

TM-10-1533

MAINTENANCE MANUAL

4 TON 6x6

DIAMOND T MOTOR CAR CO.



MODELS

968A & 969A

CONTRACT NUMBER W-398-QM-11509

TM-10-1533

FORM 968A-7

TM 10-1533

WAR DEPARTMENT,
Washington, April 7, 1942

TM 10-1533, Maintenance Manual, Truck, 4-Ton, 6 x 6, Cargo, Diamond T (Model 968A), Wrecker, Diamond T (Model 969A) published by Diamond T Motor Car Company is furnished for the information and guidance of all concerned.

(AG 062.11 (4/26/41) PC (C), June 10, 1941.)

By order of the Secretary of War:

G. C. MARSHALL,
Chief of Staff.

Official:

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

TM-10-1533

MAINTENANCE MANUAL

4 TON 6 x 6

DIAMOND T MOTOR CAR CO.



MODELS—968A & 969A

SERIALS { 968A1350 TO 968A4249
 969A0556 TO 969A2811

 CONTRACT NUMBER W-398-QM-11509

U. S. A. REGISTRATION NUMBERS

482149 TO 482398 4110736 TO 4112385
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ISSUED BY SERVICE DEPARTMENT

DIAMOND T MOTOR CAR COMPANY
 CHICAGO, ILLINOIS

TM-10-1533

FORM 968A-7
 JULY 1942

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A-2 Introduction

968A, 969A — 6 x 6 — 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.



DIAMOND T MOTOR CAR COMPANY, CHICAGO

A-3
Introduction**FUNCTIONAL GROUP CODE—U. S. ARMY Q. M. CORPS****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

968A, 969A — 6 x 6 — MAINTENANCE MANUAL



*Model 968A
Cargo*



*Model 969A
Wrecker*

DIAMOND T MOTOR CAR COMPANY, CHICAGO**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, winch and power take-off are given on plates mounted on the units as indicated below the illustrations which follow.

NOMENCLATURE	TRUCK, 4-TON (HC) 6X6
SUPPLY ARM OR SERVICE	
MAINTAINING VEHICLE	QUARTERMASTER CORPS
MAKE AND MODEL	DIAMOND T MODEL
SERIAL NUMBER	
GROSS WEIGHT	LBS.
MAXIMUM PAYLOAD	8,000 LBS.
MAXIMUM TRAILED LOAD	11,000 LBS.
DATE OF DELIVERY	
RECOMMENDED BY MANUFACTURER	
OCTANE RATING OF GASOLINE	68
SAE GRADE OF OIL FOR SUMMER	30
SAE GRADE OF OIL FOR WINTER	10

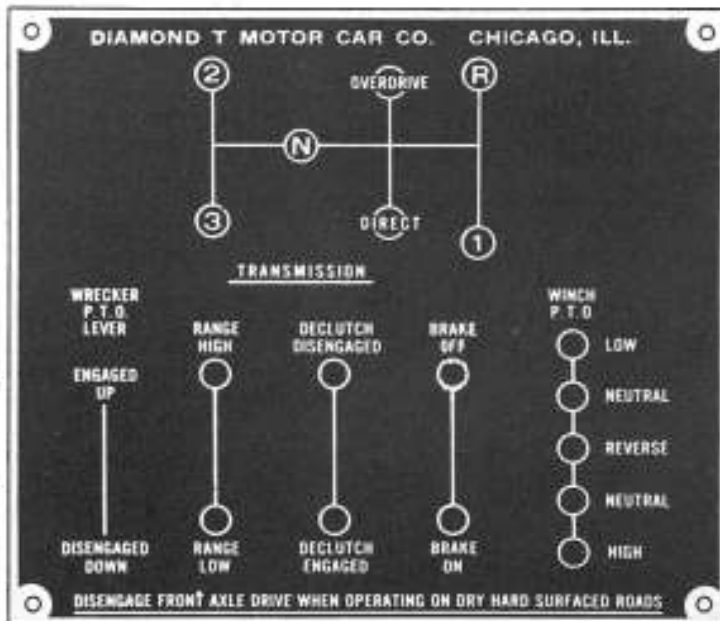
CHASSIS PLATE

Located on left side of cowl under hood.

