

# MAINTENANCE MANUAL



**GMC MODEL CCKWX-353**  
BUILT FOR  
**UNITED STATES ARMY**

**U.S.A. REGISTRATION NUMBERS:**

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*General Motors Truck*

TM 10-1105

WAR DEPARTMENT,  
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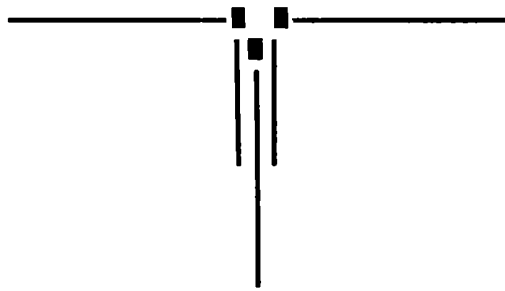
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# MAINTENANCE · MANUAL ·



MODEL CCKWX-353  
TRUCK CHASSIS

Serial Nos.  
001 to 13187  
Special Edition



**GENERAL MOTORS TRUCK & COACH**  
DIVISION OF  
YELLOW TRUCK & COACH MANUFACTURING COMPANY  
PONTIAC, MICHIGAN

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PONTIAC, MICHIGAN

# GMC MAINTENANCE MANUAL

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## • INTRODUCTION •




Maintenance information and essential repair instructions, as well as general specifications and test data covering units used in this model will be found on following pages.

Book is arranged in groups, these groups having the same numbers and names in all current Maintenance Manuals, Parts Books, Service Bulletins and Master Parts Price Lists. Each group is indexed with black tabs which line up with group names and numbers shown on title page.

## SERIAL NUMBERS

Serial numbers of trucks covered by this publication, as well as U.S.A. Registration numbers, are given on the last page of this book.

As it is important to always specify serial number of vehicle when ordering parts, we are showing below the various points where these numbers appear. These illustrations are typical of serial number locations—actual serial numbers shown do not necessarily apply on models covered by this publication.

CHASSIS NUMBER	ENGINE NUMBER	CAB NUMBER
		
Stamped on right-hand frame side rail above front spring.	Stamped on left-hand side of cylinder block towards rear of engine.	On left hand engine side of cowl near voltage regulator.

# GMC MAINTENANCE MANUAL

MODEL CCKWX-353 GMC TRUCK

## GENERAL DATA

Wheelbase	See Group No. 11
<u>Engine</u>	
Type	270
Horsepower - S.A.E.	34.35
Displacement - Cu. In.	269.52
Bore	3-25/32"
Stroke	4"
Cylinders	6

## CAPACITIES

Fuel Tank - R.H. Side Rail (Gals.)	40
Engine Crankcase - Refill (Qts.)	10
Cooling System (Qts.)	24
Transmission (Pts.) (Without Power Take-Off)	13
Transmission (Pts.) (With Power Take-Off)	14
Transfer Case (Pts.)	8-1/2
Front Axle Differential (Pts.)	7
Rear Axle Differential (Pts.) Each	7
Oil Bath Air Cleaner (Qts.)	1
Winch (For Trucks So Equipped) Pts.	3-3/4

## LAMP BULBS

<u>Head Lamp</u> (Sealed Beam)		
Driving Beam (Upper)	45 Watts	
Passing Beam (Lower)	35 Watts	
	<u>C.P.</u>	<u>Mazda No.</u>
Blackout Headlamp	3	63
Blackout Tail and Stop Lamps	3	63
Service Stop and Tail Lamps	21-3	1154
Instrument Lamps	3	63
Beam Indicator Lamp	1	51
Ignition Switch Lamp	1-1/2	55
Fuse (Thermal Type - in Light Switch)	30 Amp.	

