Machine, Model 2300
MI-10050A-25/2	Modification Instruction, Securing the Backfill Blade on the Ditching Machine, Model 2300
MI-10050A-35/3	Modification Instruction, Installation of Lifting Eyes on the Ditching Machine, Model 2300
Ditch Witch	Parts Book 2300
ATPD-2241	Vehicles, Wheeled Preparation for Shipment and Storage
TM9-2610-200-14	Care, Maintenance, Repair & Inspection of Pneumatic Tires and Inner Tubes
DoD 4000.25-1-M	MILSTRIP Manual

Military Handbooks (For Guidance)

MIL-HDBK-61	Configuration Management

2.3 Industry Standards.

ANSI/ISO/ ASQC Q9002-1994	Quality Systems-Model for Quality Assurance in Production Installation and Servicing

Industry Standards (For Guidance)

ANSI/EIA-649	National Consensus Standards for Configuration Management

Copies of Military Standards and Specifications are available from the DOD Single Stock Point, Document Automation and Production Service, Building 4/D, 700 Robbins Avenue, Philadelphia, PA 19111-5094, Telephone (215) 697-2179 or DSN 442-2179, or http://www.dodssp.daps.mil. Copies of other government documents and publications required by contractors in connection with specific SOW requirements shall be obtained through the Contracts Department (Code 891), P. O. Drawer 43019, 814 Radford Blvd., Marine Corps Logistics Bases, Albany, GA 31704-3019. Commercial telephone number (229) 639-6761 or DSN 567- 6761. Copies of engineering drawings, if applicable, shall be obtained from Supply Chain Management Center, Attn: Code 583-1, 814 Radford Blvd., Suite 20320, Albany, Georgia 31704-0320.

3.0 REQUIREMENTS.

3.1 General Tasks. In fulfilling the specified requirements, the contractor shall provide and maintain a Quality System that adheres to the requirements of ANSI/ISO/ASQC Q9002-1994, Quality Systems-Model for Quality Assurance in Production, Installation and Servicing, for supplies and services.

a. Provide materials, labor, facilities, missing parts and repair parts necessary to inspect, diagnose, restore and test the Ditching Machine. Upon completion of IROAN, repaired equipment shall be Condition Code "A".

b. Provide all tools and test equipment required to test, inspect and calibrate the Ditching Machine.

c. In-Process and final on-site testing must be witnessed by Marine Corps Systems Command (MCSC) (Code CSLE), Albany GA., representative. The contractor shall be responsible for all structural, electrical and mechanical requirements associated with the restoration of the Ditching Machine.

3.1.1 IROAN Objectives and Functions. After IROAN, the Ditching Machine shall have the following minimum characteristics:

a. Reliable as per system specifications.

b. Maintainable as per system specifications.

c. Serviceable (Condition Code "A").

d. All vehicle systems and components shall operate as intended.

3.2 Detailed Tasks. The following tasks describe the different phases for IROAN of the Ditching Machine:

Phase I	Pre-Induction
Phase II	IROAN
Phase III	Inspection, Testing and Acceptance
Phase IV	Packaging, Handling, Storage and Transportation (PHS&T)

3.2.1 Phase I-Pre-Induction.

a. A Pre-Induction Inspection Analysis shall be performed for the Ditching Machine using the contractor facility's diagnosis, inspection and testing techniques to determine extent of work and parts required. The vehicle engine shall be tested using JP5/8 fuel. These findings shall be annotated on the Pre-Inspection Checklist Sheet located in Appendix A, maintained and be made available upon request to the MCSC (Code CSLE), Albany, GA., representatives.

b. Test equipment shall be used to determine that assemblies and subassemblies meet prescribed reliability performance and work requirements. In cases when conformance to the SOW cannot be certified through existing inspection and testing procedures and by use of diagnostic equipment, the assembly shall be removed, disassembled, inspected, tested or repaired to the degree necessary to assure full conformance with this SOW.

c. Oil seal and gasket leakage. Evidence of lubricating or hydraulic oils passing through or around a seal is not a defect; however, consideration must be given to the fluid capacity in the item being checked/inspected. Inspection shall normally be performed during and immediately following an operational test, but not sufficient duration to allow the fluids to return to ambient temperature. The following shall be used as a guide in determining degree of oil loss:

(1) Class I - Seepage of fluid indicated by wetness or discoloration not great enough to form drops.

(2) Class II - Leakage of fluid great enough to form drops, but not enough to cause drops to fall from the item being checked/inspected.

(3) Class III - Leakage of fluid great enough to form drops that fall from the item being checked /inspected.

NOTE: A CLASS I OR II LEAK, EXCEPT FUEL SYSTEM AND BRAKE SYSTEM, IS AN ACCEPTABLE CONDITION AT ANY TIME AND DOES NOT REQUIRE CORRECTIVE ACTION.

3.2.2 Phase II -IROAN. IROAN shall be performed at the contractors facility. Information recorded on the IROAN Pre-Induction Checklist Sheets (Appendix A) during the Pre-Induction Phase shall be used as a guide by the contractor to achieve the mechanical baseline of production. After Pre-Induction Tests and Inspections have been completed, repair of the Ditching Machine shall be accomplished in accordance with this SOW. Deficiencies noted on the Pre-Induction Checklist Sheet (Appendix A) during Phase I shall be repaired/replaced. Components or assemblies shall not be disassembled for replacement of mandatory parts unless that part has failed, or the component assembly where in the part is located is disassembled for repair. Mandatory replacement parts are contained in TM-10050A-14, SL-4-10050A and Ditch Witch Parts Book 2300. The Final Operational Test Sheet shall be completed and can be found in Appendix B of this SOW.

a. Detailed Mechanical Rework. Ditching Machines received for IROAN shall be reworked in accordance with the following paragraphs. All discrepancies noted on the IROAN Pre-Induction Checklist Sheet (Appendix A) shall be repaired/replaced.

b. Hardware.