IMPORTANT MAINTAIN OIL LEVEL BETWEEN $\frac{1}{4}$ AND $\frac{3}{4}$ MARK ON GAUGE	
OIL PRESSURE AT WORKING SPEED TO LBS.	
FIRING ORDER 1-5-3-6-2-4	
ENGINE NO.	SIZE
MODEL	TAPPET CLEARANCE EXH. INT.
DIAMOND T MOTOR CAR Co.	
CHICAGO, ILL. U.S.A.	

ENGINE PLATE

Located on left side of cylinder block.

**SHIFTING PLATE**

Located in middle of cowl inside cab

Note: Wrecker P.T.O. shift shown at left side of plate only applies to Model 969B and does not appear on shift plates on other models.

— WARNING —
BUZZER OPERATION IS AN INDICATION THAT THE TRUCK MUST IMMEDIATELY BE BROUGHT TO A STOP AND THE CAUSE OF THE LOSS OF BRAKE AIR PRESSURE DETERMINED.

IF ENGINE IS OPERATED FOR ANY LENGTH OF TIME AT A SPEED GREATER THAN 2300 R.P.M., AS SHOWN BY ENGINE SPEED RECORDER ON INSTRUMENT PANEL, THE ENGINE WILL BE SERIOUSLY DAMAGED.
--

CAUTION PLATES

Located over the windshield inside cab.

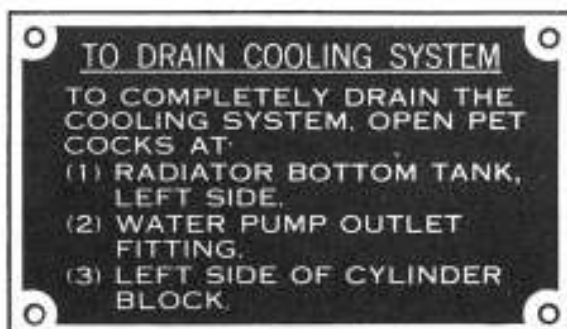
PUBLICATIONS APPLYING TO THIS VEHICLE	
PARTS LIST	T/M 10- []
MAINTENANCE MANUAL	T/M 10- []

PUBLICATION PLATE

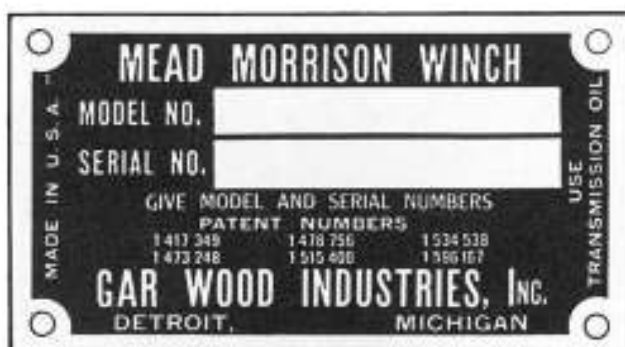
Located on left side of cowl under hood.

B-2 Data

968A, 969A — 6 x 6 — MAINTENANCE MANUAL



COOLING SYSTEM PLATE
Located over windshield inside cab.



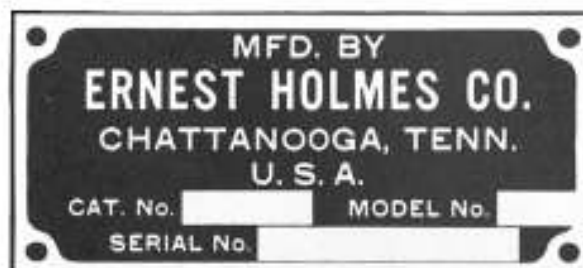
WINCH PLATE
Located on top of gear box on winch.



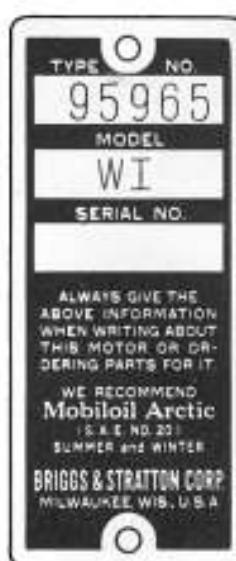
WINCH CAUTION PLATE
Located in middle of cowl inside cab.



