

TM-10-1255
(2nd Edition)

MAINTENANCE MANUAL

6x4 Recovery

DIAMOND T MOTOR CAR CO.



Model 981

DECEMBER, 1943

TM-10-1255
(2nd Edition)

FORM 981-1

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WAR DEPARTMENT
Washington, December 31, 1943

TM 10-1255, Maintenance Manual,
Recovery, 6x4, Diamond T (Model 981) pub-
lished by the Diamond T Motor Car Company
is furnished for the information and guidance of
all concerned.

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By order of the Secretary of War:

G. C. MARSHALL,
Chief of Staff.

Official:

J. A. ULIO,
Major General,
The Adjutant General.

TM-10-125F
(2nd Edition)

MAINTENANCE MANUAL

6x4 RECOVERY

DIAMOND T MOTOR CAR CO



MODEL 981

ISSUED BY SERVICE DEPARTMENT

DIAMOND T MOTOR CAR COMPANY

CHICAGO, ILLINOIS

TM-10-1255 //
(2nd Edition)

FORM 981-I
DECEMBER, 1943

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Introduction

981 — 6 x 4 — MAINTENANCE MANUAL



The material in this manual is arranged in accordance with quartermaster specifications as outlined in ES-737. The first four sections of the book (A, B, C and D) include material of interest to the first and second echelons of vehicle maintenance and hence are concerned directly with the operation of the vehicle. The remaining material is arranged in the order of the quartermaster's functional group code as outlined on the following page, and hence follows the same grouping as quartermaster parts list.

In offering the suggestions and methods which follow, the difficulty of imparting technical instruction by the printed word is recognized. It is not pretended that other methods, developed by experience to be practical, should not be used. Nor is it assumed that without practical experience or personal instruction, that this book will develop the mechanical ability necessary to the operations described. Rather it is offered in the hope that it will be found of assistance in some measure to all who may have occasion to use it, but recognizing that in the scope of such a publication the major points only can be covered, we cordially invite interrogation should further information be required.



FUNCTIONAL GROUP CODE

01 Engine Group

- 0100 Engine Assembly
- 0101 Cylinder Block and Head
- 0102 Crankshaft, Bearings and Caps
- 0103 Pistons, Rings and Piston Pins
- 0104 Connecting Rods and Bearings
- 0105 Valves, Springs, Guides, Tappets
- 0106 Camshaft, Timing, Bearings, Etc.
- 0107 Oil Pump, Oil Pan, Gauge
- 0108 Manifold
- 0109 Flywheel, Ring Gear, Etc.
- 0110 Mountings

02 Clutch Group

- 0200 Clutch Assembly
- 0201 Clutch Disc
- 0202 Cover, Pressure Plate and Springs
- 0203 Release Lever, Bearing, Forks, Etc.
- 0204 Pedal
- 0205 Pilot Bearing

03 Fuel System Group

- 0300 Gasoline Tank
- 0301 Carburetor, Air Cleaner
- 0302 Fuel Pump, Fuel Pump Tube, Hose, Etc.
- 0303 Accelerator, Throttle and Choke
- 0304 Fuel Tank Lines to Gauge
- 0305 Governor

04 Exhaust Group

- 0401 Muffler
- 0402 Pipe and Tail Pipe

05 Cooling Group

- 0501 Radiator Shell and Core, Filler Grille
- 0502 Thermostat and Thermometer
- 0503 Water Pump, Fan, Belt
- 0504 Radiator Mountings
- 0505 Engine Water Fittings and Hose

06 Electrical Group

- 0601 Generator and Regulator
- 0602 Starting Motor
- 0603 Distributor
- 0604 Ignition Coil and Wiring (Spark Plugs, Ignition Lock Clamp)
- 0605 Instruments and Carrier
- 0606 Light Switches and Cables
- 0607 Headlamps, Sealed Beams, Bulbs and Fuses
- 0608 Tail and Auxiliary Lamp
- 0609 Horn
- 0610 Battery, Starting Cables and Connections
- 0612 Radio Suppression Equipment

07 Transmission Group

- 0700 Transmission
- 0701 Case
- 0702 Gears
- 0703 Main Drive Pinion and Bearings
- 0704 Main Shaft, Countershaft, and Reverse Idler Countershaft
- 0705 Speedometer Drive Gears
- 0706 Shift Forks, Levers, Gearshift Instruction Plate