(1) Replace broken, unserviceable and/or missing hardware including nuts, bolts, screws, washers, turnlock fasteners, safety and one-time use items, etc, in accordance with this SOW. Unserviceable would include any of the above that failed to function properly.

(2) Ensure proper hardware locking devices are present on all moving mechanical assemblies.

(3) Hardware normally supplied with commercial parts shall be used unless specifically prohibited.

(4) Hardware used in this IROAN shall be in accordance with existing technical publications.

c. Engine Assembly.

(1) Test Procedures. After all Pre-Induction Tests and Inspections have been completed, the power pack shall be steam cleaned, inspected for loose or missing items and painted. Follow all warnings and procedures to assure you are working with safe and efficient methods and conditions. Inspect and repair/replace the following assemblies and all sub assemblies as required:

(a) Cylinder Head Assembly

(b) Rocker Arm/Bracket Assembly

(c) Rocker Chamber Cover Assembly

(d) Push Rod and Tube Assembly

(e) Crankshaft

(f) Crankshaft Gear Wheel Assembly

(g) Crankshaft Main Bearings

(h) Upper and Lower Bearing Brackets

(i) Thrust Bearing and Housing Assembly

(j) Counter Weights Assembly

(k) Drive Shaft Gear Wheel Assembly

(l) Cylinder Sleeve and Shims Assembly

(m) Piston and Piston Rings

(n) Crankcase Assembly

(o) Oil Pressure Relief Valve Assembly

(p) Connecting Rod and Bearings

(q) Cylinder Liner

(r) Engine Balance and Balance Weights

(s) Camshaft and Bearings

(t) Gear Train Assembly

(u) Camshaft Gear Wheel Assembly

(v) Idler Gear and Bearing Assembly

(w) Crankshaft Timing Gear Assembly

(x) Engine Mount Assembly

Front Cover Assembly

(a) Front Cover Assembly

(b) Seal and Bearing Assembly

(c) V-Belt Pulley Assembly

(d) Stop Lever Assembly

(e) Filler Cap Assembly

(f) Shaft and Spring Assembly

(g) Arm Assembly

Fuel System

(a) Fuel Injector Assembly

(b) Injector Tube Assembly

(c) Fuel Feed Pump and Parts Kit Assembly

(d) Fuel Injection Pump Assembly

(e) Fuel Strainer and Fuel Filter Assembly

(f) Fuel Bowl Assembly

(g) Fuel Filter Head Assembly

(h) Fuel Lines and Fittings Assembly

(i) Fuel Tank Assembly

(j) Tube Assembly

(k) Fuel Gauge Assembly

(l) Filler Neck and Cap Assembly

(m) Replace fuel filter(s) 100%.

REGULATOR ASSEMBLY

(a) Guide Plate Assembly

(b) Drive Shaft and Bearing Assembly

(c) Governor Assembly

(d) Coupling Half Assembly

(e) Lever Arm Assembly

(f) Leaf Spring Assembly

FLYWHEEL ASSEMBLY

(a) Adapter Housing Assembly

(b) Flywheel and Valve Assembly

(c) Bearings and Seal Assembly

(d) Bearing Housing Assembly

(e) Stop Ring Assembly

BLOWER ASSEMBLY

(a) Rotor Assembly

(b) Impeller Assembly

(c) Blower Jacket Assembly

(d) V-Belts

ENGINE AIR COOLING ASSEMBLY

(a) Air Cowling Assembly

(b) Cover Plate Assembly

(c) Stay Plate Assemblies

(d) Shield Assembly

LUBRICATION SYSTEM

(a) Lubrication Oil Pump Assembly

(b) Lubrication Oil Filter Assembly

(c) Lubricating Oil Cooler Assembly

(d) Oil Level Dipstick Assembly

(e) Cover Assembly

(f) Breather and Hose Assembly

(g) Screw Plug, Disk and Spring Assembly

(2) PASS/FAIL. After the engine run test has been completed. The engine assembly shall meet or exceed the minimum specifications to be considered as having passed.

(3) Procedures for repair and parts replacement can be found in TM-10050A, SL-4-10050A and Ditch Witch Parts Book 2300. Lubricate in accordance with LI-10050A.

d. Power Steering System.

(1) TEST/INSPECTION PROCEDURES. Test the following in accordance with TM-10050A-14 to conform with testing procedures to assure full conformance with this SOW.

(a) Steering Column Assembly

(b) Orbital Valve Assembly

(c) Control Assembly

(d) Cylinder Assembly

(e) Cylinder Barrel

(f) Cylinder Rod Assembly

(2) PASS/FAIL. After the Steering System test has been completed. The system shall meet or exceed the minimum specifications to be considered as having passed.

(3) Procedures for repair and parts replacement can be found in TM-10050A, SL-4-10050A and Ditch Witch Parts Book 2300.

e. Hydraulic System.

(1) TEST/INSPECTION PROCEDURES. Test the following in accordance with TM-10050A-14 to conform with testing procedures to assure full conformance with this SOW.

(a) Hydraulic Filter and Element (Replace 100%)

(b) Cartridge and Valve Assembly

(c) Hoses and Fittings Assembly

(d) Pump Assembly

(e) Control Valve Assembly

(f) Lever Link Assembly

(g) Inner and Outer Handle Assembly

(h) Lever Support and Bracket Assembly

(i) Hydraulic Reservoir Assembly

(j) Parts Kit Assembly

(k) Air Filter Base Assembly

(l) Sight Glass Assembly

(m) Flow Control Valve Assembly

(n) Speed Control Valve Assembly

(o) Hydraulic Motor Drive Assembly

(2) PASS/FAIL. After the Hydraulic System run test has been completed. The system shall meet or exceed the minimum specifications to be considered as having passed.

(3) Procedures for repair and parts replacement can be found in TM-10050A, SL-4-10050A and Ditch Witch Parts Book 2300.

f. Transmission Assembly.

