

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

ORGANIZATIONAL MAINTENANCE MANUAL

CRUSHER, JAW

DIESEL AND ELECTRIC DRIVEN; WHEEL
MOUNTED, PNEUMATIC TIRES; 75 TON
PER HOUR

(EAGLE CRUSHER MODEL 5157) FSN 3820-783-7311
COMPONENT OF CRUSHING AND SCREENING PLANT;
DIESEL AND ELECTRIC DRIVEN; WHEEL
MOUNTED; 75 TON PER HOUR

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CRUSHER, JAW: DIESEL AND ELECTRIC DRIVEN; WHEEL MOUNTED, PNEUMATIC TIRES; 75 TON PER HOUR (EAGLE CRUSHER MODEL 5157) FSN 3820-783-7311 COMPONENT OF CRUSHING AND SCREENING PLANT; DIESEL AND ELECTRIC DRIVEN; WHEEL MOUNTED; 75 TON PER HOUR

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*This manual supersedes TM 5-3820-205-20/2, 9 August 1961, including C I, 4 October 1962, and C 2, 23 May 1963.

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CHAPTER 1

INTRODUCTION

Section I. GENERAL

1. Scope

a. These instructions are published for use of the personnel to whom the Jaw Crusher, Eagle Crusher Model 5157, is issued. They provide information on the operation and organizational maintenance of the equipment. Also included are descriptions of main units and their functions in relationship to other components.

b. Appendix I contains a list of publications applicable to this manual. Appendix II contains the maintenance allocation chart. The organizational maintenance repair parts and special tool lists are in TM 5-3820-205-20P/2.

c. Numbers in parentheses on illustrations indicate quantity. Numbers preceding nomenclature callouts on illustrations indicate the preferred maintenance sequence.

d. The direct reporting, by the individual user, of errors, omissions, and recommendations for improving this manual is authorized and encouraged. DA Form 2028 (Recommended Charges to Technical Manual Parts Lists or Supply Manual 7, 8, or 9) will be used for reporting these improvements. This form will be completed in triplicate using pencil, pen, or typewriter. The original and one copy will be forwarded direct to the Commanding Officer, U. S. Army Mobility Support Center, ATTN: SMOMS-MM, P.O. Box 119, Columbus, Ohio 43216. One information copy will be provided to the individual's immediate supervisor (e.g., officer, noncommissioned officer, supervisor, etc.).

e. Report all equipment improvement recommendations as prescribed in TM 38-750.

2. Record and Report Forms

DA Form 2258 Depreservation Guide of Engineer Equipment.

For other record and report forms applicable to organizational maintenance, refer to TM 38-750.

Note. Applicable forms, excluding Standard Form 46 which is carried by the operator, shall be kept in a canvas bag mounted on the equipment.

Section II. DESCRIPTION AND DATA

3. Description

A general description and illustration of the jaw crusher is contained in TM 5-3820-205-10/2. Specific and detailed descriptions of the components of the jaw crusher are provided in the applicable maintenance paragraphs of this manual.

4. Identification and Tabulated Data

a. *Identification.* The identification and instruction plates mounted on the main components of the jaw crusher, are described in TM 543820-205-10/2. In addition, the following identification plates are found on the small, interchangeable accessories and other components of the jaw crusher.

(1) *Starter motor identification plate.* The starter motor identification plate provides make, model, serial number, and voltage of the starter motor. It is mounted on the starter housing.

(2) *Generator identification plate.* The generator identification plate provides

the make, model, serial number, amperage, voltage rating of the generator. It is mounted on the generator housing.

(3) *Generator regulator identification plate.* The generator regulator identification plate provides the make, model, serial number, amperage, voltage, and type of ground. It is located on the regulator housing.

(4) *Fuel injector pump identification plate.* The fuel injector identification plate provides the make, revolutions per minute, model, and serial number of the injector pump. It is located on the injector pump housing.

(5) *Overspeed governor identification plate.* The overspeed governor identification plate provides the make, model, serial number, and range speed of the governor. It is located on the overspeed governor housing.

(6) *Engine safety control switch identification plate.* The engine safety control switch identification plate provides the make, type, and serial number of the switch. It is located on the outside of the switch housing.

(7) *Air cleaner instruction and identification plate.* The air cleaner identification and instruction plate are mounted on the body of the air cleaner.

(8) *Fire extinguisher identification and instruction plate.* The fire extinguisher identification and instruction plate provides the make, model, Federal stock number, type, and instructions for operating the fire extinguisher. It is located on the outside of the fire extinguisher.

b. Tabulated Data.

(1) Engine.