## DRIVERS INSTRUCTIONS

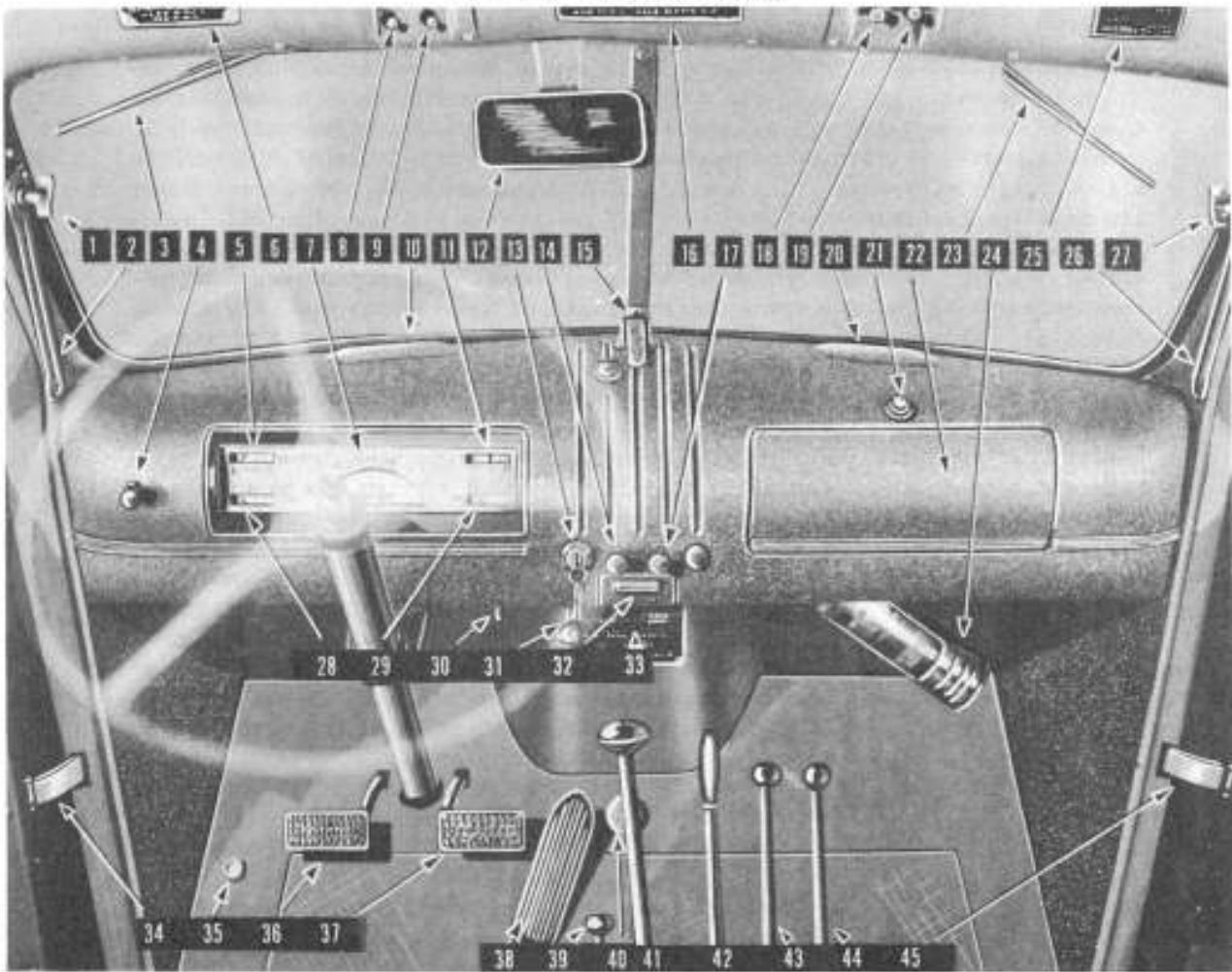


Fig. 1 Interior of Driver's Cab - Showing Controls and Instruments.