(1) TEST/INSPECTION PROCEDURES. After all Pre-Induction tests and inspections have been completed, the Transmission shall be removed from the equipment, steam cleaned and inspected for loose or missing items. Follow all warnings and procedures to assure you are working with safe and efficient methods and conditions. Inspect the following:

(a) Input and Output Shaft Bearing and Retainer Assemblies

(b) Cluster Gear and Gear Roller Assembly

(c) Cluster Gear Spacer

(d) Synchronizer Assembly

(e) Oil Baffle

(f) Transmission Cap Assembly

(g) Counter Shaft, Roller and Spacer

(h) Roller and Blocking Ring

(i) Intermediate Gear

(j) Reverse Idler Gear and Shaft Assembly

(2) PASS/FAIL. After the Transmission run test has been completed. The Transmission assembly shall meet or exceed the minimum specifications to be considered as having passed.

(3) Procedures for repair and parts replacement can be found in TM-10050A, SL-4-10050A and Ditch Witch Parts Book 2300.

g. Air Filter System.

(1) TEST/INSPECTION PROCEDURES. Test the following in accordance with TM-10050A-14 to conform with testing procedures to assure full conformance with this SOW.

(a) Air Cleaner Assembly

(b) Element Assembly

(c) Body Assembly

(d) Clamp Assembly

(e) Hose and Clamp Assembly

(f) Cup and Deflector Assembly

(g) Fuel Minder Assembly

(2) PASS/FAIL. Repair/Replace any or all of the above components that fail Pre-Induction inspections/test. Replace air filter(s) 100%.

(3) Procedures for repair and replacement parts can be found in TM-10050A, SL-4-10050A and Ditch Witch Parts Book 2300.

h. Electrical System.

(1) TEST/INSPECTION PROCEDURES. Test the following in accordance with TM-10050A-14 and MI-10050A-25/1 to conform with testing procedures to assure full conformance with this SOW.

(2) The Ditching Machine electrical system is interconnected through the console, frame and engine harnesses. A 12 volt battery provides power for the electrical system.

Note: Jump starting this system with other than a 12-volt negative ground will cause damage to the electrical system. Inspect the following and all components:

(a) Battery and Lead Assembly

(b) Receptacle Assembly

(c) Gages, Lights and Switches

(d) Wiring Harness Assembly

(e) Alternator Assembly

(f) Regulator Assembly

(g) Charging Circuit Assembly

(h) Starting Circuit Assembly

(i) Starter Motor Assembly

(j) Relay Solenoid Assembly

(k) Solenoid Valve Assembly

(l) Sending Unit Assembly

(m) Instrument Panel and Controls

(n) Backup Alarm Assembly

(o) Horn and Light Assembly

(3) PASS/FAIL. After an electrical circuit test has been completed. The electrical system shall meet or exceed the minimum specifications to be considered as having passed.

(4) Procedures for repair and parts replacement can be found in TM-10050A-14, MI-10050A-25/1 and Ditch Witch Parts Book 2300 and SL-4-10050A.

i. Operator Console.

(1) TEST/INSPECTION PROCEDURES. Test the following in accordance with TM-10050A-14 to conform with testing procedures to assure full conformance with this SOW.

(a) Steering Wheel Assembly

(b) Directional Control Lever Assembly

(c) Transmission Shift Lever Assembly

(d) Quick Start Assembly

(e) Pull Stop Assembly

(f) Throttle Control Lever Assembly

(g) Foot Brake Assembly

(h) Hand Brake Assembly

(i) Seat Assembly

(2) PASS/FAIL. After the operator console test has been completed, the console shall meet or exceed the minimum specifications to be considered as having passed.

(3) Procedures for repair and replacement of parts can be found in TM-10050A-14, SL-4-10050A and Ditch Witch Parts Book 2300.

j. Belt Clutch Assembly.

(1) TEST/INSPECTION PROCEDURES. Test the following in accordance with TM-10050A-14 to conform with testing procedures to assure full conformance with this SOW.

(a) Clutch Lever Assembly

(b) Brake Switch Assembly

(c) Clutch Pin Assembly

(d) Actuator Assembly

(e) Rod End Assembly

(f) Clutch Link Rod Assembly

(g) Clutch Arm Assembly

(h) Ball Bearing and Spacer Assembly

(i) Belt Idler Roller and Spacer Assembly

(j) Roller Support Assembly

(k) Clutch Rod and Spring Assembly

(2) PASS/FAIL. After the Belt Clutch Assembly test has been completed, the system shall meet or exceed the minimum specifications to be considered as having passed.

(3) Procedures for repair and replacement of parts can be found in TM-10050A-14, SL-4-10050A and Ditch Witch Parts Book 2300.

k. Right Angle Drive And Drive Assembly.

(1) TEST/INSPECTION PROCEDURES. Test the following in accordance with TM-10050A-14 to conform with testing procedures to assure full conformance with this SOW.

(a) Sheave and Bushing Assembly

(b) Shaft, Yoke and Pinion Assembly

(c) Right Angle Housing Assembly

(d) Headshaft and Pivot Adapter Assembly

(e) Ring Gear and Cover Assembly

(f) Hub Assembly

(g) Bearing and Support Bracket Assembly

(h) Pinion Gear and Cover Assembly

(i) Pinion Assembly

(j) Drive Assembly Housing

(2) PASS/FAIL. After the Right Angle Drive and Drive Assembly test has been completed. The system shall meet or exceed the minimum specifications to be considered as having passed.

(3) Procedures for repair and replacement of parts can be found in TM-10050A-14, SL-4-10050A and Ditch Witch Parts Book 2300.

l. Trencher Pivot Assembly.

(1) TEST/INSPECTION PROCEDURES. Test the following in accordance with TM-10050A-14 to conform with testing procedures to assure full conformance with this SOW.