Manufacturer.....Continental Motors Corp.
ModelSD 802
Type.....Diesel
Firing order1-5-3-6-2-4
Number of cylinders6
Cycle.....4
CoolingLiquid cooled
Rated horsepower144 at 14,000 rpm (revolu-
tions per minute).
Governed speed1,400 rpm

(2) Generator.

ManufacturerDelco Remy Division of
General Motors Corp.
Model1117478
Volts24
Amperes40
Brush spring tension28 oz (ounces)

(3) Generator regulator.

ManufacturerDelco Remy, Division of
General Motors Corp.
Model1118558
Volts24
Amperes40
Ground.....Negative

(4) Starter.

ManufacturerDelco Remy Division of
General Motors Corp.
Model.....1109957
Volts.....24
Brush spring tension.....36 oz

(5) Solenoid starter switch.

Manufacturer.....Delco Remy Division of
General Motors Corp.
Model1119953
Volts24

(6) Batteries.

ManufacturerElectric Auto-Lite Co.
Type.....Dry charge
Volts per battery12
Number of batteries.....4
Group6 TN
GroundNegative

(7) Engine air cleaner.

ManufacturerDonaldson Co., The
Part numberSBG10-0163
Type.....Dry

(8) Fuel injection pump.

ManufacturerHartford Machine Screw
Corp.
ModelDGFCL 639-16B
TypeRoosa-Master

(9) Oil filters.

ManufacturerFram Corp.
ModelF-31-PL
Number3
TypeReplaceable element

(10) Fuel filter, primary.

ManufacturerFram Corp.
ModelFBM 1824
TypeWashable element

(11) Fuel filter, secondary.

ManufacturerFram Corp.
ModelF1127-APB
TypeReplaceable element

(12) *Overspeed governor.*

Manufacturer.....Synchrostart Corp.
ModelGOM

(13) *Crankcase air cleaner.*

ManufacturerDonaldson Co., The
TypeOil bath

(14) *Primer pump*

Manufacturer.....Hartford Machine Screw
Corp.
Model.....12383
Type.....Plunger

(15) *Electric motors.*

ManufacturerGeneral Electric Co.
Model5KG4256B2
Horsepower10
Cycles.....60
Rpm.....1,745
Voltage208-220/440
Phase3
Amperes27.4/13.7
TypeKG
Time ratingContinuous

(16) *Tires.*

Type.....LPT Nylon
Number of ply20 ply rating
Pressure100 psi (pounds per
square inch)
Size11:00-15

(17) *Adjustment data.*

Belts:

Fan belt $\frac{3}{4}$ in. (inch) (es) deflection
between pulleys on
long side.

Pan feeder apron $\frac{1}{2}$ in. deflection assembly
motor belt.

Scalper vibrating..... $\frac{1}{2}$ in. deflection screen
assembly motor belt.

Discharge conveyor $\frac{1}{2}$ in. deflection assembly
motor belt.

Crusher assembly1 to $1\frac{1}{2}$ in. deflection drive
belts.

Moveable jaw $1\frac{1}{2}$ in. to 5 in. between low
point in valley on one
jaw and high point of
ridge on the other.

Valves:

Intake (hot).....0.020 in.
Exhaust (hot)0.024 in.

Generator Regulator:

Cut out relay air gap.....0.048 in.
Cut out relay point0.035 in. opening.
Cut out relay closing25-27 v (volts) voltage.
Current regulator0.115 in. air gap.
Current regulator38 to 42 amp (amperes)
current setting.
Voltage regulator0.084 in. air gap.
Voltage regulator27.5 to 29.5 v
closing voltage28.5 v
(when adjusting
set at middle of
range).

(18) *Nut and bolt torque data.*

Intake manifolds50-55 ft-lb (foot-pounds)
Exhaust manifolds50-55 ft-lb
Fuel injectors.....14-16 ft-lb
Fuel line connector420 in.-lb (inch-pounds)
screws.
Wheel bearing adjusting50 ft-lb nut.
Wheel bearing outer lock.....250-400 ft-lb nut.
Inner and outer wheel500-600 ft-lb nuts.

(19) *Electrical wiring diagram.* The wiring
diagram for the jaw crusher is illustrated on figure 1.

1 Serial No. range 2050 through 2087

Figure 1. Wiring diagram.

(Located in back of manual)

2 Serial No. range 2090 through 2129

Figure 1-Continued.

(Located in back of manual)

3 Dolly wiring diagram

Figure 1-Continued.

(Located in back of manual)

4 Trailer wiring diagram

Figure 1-Continued.

(Located in back of manual)

5 Control and distribution panel, front view

Figure 1-Continued.