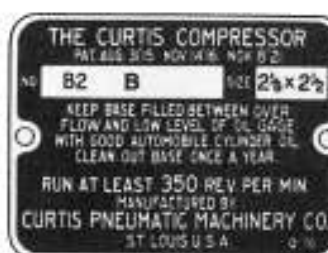
POWER TAKE-OFF SERIAL PLATE
Located on power take-off shifting cover.



WRECKER SERIAL PLATE
Located on right side of wrecker frame.



AIR COMPRESSOR ENGINE PLATES
Located on Engine Blower Housing



WRECKER AIR COMPRESSOR PLATES
Located on Compressor Block



WRECKER PRESSURE CUTOUT PLATE
Located on Cutout Switch Cover



WRECKER AIR COMPRESSOR PLATE
Located on Block

DIAMOND T MOTOR CAR COMPANY, CHICAGO

B-3
Data**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 housing banjo and that of the front axle carrier is on a boss beside the filler plug.

Rear Axles — The forward rear axle serial number is stamped on the rear face of the banjo, close to the deck, while that of the rear axle is located just above the filler plug. The serial numbers for both rear axle carriers are located on a boss at the top of the housing.

Transfer Case — The transfer case serial number is stamped on a boss on the case, next to the filler plug.

Transmission — The transmission serial number

is located either on the rear face of the case, to the left and just below the main shaft, or in some cases, to the left of the countershaft bearing cap.

Electrical Accessories — Generator, starting motor, distributor, starter 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.

Governor — Plate shows serial number.

GENERAL DATA**ENGINE**

Model	Hercules RXC
Type	"L" Head
Horsepower — S.A.E.	51.34
Displacement — Cubic Inches	529
Bore	4 $\frac{5}{8}$ "
Stroke	5 $\frac{1}{4}$ "
Cylinders	6
Governed Speed	2300 R.P.M.

CAPACITIES

Fuel Tanks — Gallons	40 each
Engine Crankcase (refill) — Quarts	16
Cooling System — Quarts	48
Transmission & P.T.O. — Pints	24

Oil Bath Air Cleaner — Pints	3
Winch — Pints	3 $\frac{1}{2}$
Transfer Case — Pints	5 $\frac{1}{2}$
Front Axle Differential — Pints	15
Rear Axle Differentials — Pints	7 $\frac{1}{2}$ each
Johnson Engine Crankcase (Wrecker) — Pints ..	1
Briggs & Stratton Engine Crankcase (Wrecker) — Pints	1
Kellogg Compressor Crankcase (Wrecker) — Pints	$\frac{1}{2}$
Curtis Compressor Crankcase (Wrecker) — Pints	$\frac{3}{4}$
Devlbiss Compressor Crankcase (Wrecker) — Pints	1
Wrecker Transmission — Pints	8