(a) Auger and Support Assembly

(b) Head Shaft Assembly

(c) Sprocket Wheel and Hub Assembly

(d) Pivot and Pin Assembly

(e) Offset Pivot Link Assembly

(f) Pivot Link Assembly

(g) Bearing and Housing Assembly

(h) Hydraulic Lines Assembly

(i) Pivot Cylinder Assembly

(j) Cylinder Rod Assembly

(k) Cylinder Barrel Assembly

(l) Trencher Boom Assembly

(m) Trencher Cleaner and Support Assembly

(n) Digging Chain Assembly

(2) PASS/FAIL. After the Trencher Pivot Assembly test has been completed, the system shall meet or exceed the minimum specifications to be considered as having passed.

(3) Procedures for repair and replacement can be found in TM-10050A-14, SL-4-10050A and Ditch Witch Parts Book 2300.

m. Backfill Blade Assembly.

(1) TEST/INSPECTION PROCEDURES. Test the following in accordance with TM-10050A-14 and MI-10050A-25/2 to conform with testing procedures to assure full conformance with this SOW.

(a) Backfill Arm Assembly

(b) Backfill Pivot Assembly

(c) Lift Pivot Pin Assembly

(d) Bushing Assembly

(e) Hydraulic Lines Assembly

(f) Backfill Blade Angle Cylinder Assembly

(g) Backfill Blade Lift Cylinder Assembly

(h) Cylinder Rod Assemblies

(i) Cylinder Barrel Assemblies

(2) PASS/FAIL. After the Backfill Blade Assembly test has been completed, the system shall meet or exceed the minimum specifications to be considered as having passed.

(3) Procedures for repair and replacement can be found in TM-10050A-14, SL-4-10050A, MI-10050A-25/2 and Ditch Witch Parts Book 2300.

n. Brake System.

(1) TEST/INSPECTION PROCEDURES. Test the following in accordance with TM-10050A-14 to conform with testing procedures to assure full conformance with this SOW.

(a) Brake Pedal Assembly

(b) Brake Shaft Assembly

(c) Clutch Pedal Assembly

(d) Spring and Carrier Assembly

(e) Brake Shoe Assemblies

(f) Caliper Bracket Assembly

(g) Brake Disc Assembly

(h) Driveshaft and Yoke Assembly

(i) Compression Spring Assembly

(j) Brake Cam Lever Assemblies

(k) Mounting Brackets

(2) PASS/FAIL. After the Brake System test has been completed, the system shall meet or exceed the minimum specifications to be considered as having passed.

(3) Procedures for repair and replacement can be found in TM-10050A-14, SL-4-10050A and Ditch Witch Parts Book 2300.

o. Engine Muffler Assembly.

(1) TEST/INSPECTION PROCEDURES. Test the following in accordance with TM-10050A-14 to conform with testing procedures to assure full conformance with this SOW.

(a) Muffler Assembly

(b) Elbow Assembly

(c) Muffler Brace Strap Assembly

(2) PASS/FAIL. After the Engine Exhaust System test has been completed. The system shall meet or exceed the minimum specifications to be considered as having passed.

(3) Procedures for repair and replacement can be found in TM-10050A-14, SL-4-10050A and Ditch Witch Parts Book 2300.

p. Engine Cooling System.

(1) TEST/INSPECTION PROCEDURES. Test the following in accordance with TM-10050A-14 to conform with testing procedures to assure full conformance with this SOW.

(a) Air Cowling Assembly

(b) Cover and Stay Plate Assembly

(c) Cooling Fan Assembly

(d) Blower Pulley Assembly

(e) Fan and Housing Assembly

(2) PASS/FAIL. After the Cooling System test has been completed the system shall meet or exceed the minimum specifications to be considered as having passed.

(3) Procedures for repair and replacement of parts can be found in TM-10050A-14, SL-4-10050A and Ditch Witch Parts Book 2300.

q. Front And Rear Axle Assembly.

(1) TEST/INSPECTION PROCEDURES. Test the following in accordance with TM-10050A-14 to conform with testing procedures to assure full conformance with this SOW.

(a) Front Axle Cradle Assembly

(b) Shifter Fork and Journal Assembly

(c) Propeller Shaft Assembly

(d) Spider Assembly

(e) Steering Cylinder Assembly

(f) Tie Rod and Clevis Assembly

(g) Steering Housing Assemblies

(h) Axle and Yoke Assembly

(i) Spindle Shaft and Flange Assembly

(j) Cross and Bearing Assembly

(k) Hub Cap Assembly

(l) Short and Long Rear Axle Assembly

(m) Rear Sprocket Assembly

(n) Rear Flange Yoke Assembly

(o) Rear Spider Assembly

(p) Rear Axle and Flange Yoke Assemblies

(2) PASS/FAIL. After the Front and Rear Axle Assembly test has been completed, the system shall meet or exceed the minimum specifications to be considered as having passed.

(3) The above procedures for repair and replacement of parts can be found in TM-10050A-14, SL-4-10050A and Ditch Witch Parts Book 2300.

r. Front And Rear Differential Assembly.

(1) TEST/INSPECTION PROCEDURES. Test the following in accordance with TM-10050A-14 to conform with testing procedures to assure full conformance with this SOW.

(a) Differential Mount Assembly

(b) Drive Shaft and Yoke Assembly

(c) Differential Carrier Assembly

(d) Ring Gear and Pinion Assembly

(e) Axle Gear Assembly

(f) Pinion Shaft Assembly

(g) Pinion Race and Bearing Assembly

(h) Pinion Gear Assembly

(i) Case and Cover Assembly

(2) PASS/FAIL. After the Front and Rear Differential Assembly Test has been completed, the system shall meet or exceed the minimum specifications to be considered as having passed.

(3) The above procedures for repair and replacement of parts can be found in TM-10050A-14, SL-4-10050A and Ditch Witch Parts Book 2300.

s. Clutch Assembly.

(1) TEST/INSPECTION PROCEDURES. Test the following in accordance with TM-10050A-14 to conform with testing procedures to assure full conformance with this SOW.