- |   |   |
|---|---|
| 1. Windshield Quadrant Adjusting Screw.     | 24. Fire Extinguisher.                                      |
| 2. Windshield Quadrant.                     | 25. Winch Caution Plate.                                    |
| 3. Windshield Wiper - L.H.                  | 26. Windshield Quadrant.                                    |
| 4. Light Switch.                            | 27. Windshield Quadrant Adjusting Screw.                    |
| 5. Water Temperature Gauge.                 | 28. Fuel Gauge.   |
| 6. Shifting Arrangement Plate (See Fig. 2.) | 29. Oil Gauge.  |
| 7. Speedometer.                             | 30. Instrument Panel Light Switch.                          |
| 8. Windshield Wiper Switch.                 | 31. Ventilator Control.                                     |
| 9. Windshield Wiper Speed Regulator.        | 32. Ash Tray.   |
| 10. Defroster Opening.                      | 33. Serial Number and Operating Data Plate<br>(See Fig. 4). |
| 11. Ammeter.                                | 34. Door Check.   |
| 12. Rear View Mirror.                       | 35. Dimmer Switch.  |
| 13. Ignition Switch.                        | 36. Clutch Pedal.   |
| 14. Throttle Button.                        | 37. Brake Pedal.  |
| 15. Windshield Lock.                        | 38. Accelerator Pedal.                                      |
| 16. Road Speed Caution Plate (See Fig. 3).  | 39. Winch Control Lever.                                    |
| 17. Choke Button.                           | 40. Starter Pedal.  |
| 18. Windshield Wiper Speed Regulator.       | 41. Transmission Shift Lever.                               |
| 19. Windshield Wiper Switch.                | 42. Hand Brake Lever.                                       |
| 20. Defroster Opening.                      | 43. Transfer Case Shifting Lever.                           |
| 21. Package Compartment Button.             | 44. Front Axle Control Lever.                               |
| 22. Package Compartment.                    | 45. Door Check.   |
| 23. Windshield Wiper R.H.                   |   |

## DRIVERS INSTRUCTIONS

Our instructions to Drivers constitute one of the most important purposes of this manual - as it is our contention that good driving embraces more than the basic acts of starting, operating and stopping a motor vehicle. By adhering to good driving practices and thru complete knowledge of the vehicle a good Driver will obtain full benefit of GMC economy - in low operating and low maintenance costs.

The natural function of a GMC truck is smooth and "rhythmic" without sharp clicks, knocks, or sounds of metal scraping metal. The good Driver soon becomes accustomed to the operation or "feel" of his vehicle and is quick to detect any changes in its normal operation. On the other hand the Driver is not expected to rely entirely upon sound for trouble diagnosis - and, accordingly, instruments are provided which indicate the condition of such vital items as Engine Temperature, Engine Oil Pressure, Electrical Charging Rate, Quantity of Fuel etc., all of which are useful aids to good driving.

In addition to the information contained in this section, we particularly refer all Drivers to "Service Diagnosis" data at end of each division of this book. Careful study of these items will enable the Driver to recognize even gradual changes in the mechanical condition of various units, and will thus encourage the application of corrective service BEFORE costly repairs become necessary.

Whether or not the Driver is thoroughly acquainted with properly handling a truck, or is only a beginner - the following instructions should be carefully read and as carefully put into practice.

**BEFORE STARTING THE ENGINE** (at the beginning of the days run), it is important that the vehicle be ready for operation. The following procedure is listed:

- A. See that radiator has sufficient water and check fan belt to see that it is in place and properly adjusted to assure adequate cooling.
- B. See that oil level is up to "full" mark on dip stick. Also inspect oil and fuel lines for leaks.
- C. Note condition of tires and see that they are properly and evenly inflated.
- D. See that there is adequate fuel supply.
- E. Test lights and horn.

**HOW TO START ENGINE**

- A. Hand brake lever (42) should be pulled back to set brakes.
- B. Transmission shift lever (41) and transfer case shift lever (43) must be in neutral position. See shifting diagram.
- C. Pull out hand throttle (14) about 1/2" (20 M.P.H.). This is not necessary if engine is warm.
- D. Pull choke button (17) until 1/2 open to obtain proper fuel and air mixture for starting. This may not be necessary if engine is warm. In extremely cold weather choke may be pulled all the way out.

- E. Insert ignition switch key (13) and turn to "On" position.
- F. Push clutch pedal (36) downward and hold down until after engine starts.
- G. Step on starter pedal (40) to start engine. Release pedal as soon as engine starts.
- H. Make necessary throttle and choke adjustments to obtain even idling speed and with shifting levers in neutral position, gradually let out clutch pedal.