08 Transfer Case Group

- 0800 Transmission Transfer Assembly
- 0801 Case
- 0802 Drive Gear, Shaft, Bearings
- 0803 Driven Gear, Shaft, Bearings
- 0804 Idler Gear, Shaft, Bearings and Caps
- 0805 Shifter Shafts, Yokes, and Shift Levers
- 0809 Power Take-Off, Transfer Case

09 Propeller Shaft and Universal Joint Group

- 0901 Propeller Shaft Assembly, Hanger and Support
- 0902 Universal Joints

10 Front Axle Group

- 1000 Front Axle Assembly
- 1001 Housing
- 1002 Differential and Carrier Assembly
- 1003 Drive Gear, Pinion and Bearings

- 1006 Steering Knuckle, Flange and Arm
- 1007 Axle Shaft and Universal Joint

11 Rear Axle Group

- 1100 Rear Axle Assembly
- 1101 Housing Assembly
- 1102 Axle Drive Shafts
- 1103 Differential and Carrier Assembly
- 1104 Differential Side Gears and Pinions
- 1105 Drive Gear and Bearings

12 Brake Group

- 1201 Hand Brake
- 1202 Shoes and Facing
- 1203 Brake Shoe Support, Guide, Springs, Adjusting Pins, and Anchor Plate
- 1204 Pedal
- 1205 Air Compressor
- 1206 Tubes and Clips, Brackets, Springs
- 1207 Brake Chamber
- 1208 Brake Dust Shield
- 1209 Brake Lines, Pipes, Hoses
- 1212 Cross Shafts and Pull Rods

13 Wheel, Hub and Drum Group

- 1301 Wheel Assembly, Bearings, Retainers, Etc.
- 1302 Hubs and Drums

14 Steering Group

- 1401 Steering Connecting Rod (Drag Link)
- 1402 Tie Rod
- 1403 Gear Assembly
- 1404 Wheel Assembly
- 1405 Brackets

15 Frame and Bracket Group

- 1500 Frame and Brackets
- 1501 Towing Attachment
- 1502 Pintle Hooks
- 1504 Running Board Hangers
- 1505 Spare Wheel Carrier and Tire Lock

16 Spring and Shock Absorber Group

- 1601 Front and Rear Springs and Spring Bumpers
- 1602 Shackles and Spring Attaching Parts
- 1603 Shock Absorbers and Mountings

17 Hood, Fender, Running Board, Apron (Misc. Sheet Metal) Group

- 1701 Fenders
- 1703 Running Boards
- 1704 Hoods

18 Body Group

- 1800 Cab Body Assy. and Parts
- Cargo Body Parts List (Model 968A)
- Wrecker Body Parts List (Model 969A)
- Ponton Body Parts List (Model 970A)
- 1801 Windshield Wiper and Parts
- 1802 Floor Mats

19 Winch Assy. — Winch and Control Levers

- 1900 Winch and Winch Drive Shafts
- 1910 Control Levers and Rods
- 1911 P.T.O. Assembly for Winch
- 1920 Wrecker Unit

21 Bumper and Guard Group

- 2101 Bumpers
- 2103 Radiator Guard

22 Miscellaneous Body, Chassis and Accessory Group

- 2200 Identification and Caution Plates
- 2201 Rear View Mirrors
- 2202 Tarpaulins, Bows, and End Curtains
- 2203 Speedometer and Parts

23 General Use, Standardized Parts Group

- 2300 Miscellaneous Tools, Tire Chains, Extinguishers
- 2304 Miscellaneous Nuts, Bolts, Screws, and Washers
- 2305 Miscellaneous Cotter Pins, Woodruff Keys