(a) Release Shaft Assembly

(b) Clutch Pedal Assembly

(c) Clutch Rod and Clevis Assembly

(d) Parking Brake Lever Assembly

(e) Brake Shaft Assembly

(f) Clutch Housing Assembly

(g) Throwout Bearing and Carrier Assembly

(h) Clutch Release Bearing

(i) Clutch Yoke Assembly

(j) Pressure Plate Assembly

(k) Clutch Plate Assembly

(l) Clutch Adapter Assembly

(2) PASS/FAIL. After the Clutch Assembly test has been completed, the system shall meet or exceed the minimum specifications to be considered as having passed.

(3) Procedures for repair and replacement of parts can be found in TM-10050A-14, SL-4-10050A and Ditch Witch Parts Book 2300.

t. Tire And Rim Assembly.

(1) TEST/INSPECTION PROCEDURES. The Tire Inspection Checklist contained in TM9-2610-200-14 shall be used to document the tire inspection and shall be provided as part of the Pre-Inspection Report. Inspect tires for correct inflation, inspect for cupping, chuncking, cuts and cracks. TM9-2610-200-14, Section 2-37, Visual Guide for Technical Inspection and Classification of Tires: This Technical Inspection shall be the guide used to distinguish between repairable and nonrepairable defects and the serviceability of tires.

a. Inspect wheels for cracks, breaks, and damaged mounting holes.

b. Wheels shall be free of cracks breaks and damaged mounting holes. All wheels that do not meet these requirements shall be replaced.

(2) PASS/FAIL. All tires shall meet classification Code "B" as identified in TM9-2610-200-14. Recapped tires are not premitted. Each tire must have at least 25% or more of tread remaining and be in good serviceable condition. All tires on a vehicle shall be matched to provide proper performance and approximately equal life. Mixture of bais and radial tires is not premitted. Tires shall not show evidence of cupping or chunking. Tires shall not have cuts or cracks greater than one inch in length, 1/8 inch wide. Tires shall not have cuts or breaks, regardless of length or width, which extend to the fabric, rubber separation or bulges on tire side walls are not acceptable. Any damage to the tire bead is not acceptable. All tires that do not meet these requirements shall be replaced.

u. Throttle Assembly.

(1) TEST/INSPECTION PROCEDURES. Test the following in accordance with

TM-10050A-14 to conform with testing procedures to assure full conformance with this SOW.

(a) Bell Crank Assembly

(b) Throttle Rod Assembly

(c) Foot Throttle Link Assembly

(d) Throttle Link Rod Assembly

(e) Throttle Lever Assembly

(f) Foot Throttle Lever Assembly

(g) Lever Mount Assembly

(h) Right Front Fender Assembly

(2) PASS/FAIL. After the Throttle Assembly test has been completed, the system shall meet or exceed the minimum specifications to be considered as having passed.

(3) Procedures for repair parts and replacement can be found in TM-10050A-14, SL-4-10050A and Ditch Witch Parts Book 2300.

v. Jackshaft and Mobile-Dig Shifter Assembly.

(1) TEST/INSPECTION PROCEDURES. Test the following in accordance with TM-10050A-14 to conform with testing procedures to assure full conformance with this SOW.

(a) Jack Shaft and Yoke Assembly

(b) Power Takeoff Assembly

(c) Bearing Unit Assembly

(d) Journal Assembly

(e) Clutch Fork

(f) Pillow Block Bearing Assembly

(g) Lock Collar Assembly

(h) Mobile-Dig Shifter Assembly

(2) PASS/FAIL. After the Jack Shaft and Mobile-Dig Shifter Assembly Test has been completed, the system shall meet or exceed the minimum specifications to be considered as having passed.

(3) Procedures for repair parts and replacement can be found in TM-10050A-14, SL-4-10050A and Ditch Witch Parts Book 2300.

w. Chain Idler And Intermediate Shaft.

(1) TEST/INSPECTION PROCEDURES. Test the following in accordance with TM-10050A-14 to conform with testing procedures to assure full conformance with this SOW.

(a) Chain and Adjuster Assembly

(b) Idler Sprocket and Support Bar Assembly

(c) Bearing and Race Assembly

(d) Pillow Block Bearing and Shaft Assembly

(e) Intermediate Shaft Assembly

(f) Sprocket Assembly

(g) Intermediate Shaft Mount Assembly

(2) PASS/FAIL. After both the Chain Idler and Intermediate Shaft have been tested, the assemblies shall meet or exceed the minimum specifications to be considered as having passed.

(3) Procedures for repair and replacement of parts can be found in TM-10050A-14, SL-4-10050A and Ditch Witch Parts Book 2300.

x. Frame Assembly.

(1) TEST/INSPECTION PROCEDURES. Test the following in accordance with TM-10050A-14 and MI-10050A-35/3 to conform with testing procedures to assure full conformance with this SOW.

(a) Steering Wheel Assembly

(b) Hood Assembly

(c) Grill Assembly

(d) Instrument Panel Assembly

(e) Seat Assembly

(f) Top Channel ROP Assembly

(g) Left and Right Rear Posts Assembly

(h) Lifting Eye Assembly

(2) PASS/FAIL. After the frame assembly have been tested, the assemblies shall meet or exceed the minimum specifications to be considered as having passed.

(3) Procedures for repair and replacement of parts can be found in TM-10050A-14, SL-4-10050A, MI-10050A-35/3 and Ditch Witch Parts Book 2300.

y. Data Plates And Decals.

(1) DATA PLATE. Each repaired Ditching Machine shall have an IROAN data plate affixed next to the existing data plate. The data plate shall meet the requirements of MIL-STD-130.

(2) Test procedures. Inspect the Ditching Machine for missing, damaged and illegible data plates and decals.

