
TECHNICAL MANUAL

OPERATOR AND ORGANIZATIONAL MAINTENANCE MANUAL

**CRUSHER, SCREENING UNIT, DIESEL ENGINE DRIVEN,
SEMITRAILER MOUNTED, 35 TON PER HOUR CAPACITY
(IOWA MANUFACTURING COMPANY MODEL 2A-2B)**

FSN 3820-938-7942

**COMPONENT OF CRUSHING AND SCREENING PLANT,
DIESEL ENGINE DRIVEN,
FSN 3820-878-4285**

**HEADQUARTERS, DEPARTMENT OF THE ARMY
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 DEPARTMENT OF THE ARMY
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CHAPTER 1 INTRODUCTION Section I.GENERAL

1-1. Scope

a. These instructions are published for the use of the personnel to whom the Secondary Crushing and Screening Plant 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. Refer to TM 740-90-1 (Administrative Storage of Equipment) for information and instructions pertaining to organizational administrative storage.

c. Refer to TM 750-244-3 (Procedures for Destruction of Equipment to Prevent Enemy Use) for information and instructions on destruction of equipment to prevent enemy use.

d. Report of errors, omissions and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes

to Publications) and forwarded direct to Commanding General, U.S. Army Mobility Equipment Command, ATTN: AMSME-MPP, 4300 Goodfellow Boulevard, St. Louis, Mo.63120.

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

1-2. Record and Report Forms

a. DA Form 2258 (Preservation and Depreservation Guide of Engineer Equipment).

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

Section II. DESCRIPTION AND DATA

1-3.Description

a. The model 2A-2B Crushing and Screening Unit is a highly mobile self-contained component of the Iowa Model 2A2, 35 TPH Crushing and Screening Plant. It can headily be moved and produces material under the most severe conditions.

b. The crusher screening unit is used for the production of crushed rock and gravel to a finished produce to surface, maintain and repair military roads. It is also used to produce aggregate for the preparation of bituminous surfaces and concrete work.

c. This unit consists of a fed conveyor, vibrating screen, screen hopper, double roll secondary crusher, and a return system consisting of roll conveyor and elevating wheel, two side delivery conveyors, one forgraded material, and one for sand or undersize material, and a Detroit Diesel Engine power unit.

d. The Crushing and Screening Unit is powered by four cylinder, 2 cycle 71 Series engine having a compression ratio of 17 to 1 and a total displacement of 284 cubic inches.

e. The unit is trailer mounted using 16.5 x 22.5, 16 ply tires with air controlled brakes on all wheels. The rear wheels are mounted on tandem oscillating beams with a rigid main axle. The unit is provided with a Brown Trailer Division, Model CD-H1 removable dolly furnished with safety marker lamp, both service and blackout, reflectors, two wheels, tire size 16.5 x 22.5 16 ply. The dolly is fitted with coupling sockets and connecting

cables to receive electric current for the lamps from the prime mover. Clutches for the unit and components are controlled by the operator from the walkway and ladder. In this manual the terms "left" and "right" will vary. Right and left on the roll crusher will be determined by facing the countershaft, on conveyors by facing the direction of material flow and on the vibrating screen by standing at the intake end facing the direction of material flow. To determine right and left side of unit stand at rear of unit looking forward (fig. 1-1 and fig.1-2).

1-4. Identification and Data

a. Identification. The Crusher and Screening Unit has 5 major identification plates. These plates are described and located in table 1-1.

Table 1-1. Information Plates

Item	Description	Location
1	Plate-Identification	Frame Below Engine-Left Side
2	Plate-Tie Down Date	Frame Below Engine-Left Side
3	Plate-Warning-Tighten Bolts	Frame Bwlow Elev. Wheel-Left Side
4	Plate-Warning-Replace Screen Braces	Vibrating Screen-Left Side
5	Plate-Battery Cable Hook Up	Frame Below Engine-Right Side

b. Tabulated Data.

(1) Portable crushing and screening plant.

Manufacturer..... Iowa Manufacturing Company
Model..... 2A-2B
Plant capacity 35 Ton Per Hour of 1½" Minus 80%
Crush Material (100 Lbs. Per
Cu. Ft.)
Serial No. 28334B thru 28346B and 29106B
thru 29135B

(a) Roll crusher.

Size..... 24" x 16" Shell
Model..... 2416
Type..... Double Roll

(b) Vibrating screen

Type..... "Cedarpids" Horizontal
Width 36"
Length..... 8'0"
No. of Decks 2

(c) Overhead feeder return conveyor

Type..... Belt
Width (belt) 24"
Length..... 20'4"

(d) Under crusher conveyor

Type..... Belt
Width (belt) 24"
Length..... 5'8"

(e) Rock conveyor

Type..... Belt
Width (belt) 24"
Length..... 17'0"

(f) Sand conveyor

Type..... Belt
Width (belt) 24"
Length..... 17'0"

(g) Dolly w/fifth wheel

Manufacturer..... Brown Trailer Division, Clark
Equipment Co.
Model..... CD-H1
Type..... 2 whl oscillating
Serial Nos. M-68-6450 up

(2) Engine.

Manufacturer..... Detroit Diesel
Model..... RC-4-71 Series
Type..... 4 cylinder
Bore 4 ¼ inch
Stroke 5 inch
Fuel..... Diesel fuel oil
Recommended governed
engine speed for plant 1800 RPM
Piston displacement 284 cu. in.
Spec. Number..... 4031-C
Compression ratio..... 17 to 1

(a) Fuel Strainer.

Manufacturer..... Detroit Diesel
Model..... 5575568

(b) Fuel filter.

Manufacturer..... Detroit Diesel
Model..... 5573949

(c) Fuel pump.

Manufacturer..... Detroit Diesel

Model..... 5184532

(d) Engine speed governor.

Manufacturer Detroit Diesel
Model..... 5108295

(e) Starter motor.

Manufacturer Delco-Remy
Model..... 1113862
Volts 24

(f) Oil filter (2).

Manufacturer Detroit Diesel
Model (full flow) 5194288
Model (by-pass)..... 5572941

(g) Battery charging generator.

Manufacturer Delco-Remy
Model..... 1117478
Volts 24

(h) Generator regulator

Manufacturer Delco-Remy
Model..... 118558
Volts 24

(i) Air cleaner.

Manufacturer Farr
Model..... Roto Pamic
Type..... Dry

(j) Batteries (MS35000-3).

Manufacturer Exide
Type..... 6TN-23
Volts 12

(k) Power take-off.

Manufacturer Detroit Diesel
Model..... 5142132
Type..... Dry clutch

(3) Capacities.

Engine crankcase 15 quarts
Fuel tank..... 70 gallons
Tire size 16.5 x 22.5
Radiator 6 ¾ gals.
Engine oil filters 4 quarts
Tire pressure 65 psi

(4) Nut and bolt torque data.

Cylinder head bolts
and nuts 175-185 lb-ft.
Air intake housing
to blower..... 16-20 lb-ft.

(5) Adjustment.

Exhaust valves 1.012

(6) Dimensions and weights (see fig. 1-1).

Length 410"
Weight 48,900 lbs.
Height 125"
Width 102"
Volume 3050 cu. ft.

(7) Wiring diagram. Refer to figure 1-3 for wiring diagram.

1-5. Difference in Models

This manual covers only the Iowa Manufacturer Model 2A-2B Crushing and Screening Unit. No known unit differences exist for the model covered by this manual.