A-4 Introduction

981 — 6 x 4 — MAINTENANCE MANUAL



MODEL 981—RECOVERY—WITH CLOSED CAB

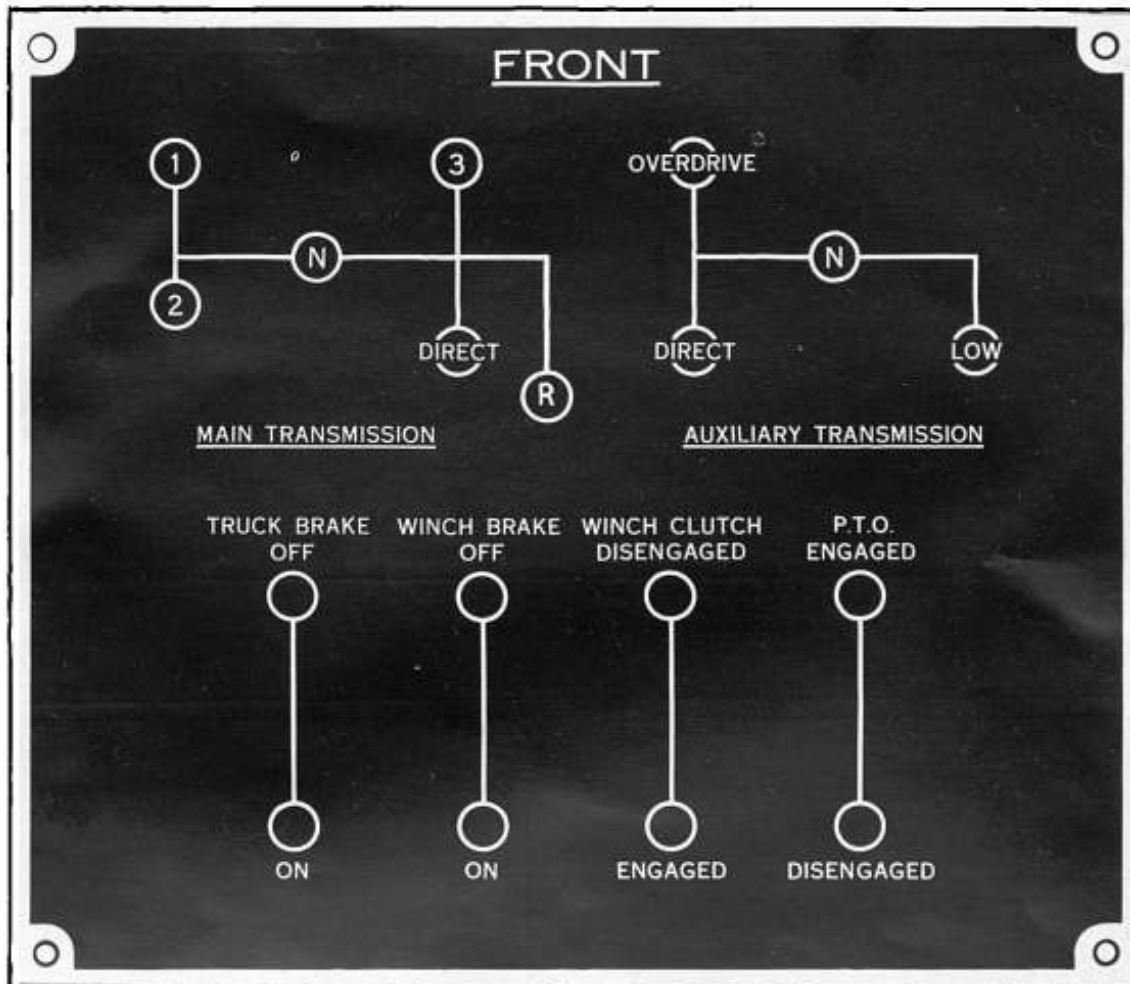


MODEL 981—RECOVERY—WITH OPEN CAB

DIAMOND T MOTOR CAR COMPANY, CHICAGO

B-1
Data**INSTRUCTION PLATES AND SERIAL NUMBERS**

Special instructions governing the operation of units appear on plates mounted in the cab. Serial numbers of the engine, chassis, and power take-off are given on plates mounted on the units as indicated below the illustrations which follow.

**SHIFTING PLATE**

Located in middle of cowl inside cab.

NOMENCLATURE	TRUCK, PRIME MOVER, 6X4
MAKE AND MODEL	DIAMOND-T MODEL
SERIAL NUMBER	
VEHICLE WEIGHT, UNLOADED	LBS.
VEHICLE WEIGHT, LOADED NOMINAL	45,000 LBS.
MAXIMUM TOWED LOAD	115,000 LBS.
DATE OF DELIVERY	
RECOMMENDED BY MANUFACTURER	
TIRE INFLATION PRESSURE	80 LBS. PER SQ. IN.
S.A.E. GRADE OF OIL FOR SUMMER USE	30
S.A.E. GRADE OF OIL FOR WINTER USE	10
CHECK VISCOMETER FREQUENTLY AS A GUIDE TO CORRECT OIL VISCOSITY	