(3) PASS/FAIL. Replace all data plates and decals that are missing and illegible. IROAN data plates shall be prepared by the DMA or contractor and contain the following information:

VEHICLE SERIAL NO_____
REPAIRED IN ACCORDANCE WITH SOW-05-CSLE-10050A-2/1.
CONTRACTOR_____
DATE_____
ODOMETER OR HOUR READING AT TIME OF IROAN_____

NOTE: Odometers and hour meters on vehicles IROAN under provisions of this SOW shall not be turned back to zero.

RECORD JACKET: Be sure to record all major equipment or component serial numbers that are replaced in the record jacket of the Ditching Machine (This include engines, etc).

3.2.3 Phase III - Inspection, Testing and Acceptance.

a. Inspection, Testing and Acceptance of the Ditching Machine shall be conducted in accordance with TM-10050A-14 Standards.

b. The contractor shall be responsible for conducting required tests and shall ensure MCSC (Code CSLE), Albany, GA., representatives are available to complete the final acceptance. Acceptance test shall be held at the contractor's facility. MCSC (Code CSLE), Albany, GA., representatives shall be given a minimum of two weeks notice prior to beginning acceptance testing. The test area shall be cleared of all Ditching Machine parts and components, etc., not required for the test.

c. The contractor shall be responsible for correcting any deficiencies identified during inspection/testing. MCSC (Code CSLE), Albany, GA., representatives may require the contractor to report tests or portions thereof, if the original tests fail to demonstrate compliance with this SOW.

d. Acceptance testing on the Ditching Machine repaired under the provisions of this SOW shall be accomplished in accordance with TM-10050A-14.

e. Vehicle Markings. Registration numbers and other markings shall be applied in accordance with MIL-STD-642. Lifting and tie down attachments shall be identified with one inch letters indicating "SLING POINT" or "TIE DOWN."

3.2.4 Phase IV - Packaging Handling Storage and Transportation (PHS&T).

a. The Contractor shall be responsible for the preservation and packaging of the equipment being repaired under the terms of this Statement of Work. Items scheduled for long-term storage shall be in accordance with the level "A" requirements of ATPD-2241. Items scheduled for domestic shipment for immediate use with the exception of Maritime Pre-positioned Forces (MPF) shall be preserved to level "B", Drive-on/Drive-off. Items preserved to level "B", Drive-on/Drive-off being prepared for overseas shipment shall have a label affixed which reads: "NOT FOR WEATHER DECK STOWAGE." Items scheduled for MPF shall be preserved to level "B", MPF Modified Drive-away."

(1) The terms "Drive-on/Drive-off" and "MPF Modified Drive-away": are defined as follows:

(a) Drive-on/Drive-off: Batteries shall be hot and disconnected from the vehicle electrical system. Terminals and leads shall be taped. Fuel tank shall be filled ¼ full of JP5/8. The air intake system, exhaust and brake systems, drive train and gauges are to be de-preserved.

(b) MPF Modified Drive-away: Batteries shall be hot and connected to the vehicle electrical system. Fuel tank shall be filled 3/4 full of JP5/8. The air intake system, exhaust and brake systems, drive train and gauges are to be de-preserved. Fire extinguisher bracket and seats (all) shall be installed.

b. Marking for shipment and storage shall be in accordance with MIL-STD-129.

c. The Marine Corps will provide the Contractor with the shipping address(es) for delivery of the repaired equipment. The Contractor shall be responsible for shipping the equipment to the pre-designated site(s). The Marine Corps will be responsible for transportation costs associated with shipping the subject equipment to and from the Contractor.

3.3 Configuration Management.

3.3.1 Configuration Status Accounting (CSA).

a. The contractor shall record and submit data on retrofit accomplished during Phase II.

b. The contractor shall determine the application status of approved configuration changes by visual inspections to the extent possible. MCSC (Code CSLE), Albany, Ga., will identify the configuration changes to be inspected by furnishing a Configuration Inspection Check Sheet to the contractor. The contractor shall use one check sheet for the Ditching Machine to record the inspection findings along with other required data.

c. The contractor shall record serial numbers of the assemblies listed on the Configuration Inspection Check Sheet. The contractor shall record the information on the same form that was used to record the application status of configuration changes.

3.3.2 Configuration Control.

The Contractor shall apply configuration control procedures to established configuration items. The contractor shall not implement configuration changes to an item's documented performance or design characteristics without prior written authorization. If it is necessary to temporarity depart from the authorized configuration, the contractor shall prepare and submit a Request For Deviation (RFD). MIL-HDBK-61 and ANSI/EIA-649 provide guidance for preparing this configuration control document.

3.4 Government Furnished Equipment Accountability (GFE).

a. The Management Control Activity (MCA), Marine Corps Logistics Bases, Albany, Georgia, (MCA/Code 573-2), will coordinate required GFE. A central control system will be maintained by the Marine Corps in the repair facility's possession. The MCA will forward a GFE accountability agreement to the contractor for signature to establish a chain of custody and property responsibilities for Marine Corps assets. The contractor is to acknowledge receipt of GFM to the MCA within 15 days of receipt. (This can be done by mailing (Materiel Management Department, Management Control Activity (Code 573-2), 814 Radford Blvd, STE 20320, Albany, GA 31704-0320) or faxing (commercial 229-639-5498 or DSN 567-5498) a copy of the DD1348).

b. The GFE list must be provided by the Equipment Specialist.

3.5 Contractor Furnished Materiel (CFM). The contractor may requisition materiel as required in the performance of the SOW through the DoD Sypply System. DoD 4000.25-1-M (MILSTRIP) Chapter 11 provides guidance to contractors on the requisitioning process. The contractor's decision to utilize CFM procured from the DoD Supply System shall be based upon cost effectiveness, availability of materiel and the required completion/delivery date.