(Located in back of manual)

5. Difference in Models

This manual covers the Eagle Model 5157 Jaw Crusher, serial No. ranges 2050 through 2087 and 2090 through 2129. Where differences exist between the two serial number ranges,

each serial number range is covered separately in the applicable maintenance section of this manual. Units within serial No. range 2090 through 2129 have two diesel engine air cleaners, units within serial No. range 2050 through 2087 have one. Units within serial No. range 2090 through 2129 have both coolant temperature and lubricating oil pressure warning lights, but the units within serial No. range 2050 through 2087 do not. Units within serial No. range 2090 through 2129 are equipped with a dual ignition starter switch, units within serial No. range 2050 through 2087 are equipped with a separate switch for the ignition circuit and another switch for the starter energizing circuit. Units of equipment within serial No. range 2090 through 2129 are equipped with a Flexo-Stick assembly, mounted on the drawbar assembly, which is used to suspend the hoses. On units within .serial No. range 2050 through 2087 the hoses are attached to the drawbar assembly with hose clips.

CHAPTER 2

INSTALLATION AND OPERATING INSTRUCTIONS

Section I. SERVICE UPON RECEIPT OF EQUIPMENT

6. Unloading the Jaw Crusher

a. *Shipment by Rail.* Due to its weight and overall dimensions, the primary method of transporting the jaw crusher long distances will be by railroad. If moved over the highway it would normally be towed.

(1) *Blocking and tiedown removal.* Remove the blocking, and tiedown cables and straps that secure the jaw crusher to the flatcar as illustrated on figure 2.

(2) *Ramp unloading.* The preferred method of unloading the jaw crusher is to tow it off the flatcar and down a ramp. If a suitable ramp is not available, construct an unloading ramp as illustrated on figure 3;

Note. Secure the flatcar wheels, both front and rear, with 6 by 6 timber blocks.

(3) Use a suitable towing vehicle and tow the jaw crusher from the flatcar.

b. *Lifting the Jaw Crusher.* If suitable lifting or hoisting equipment is available, attach the lifting slings and equipment to the lifting eyes on the jaw crusher as illustrated on figure 4 and lift the crusher from the flatcar.

Warning: The lifting device must have the capacity for safely lifting and lowering 36 tons.

7. Unpacking the Jaw Crusher

a. *Depreservation.* Prepare jaw crusher for inspection and operation as outlined on DA Form 2258, attached on or near the operational controls.

b. *Unpacking.*

(1) Remove battery electrolyte and cables from the toolbox.

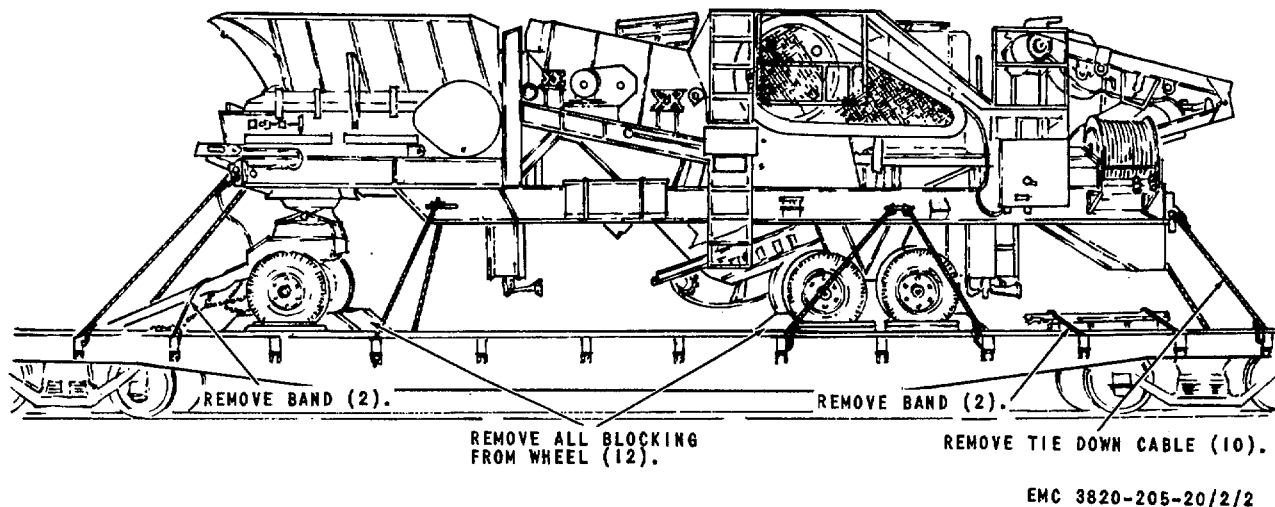


Figure 2. Blocking and tiedown, removal.