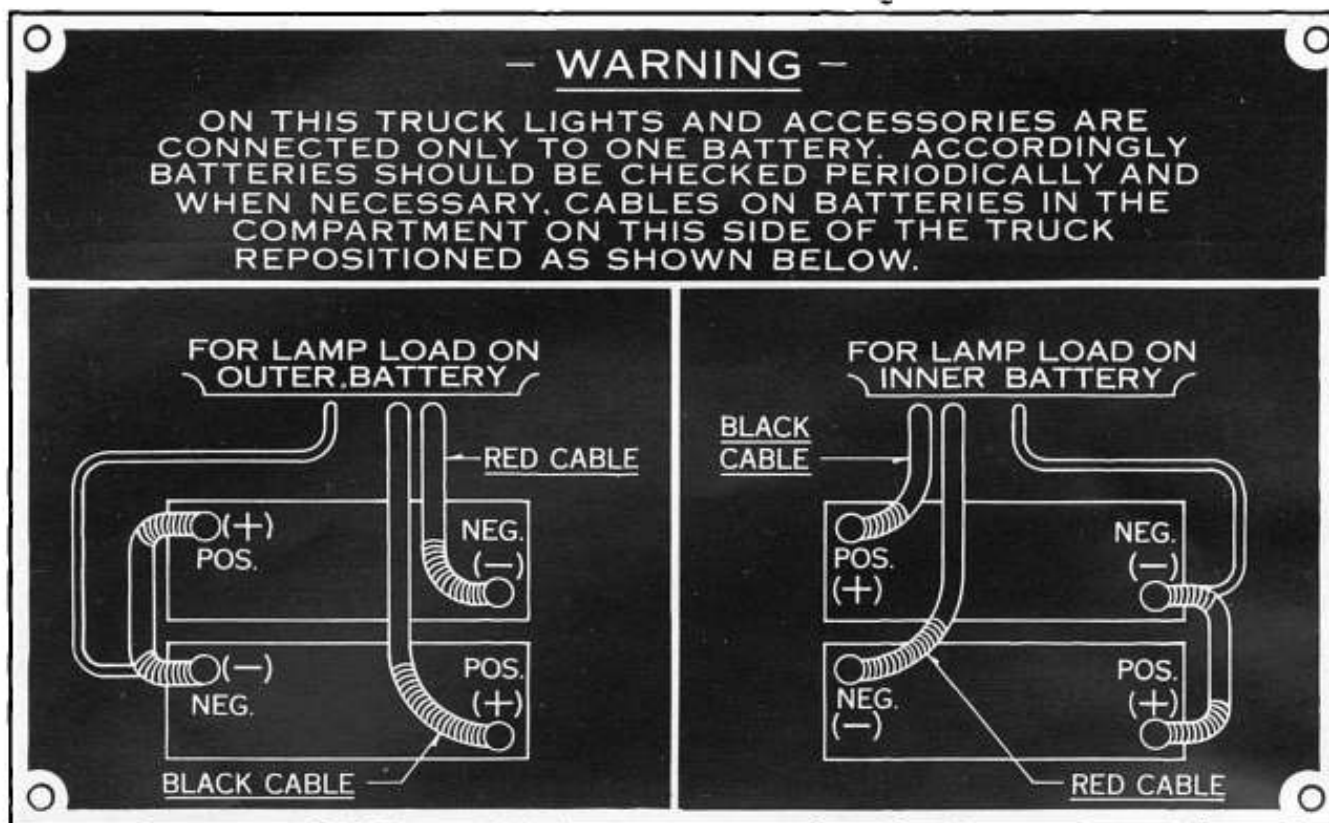
CHASSIS PLATE

Located on left side of cowl under hood.

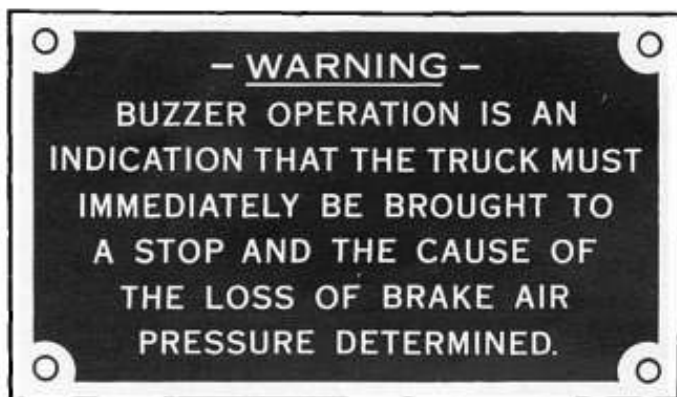
WARNING
BOTH VALVES IN THIS COMPARTMENT MUST BE FULLY OPEN TO USE FUEL FROM TANK ON THIS SIDE OF TRUCK AND VALVES ON OPPOSITE SIDE MUST BE CLOSED TIGHT.
SET FUEL LEVEL GAUGE SWITCH TO INDICATE TANK IN USE.