3.6 Quality Assurance Provisions.

a. The performances of the contractor and the quality of work delivered, material provided and documents written shall be subject to in process review and inspection by the MCSC (Code CSLE), Albany, GA., representatives during contract performance. Inspection may be accomplished at any work location. Authorized MCSC (Code CSLE), Albany, GA., representatives shall be permitted to observe the work/task accomplishment or to conduct inspections at a reasonable hour. Acceptance tests shall be held in plant. Inspection by the MCSC (Code CSLE), Albany, GA., representatives of all acceptance test plans, materials and associated lists furnished hereunder does not relieve the contractor from any responsibility regarding defects or other failures to meet contract requirements which may be disclosed prior to final acceptance.

b. The Contractor shall provide and maintain a quality System that as a minimum, adheres to the requirements of ANSI/ISO/ASQC Q9002-1994, Quality Systems-Model for Quality Assurance in Production, Installation and Servicing.

c. The contractor shall have in place documented procedures and standards for quality assurance and the repair facilities work shall be subject to In Process Reviews and Inspections for compliance with these procedures and standards by MCSC (Code CSLE), Albany, GA., representatives. Noncompliance with procedures resulting in degraded quality of work may result in a stop work order requiring action for the contractor to correct the work performed and to enforce compliance with quality assurance procedures or face contract termination. Notwithstanding such MCSC (Code CSLE), Albany, GA., representatives inspection, it shall be the repair facilities responsibility to ensure that the entire system meets the performance requirements. Inspection and Test Plan shall be utilized as guidelines whenever applicable and in accordance with the SOW.

d. Quality assurance operations performed by the contractor shall be subject to MCSC (Code CSLE), Albany, GA., representatives verification at any time. MCSC (Code CSLE), Albany, GA., representatives verification can include, but shall not be limited in any matter to the following:

(1) Inspection of materials, products, assemblies and documentation to assess compliance with quality standards.

(2) Surveillance of operations to determine that quality assurance, practices, methods and procedures are being properly applied.

(3) Inspection of deliverable products to assure compliance with all requirements of the Ditching Machine, this SOW and applicable documents used herein.

3.7 Acceptance. The performance of the contractor and the quality of work delivered, including all equipment furnished and documentation written or compiled, shall be subject to In Process Review and Inspection during performance. Inspection may be accomplished in plant or at any work site or location, and MCSC (Code CSLE), Albany GA. representatives shall be permitted to observe the work or to conduct inspection at all reasonable hours. Final Inspection and Acceptance Testing shall be conducted at the contractor facility. Final acceptance shall be conducted on 100 percent of items to verify that the units meet all requirements. The Ditching Machine IROANED under the provisions of this SOW shall be accomplished in accordance with TM-10050A-25/1.

3.8 Rejection.

(1) Failure to comply with any of the specified requirements listed herein shall be reason for rejection by MCSC (Code CSLE), Albany, GA., representative. The contractor shall at no additional cost to, MCLB, Albany, GA., provide the following:

a. Develop an approach for modification or correction of all deficiencies.

b. On approval of a documented approach, the contractor shall correct the deficiencies and repeat verification until acceptable compliance with acceptance test procedures is demonstrated.

4.0 REPORTS.

4.1 Inspection Check Sheets. The contractor shall complete the Pre-Induction Inspection Check Sheet (Appendix A) and the Final Inspection Checklist (Appendix B) for each item repaired. These documents shall be available during final acceptance testing. One copy of each document shall be provided to Marine Corps Systems Command (Code CSLE), 814 Radford Blvd., STE 20320, Albany, GA. 31704-0320 after final acceptance, or upon request, for each Ditching Machine.

PRE-INDUCTION CHECKLIST
DITCHING MACHINE

Vehicle Serial Number: _____
Vehicle Hours: _____
Use this sheet to record Operational Checkout results. Perform the operational checks before installing any test equipment.

DITCHING MACHINE MODEL 2300 NSN 3805-01-240-0995	SAT	SERVICE	TESTED	LUBTICATED	UNSAT	REMARKS
1. Engine Assembly						
Condition						
Operation						
Leakage						
Mounting						
Screws						
Washers						
Nuts						
Paint						
Spec. Conformance						
Coverage						
Lubrication						
Application and Type						
Oil Analysis Results						
PASS_____ FAIL_____						
2. Fuel System						
Condition						
Leakage						
Fittings						
Mounting						
Clamps						
Components						
Injector and Injector Lines/Hoses						
Shutoff Solenoid Assembly						
Fuel Pump						
Fuel Tank						
Fuel Supply Lines and Hoses						
Filters Replaced 100% YES__NO_						

3. Engine Cooling System Condition of Components V Belts Rotor Assembly Air Cowling Mounting Bolts and Screws Washers Nuts						
4. Vehicle Steering System Condition of Components Steering Column Orbital Valve Assembly Control Assembly Cylinder Assembly Hydraulic Hoses						
5. Hydraulic System Condition Operation Components Hoses and Lines Valve Assembly Pump Assy Control Valve Assy. Control lever/linkage Assy Reservoir Sight glass Flow Control Valve Speed Control Valve Assy Hydraulic Motor Drive Assy						
6. Transmission Assembly Condition Operation Mounting Leakage						
7. Air Filter System Condition Mounting Components Air cleaner Assembly Hose and Clamps						

8. Electrical System Condition Mounting Components Battery Leads and connectors Receptacle Assembly Guages Lights and switches Wiring Harnesses Alternator/Regulator Starter Relays Sending Units Instrument Panel and Controls Backup Alarm Horn						
9. Operator Station Condition Operation Mounting Components Steering Wheel Assy. Directional Control Assy. Transmission Shift Lever Assy Quick Start Assy Pull Stop Assy Throttle Control Assy Foot Brake Assy Hand Brake Assy Seat						
10. Belt Clutch Assembly Operation Condition Mounting Components Clutch Lever Assy Brake Switch Assy Clutch Pin Assy Actuator Assy Rods and Rod Ends Clutch Arm Bearing and Spacer Assy Belt Idler Assy Roller Support Assy						