**HOW TO START TRUCK**

- A. Push clutch pedal (36) downward to disengage clutch.
- B. If transfer case shifting lever (43) is in neutral position it should be moved into either "high" or "low" speed (See Fig. 2).
- C. Move transmission gear shift lever (41) into "first" speed (see Fig. 2).
- D. Release hand brake lever (42).
- E. Step down on accelerator pedal (38) to speed up engine. Release clutch pedal slowly and push accelerator pedal downward as necessary to prevent engine from stalling while truck starts forward as clutch pedal is released.
- F. As truck speed increases, release accelerator pedal (38), depress clutch pedal, move transmission lever (41) into neutral and then



## DRIVERS INSTRUCTIONS

into next higher speed. Depress accelerator pedal and release clutch as explained above. Repeat this operation until transmission is in high gear.

- G. Instructions for shifting transfer case and disengagement of front axle are as follows:
- It should first be remembered that only the "high" range can be employed when front axle is disengaged - and that if it is desired to shift into "low" range, the front axle must first be engaged. After front axle is engaged, transfer case may be operated in either "high" or "low" range. If, after operating with front axle engaged, it is desired to disengage front axle, it is first necessary to shift transfer case into "neutral" position and then move front axle shift lever into disengaged position - further operation would then have to be in "high" range. Front axle may be engaged or disengaged at any vehicle speed without releasing clutch. Transmission gear shift position does not in any way affect the selection of, or shifting of, high and low range in transfer case.
  - Shift from High to Low Speed should only be attempted when vehicle is operating at low speeds or at a standstill. Front axle must be engaged for this shift. Depress clutch pedal and move transfer case shift lever into neutral. Release clutch pedal and accelerate engine to approximately double that of vehicle speed. Depress clutch pedal again and move shift lever forward (without applying excessive pressure) into low speed position. Then release clutch and accelerate engine. This method of shifting is termed "Double-Clutching", a little practice will enable driver to accomplish shift smoothly and efficiently.
  - Shift From Low to High Speed can be accomplished at any time - regardless of vehicle speed. To do this, the double-clutch method is employed, simply depress clutch pedal and move shift lever into neutral. Release clutch pedal and accelerate engine to synchronize engine speed with vehicle speed. Then depress clutch pedal and move shift lever towards rear into high speed position.

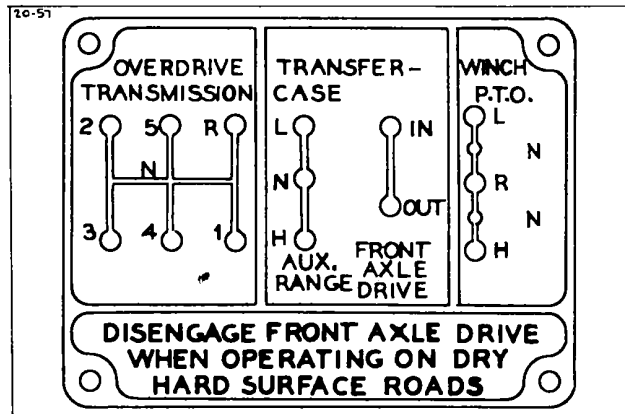


Fig. 2 Transmission, Transfer Case and Power Take-Off Shift Arrangement Plate (Power Take-Off Shift Arrangement Applies Only to Vehicles Equipped With Winch).

## HOW TO SHIFT INTO LOWER TRANSMISSION SPEED GEAR

Transmission should always be shifted to next lower speed before engine begins to labor or before vehicle speed is reduced appreciably. Shifting to lower speed is accomplished by depressing clutch pedal (36) and releasing accelerator pedal (38) at same instant. Move transmission gear shift lever (41) quickly and without excessive pressure into lower speed, accelerate engine to synchronize engine with vehicle speed, and release clutch pedal slowly. In general, it is advisable to use the same transmission speed going down hill as would be required to climb the same hill.

## HOW TO REVERSE

- Before attempting to shift into reverse, truck must be brought to a complete stop.
- Push clutch pedal (36) downward to disengage clutch.
  - Move gear shift lever (41) as far as possible to right then toward front. (See Fig. 2). or; plate above cab windshield).
  - Release clutch pedal and accelerate engine in same manner as previously explained under "How To Start Truck".