FUEL VALVE INSTRUCTION PLATE

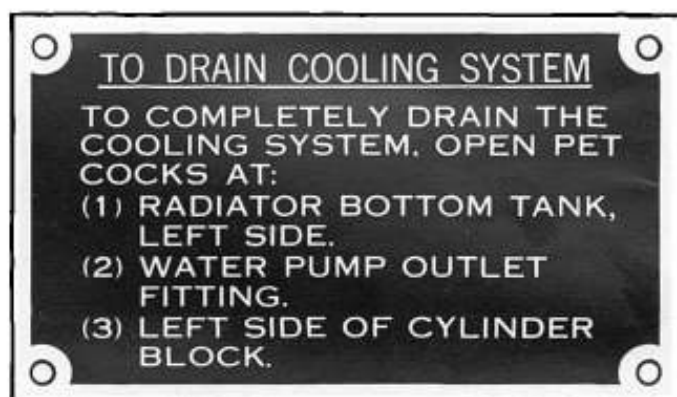
Located on inside of battery compartment doors.



BATTERY CABLE HOOK-UP
Located on right battery compartment door.



AIR BRAKE PRESSURE ALARM
Located over the windshield inside cab.



COOLING SYSTEM DRAIN

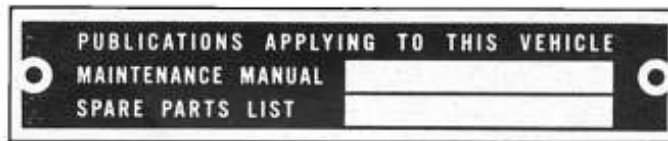


ENGINE PLATE
Located on right side of cylinder block.
(Engine number also stamped on a boss at the upper front corner on the manifold side.)



FUEL LEVEL PLATE
Located on dash.

DIAMOND T MOTOR CAR COMPANY, CHICAGO

B-3
Data**ENGINE STOP**
Located on dash.**PUBLICATION PLATE**
Located on left side of cowl under hood.**PRIMING PUMP**
Located on dash.

MAIN UNIT SERIAL NUMBERS AND TYPE DESIGNATIONS

Frame—Serial number stamped on right side rail over the front spring rear hanger.

Front Axle—The front axle serial number is stamped on the top of the axle bed.

Rear Axles—The rear axle serial number is stamped on the rear face of the banjo, close to the deck. The serial numbers for both rear axle differential carriers are located on a boss at the top of the housing.

Auxiliary Transmission—The auxiliary transmission serial number is stamped on a plate on the left side of the case.

Transmission—The transmission serial number is located on a plate on the left side of the case.

Electrical Accessories—Generator, starting motor, starter switch, fuel cut-off switch and solenoid switch have plates designating model and manufacturing data. Generators also carry serial number on plate.

Steering Gear—Identification number is stamped on top of gear housing.

Battery—Type designation is stamped on cell connecting bar.

Air Compressor—Plate shows model and manufacturing data.

Fuel Injector Pump—Plate gives serial number.

Governor—Plate shows serial number.

Auxiliary Transmission Control—Plate on right side gives serial number.

GENERAL DATA

ENGINE

Model	Hercules DFXE
Type	Diesel
Horsepower—S.A.E.	76.8
Displacement—Cubic Inches	893
Bore	5 $\frac{5}{8}$ "
Stroke	6"
Cylinders	6
Governed Speed	1600 R.P.M.

CAPACITIES

Fuel Tanks—Gallons	75 each
Engine Crankcase (refill)—Quarts.....	26
Cooling System—Quarts.....	61
Transmission—Pints	18

Transmission—Auxiliary—Pints	17
Oil Bath Air Cleaners—Pints.....	2 each
Winch—Pints	8
Rear Axle Differentials—Pints.....	20 each

DIMENSIONS

Turning Radius	
Right	32' 6"
Left	36' 0"
Height (Overall)	100"
Width (Overall)	100"
Length (Overall)	279 $\frac{3}{4}$ "
Weight of Fully Equipped Vehicle	
Without Load	26,600 lbs.
Road Clearance (Min.)	11 $\frac{1}{8}$ "

MEMORANDA