11. Right Angle Drive/Drive Assy Condition Operation Mounting Components Sheaves and Bushing Assy Shaft, Yoke and Pinion Assy Right angle Housing Assy Headshaft and Pivot Adapter Ring Gear and Cover Assy Hub Assy Bearing and Support Assy Pinion Gear and Cover Assy Pinion Assy Drive Assy						
12. Trencher Pivot Assembly Condition Operation Mounting Components Auger and Support Head Shaft Assy Sprocket Wheel and Hub Assy Pivot and Pin Assy Offset Pivot Link Assy Pivot Link Assy Bearing and Housing Assy Hydraulic Lines/Hoses Pivot Cylinder Assy Trencher Boom Assy Trencher Cleaner Digging Chain Assembly						
13. Backfill Blade Assy Condition Operation Mounting Components Backfill Arm Assy Backfill Pivot Assy Lift Pivot Pin Assy Hydraulic Lines/Hoses Backfill Bladr Angle Cylinder						

14. Brake System Condition Operation Mounting Components Brake Assy Pedal Brake shaft Assy Clutch Pedal Assy Spring and Carriage Assy Brake Shoe Assy Brake Caliper Assy Brake Disc Assy Driveshafty and Yoke Assy Brake Cam Lever Assy						
15. Muffler Assembly Condition Operation Mounting Components Muffler Elbow Assy Brace Strap Assy						
16. Front and Rear Axle Assy Condition Operation Mounting Components Front Axle Cradle Assy Shifter Fork and Jounal Assy Propeller Shafts Steering Cylinders Tie Rods Rear Axle and Flange Yoke						
17. Clutch Assy Condition Operation Mounting Components Release Shaft Assy Clutch Rod and Clevis Clutch Housing Throwout Bearing and Carriage Assy Pressure Plate/Clutch Disc						

18. Tires and Rims Condition Mounting						
19.Jackshaft and Big Shifter Assy Condition Operation Mounting						
20. Chain Idler and Shaft Assy Condition Operation Mounting						
21. Frame Assy Condition Operation						
22. Decals and Plates Condition Mounting						

FINAL OPERATIONAL TEST SHEET
DITCHING MACHINE

Vehicle Serial Number: _____
Vehicle Hours: _____
Use this sheet to record Operational Checkout results. Perform the operational checks before installing any test equipment.

DITCHING MACHINE MODEL 2300 NSN 3805-01-240-0995	SAT	SERVICED	TESTED	LUBTICATED	UNSAT	REMARKS
1. Engine Assembly Condition Operation Lubrication Application and Type Filters Replaced 100% YES__NO_						
2. Fuel System Condition Leakage Fittings Mounting Clamps Filters Replaced 100% YES__NO_						
3. Engine Cooling System Condition Operation Mounting						
4. Vehicle Steering System Condition Operation						
5. Hydraulic System Condition Operation Components Hoses and Lines Valve Assembly Pump Assy						

Control Valve Assy. Control lever/linkage Assy Reservoir Sight glass Flow Control Valve Speed Control Valve Assy Hydraulic Motor Drive Assy						
6. Transmission Assembly Condition Operation Mounting						
7. Air Filter System Condition Mounting Components Air cleaner Assembly Hose and Clamps Filter Replaced 100% YES__NO_						
8. Electrical System Condition Mounting Components Battery Leads and connectors Receptacle Assembly Guages Lights and switches Wiring Harnesses Alternator/Regulator Starter Relays Sending Units Instrument Panel and Controls Backup Alarm Horn						
9. Operator Station Condition Operation Mounting Components Steering Wheel Assy. Directional Control Assy. Transmission Shift Lever Assy Quick Start Assy Pull Stop Assy						

Throttle Control Assy Foot Brake Assy Hand Brake Assy Seat						
10. Belt Clutch Assembly Operation Condition Mounting Components Clutch Lever Assy Brake Switch Assy Clutch Pin Assy Actuator Assy Rods and Rod Ends Clutch Arm Bearing and Spacer Assy Belt Idler Assy Roller Support Assy						
11. Right Angle Drive/Drive Assy Condition Operation Mounting Components Sheaves and Bushing Assy Shaft, Yoke and Pinion Assy Right angle Housing Assy Headshaft and Pivot Adapter Ring Gear and Cover Assy Hub Assy Bearing and Support Assy Pinion Gear and Cover Assy Pinion Assy Drive Assy						
12. Trencher Pivot Assembly Condition Operation Mounting Components Auger and Support Head Shaft Assy Sprocket Wheel and Hub Assy Pivot and Pin Assy Offset Pivot Link Assy Pivot Link Assy						

Bearing and Housing Assy Hydraulic Lines/Hoses Pivot Cylinder Assy Trencher Boom Assy Trencher Cleaner Digging Chain Assembly						
13. Backfill Blade Assy Condition Operation Mounting Components Backfill Arm Assy Backfill Pivot Assy Lift Pivot Pin Assy Hydraulic Lines/Hoses Backfill Blade Angle Cylinder						
14. Brake System Condition Operation Mounting Components Brake Assy Pedal Brake shaft Assy Clutch Pedal Assy Spring and Carriage Assy Brake Shoe Assy Brake Caliper Assy Brake Disc Assy Driveshafty and Yoke Assy Brake Cam Lever Assy						
15. Muffler Assembly Condition Operation Mounting Components Muffler Elbow Assy Brace Strap Assy						
16. Front and Rear Axle Assy Condition Operation Mounting Components Front Axle Cradle Assy						

Shifter Fork and Jounal Assy Propeller Shafts Steering Cylinders Tie Rods Rear Axle and Flange Yoke						
17. Clutch Assy Condition Operation Mounting Components Release Shaft Assy Clutch Rod and Clevis Clutch Housing Throwout Bearing and Carriage Assy Pressure Plate/Clutch Disc						
18. Tires and Rims Condition Mounting						
19.Jackshaft and Big Shifter Assy Condition Operation Mounting						
20. Chain Idler and Shaft Assy Condition Operation Mounting						
21. Frame Assy Condition Operation						
22. Decals and Plates Condition Mounting						