## HOW TO STOP TRUCK

- Remove foot from accelerator pedal (38) and apply brakes by pressing down on foot pedal (37).
- When speed of truck has been reduced to idling speed of engine, clutch should be disengaged by depressing clutch pedal, and transmission shift lever moved into neutral position. Release clutch pedal and apply hand brake when truck has come to complete stop.

## DRIVERS INSTRUCTIONS

14-54

MAXIMUM PERMISSIBLE ROAD SPEEDS IN THE FOLLOWING GEAR POSITIONS		
TRANSMISSION IN	TRANSFER CASE IN	
	HIGH RANGE	LOW RANGE
OVERDRIVE	45	20
DIRECT	37	16
THIRD	20	9
SECOND	10	4
FIRST	6	2
REVERSE	6	2

BASED ON 2750 R.P.M. ENGINE      MAXIMUM SPEED  
6.6-1 AXLE RATIO & 7.50-20 TIRES

Fig. 3 Permissible Speed Range in Various Transmissions and Transfer Case Ratios.

## DESCRIPTION OF INSTRUMENTS

**WINDSHIELD QUADRANT THUMB SCREW (1 and 27).** Windshield may be opened outward and upward to a horizontal position by loosening these thumb screws. Windshield may also be locked in any desired position by tightening thumb screws against quadrant.

**WINDSHIELD QUADRANT (2 and 26).** Quadrants, one on each side of windshield, act as support and guides to hold windshield in any desired open position.

**WINDSHIELD WIPER (3 and 23).** Dual windshield wipers are each operated independently - separate control switches are provided to turn windshield wiper "on" or "off" and to regulate speed of wiper action.

**LIGHT SWITCH (4).** Lights are controlled by hand operated switch on instrument board and foot switch on cab floor. Hand switch has two positions and operates as follows:

Knob pressed in "ALL" lights "OFF":

Knob pulled out to latch stop turns on "BLACKOUT" lights located on each front fender also in right and left tail lamps.

Latch stop depressed and knob pulled out all the way turns on all "SERVICE" lights. In this position either upper or lower headlamp beam is selected by operating foot switch as later described.

**WATER TEMPERATURE GAUGE (5).** Water temperature gauge indicates temperature of water in

cooling system. Water temperature is dependent upon operating conditions, load, atmospheric temperature, and etc., however temperature range should be within 140° F. to 180° F. If temperature should reach 212° F. (boiling point) vehicle should be stopped and trouble corrected before proceeding.

**SHIFTING ARRANGEMENT PLATE (6).** Method of shifting transmission, transfer case and power take-off is outlined on this plate.

**SPEEDOMETER (7).** Speedometer indicates road speed of vehicle in miles per hour. During break in period (500 miles) vehicle should not be operated faster than 40 miles per hour.

**WINDSHIELD WIPER SWITCH (8).** This switch may be pulled out to operate L.H. windshield wipers. Speed of windshield wiper action is controlled by switch (9) which must also be turned on.

**WINDSHIELD WIPER SPEED REGULATION (9).** After windshield wiper switch is pulled out, speed of wiper action can be regulated by turning switch to right or left as required.

**DEFROSTER OPENING (10 and 20).** This is an item of standard construction which permits installation of heater-defroster connections to act as a fan upon windshield and keep it free from frost during cold weather.

**AMMETER (11).** Ammeter indicates rate of flow of electric current being supplied to battery by generator or rate of discharge from battery. When vehicle speed reaches 7 to 10 M. P.H. generator starts charging and ammeter needle will move to positive (+) side. Current will increase with vehicle speed until maximum of 14 to 16 amperes is reached at 25 M.P.H. at speeds below 7 to 10 M.P.H. ammeter needle will move to negative (-) side indicating that battery is discharging.

**REAR VIEW MIRROR (12).** This mirror permits vision directly through rear window of cab when body paulin does not obscure vision. Outside rear view mirror will provide satisfactory rear vision at all times.

**IGNITION SWITCH (13).** Ignition switch is turned "ON" or "OFF" by switch key. Turning