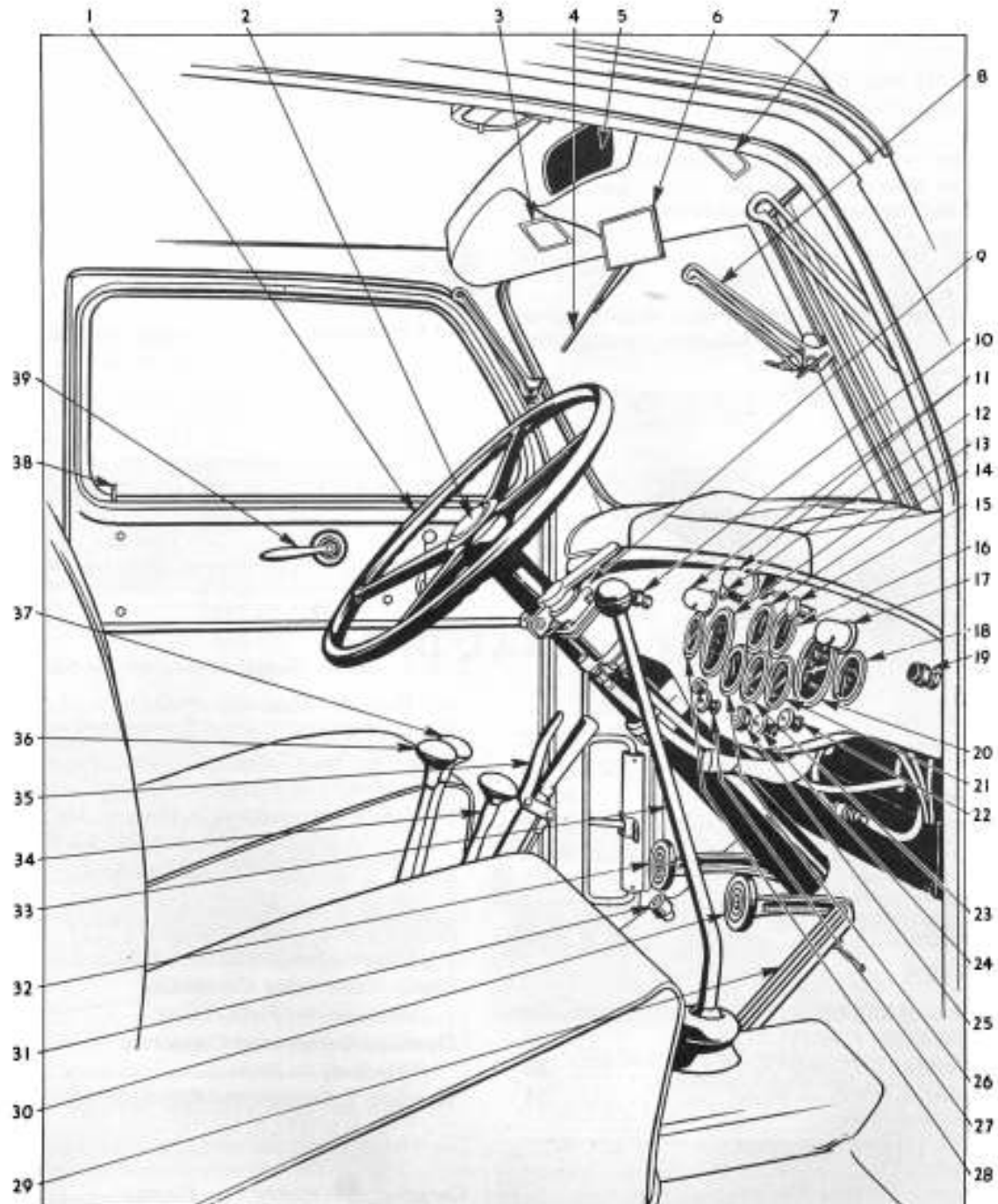
DIMENSIONS

	<i>Cargo</i>	<i>Wrecker</i>	<i>Ponton</i>
Turning Radius			
Right	36'-5"	36'-5"	38'-5"
Left	35'	35'	37'
Height (Overall)	114"	111"	114"
Width (Overall)	96"	101"	96"
Length (Overall)	268"	291 $\frac{5}{8}$ "	296 $\frac{1}{8}$ "
Weight of Fully Equipped Vehicle			
Without Load	18,400 lbs.	21,700 lbs.	18,800 lbs.
Road Clearance (Min.)	11"	11"	11"

C-0 Operation

968A, 969A — 6 x 6 — MAINTENANCE MANUAL

CAB EQUIPMENT



- | | | | |
|------------------------------|------------------------------|--------------------------|--------------------------------|
| 1. Steering Wheel | 11. Instrument Lights | 21. Temperature Gauge | 31. Dimmer Switch |
| 2. Horn Button | 12. Main Light Switch | 22. Hand Throttle Button | 32. Clutch Pedal |
| 3. Warning Plate | 13. Tachometer | 23. Oil Pressure Gauge | 33. Transmission Lever |
| 4. Windshield Wiper | 14. Ammeter | 24. Choke Button | 34. Power Take-off Shift Lever |
| 5. Glove Compartment | 15. Panel Light Switch | 25. Ignition Switch | 35. Hand Brake Lever |
| 6. Rear View Mirror | 16. Front Battery Ammeter | 26. Fuel Gauge | 36. Decutching Lever |
| 7. Caution Plate | 17. Instrument Light | 27. Spark Control Button | 37. Transfer Case Shift Lever |
| 8. Windshield Sector Arm | 18. Viscometer | 28. Air Pressure Gauge | 38. Night Latch Button |
| 9. Hand Air Valve | 19. Windshield Wiper Control | 29. Accelerator Pedal | 39. Remote Control Handle |
| 10. Windshield Wiper Control | 20. Speedometer | 30. Brake Pedal | |