

  
  
**OPERATOR'S  
HANDBOOK****Mack® TerraPro™ Series  
(MRU Series)**

21394655  
April 2010

Mack® MRU Series

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21394655



# Foreword

This manual contains information concerning the operation and function of the Mack Link System. The information in this manual applies to vehicles built April 2010 and later. Please keep this manual in the vehicle at all times.

**Note:** Illustrations in this manual are used for reference only and may differ slightly from the actual vehicle. However, key components addressed in this document are represented as accurately as possible.

The National Highway Traffic Safety Administration (NHTSA) and Mack Trucks, Inc. should be informed immediately if you believe that the vehicle has a defect that could cause a crash, injury or death.

Contact NHTSA by calling the Auto Safety Hotline at 1 (888) 327-4236, by writing to NHTSA, U.S. Department of Transportation, Washington, DC 20590, by TTY at 1 (800) 424-9153, or visit their website at [www.nhtsa.dot.gov](http://www.nhtsa.dot.gov).

## **Mack Trucks Inc.**

Greensboro, NC USA

**Order number: PV776-21394655**

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# Safety Information

**IMPORTANT:** Before driving this vehicle, be certain that you have read and that you fully understand each and every step of the driving and handling information in this manual. Be certain that you fully understand and follow all safety warnings.

IT IS IMPORTANT THAT THE FOLLOWING INFORMATION BE READ, UNDERSTOOD AND ALWAYS FOLLOWED.

The following types of advisories are used throughout this manual:

## **DANGER**

Danger indicates an unsafe practice that could result in serious personal injury or death. A danger advisory banner is in **white** type on a **black** background with a **black** border.

## **WARNING**

Warning indicates an unsafe practice that could result in personal injury. A warning advisory banner is in **black** type on a **gray** background with a **black** border.

## **CAUTION**

Caution indicates an unsafe practice that could result in damage to the product. A caution advisory is in **black** type on a **white** background with a **black** border.

**Note:** Note indicates a procedure, practice, or condition that must be followed in order for the vehicle or component to function in the manner intended.

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## TO THE OWNER

### In Appreciation

Thank you for buying a MACK® vehicle. With proper care and maintenance, your new Mack® TerraPro™ MRU model will help you gain a competitive edge with its fuel-efficient drivetrain combinations, low maintenance, extended service intervals and, eventually, good resale value.

The Mack® TerraPro™ MRU model is available for a wide range of applications. Because of this versatility, drivetrains and components vary and operating instructions may differ from one model to another. While every effort has been made to cover all current arrangements, do not hesitate to consult your MACK distributor if a question arises. Honest, personal service is standard with every MACK sale.



#### CAUTION

Mack Trucks, Inc. would like to point out the important role that the driver plays in the life of the vehicle. Only trained and informed drivers should operate this vehicle.

We, at Mack Trucks, Inc., hope that you will be happy with your new Mack® TerraPro™ model, and that you see many years of trouble-free driving.

This vehicle was built to conform to all federal standards and regulations applicable at the time of manufacture.

## 2 INTRODUCTION

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### About This Handbook

This handbook is referred to as the Mack® TerraPro™ Series Operator's Handbook. It covers all Mack® TerraPro™ models. Keep this handbook with the vehicle at all times to ensure that each owner and/or operator will have access to all pertinent information relating to the operation and handling of this vehicle.

This handbook was prepared to provide the driver with all relevant information concerning the daily operation of this vehicle. Please read it thoroughly; pay particular attention to advisory labels that have been included to draw attention to important issues of operator safety and overall performance.

Information and illustrations in this handbook are based on the latest production usage at the time of printing and are subject to change without prior notice.

**Note:** Basic maintenance and lubrication procedures are found in this manual beginning with "MAINTENANCE INTRODUCTION", page 225. For further information, refer to the Maintenance and Lubrication Manual. Other important information can be found in the Emission Control Systems for MACK Diesel Engine Manual.

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## THE VEHICLE

### Basic Configuration

The Mack® TerraPro™ MRU model has a low-entry, cab-forward-style operators compartment. Low profile and excellent visibility make this model popular throughout the refuse-hauling, construction and firefighting industries.

### Vehicle Management and Control System (V-MAC®)

The Vehicle Management and Control System (V-MAC) is an electronic control system that manages engine and vehicle functions. In addition, the DataMax™ portion of V-MAC monitors and stores a variety of information (i.e., maintenance schedules, overspeed logs, fault tables, trip summaries)

For a complete description of the V-MAC IV system, refer to the applicable V-MAC® Operator's Guide, which is supplied with the vehicle.

Additional information concerning service, diagnostics, programming and vendor equipment interface application is available from the Mack Trucks, Inc. Service Publications Department. Contact your local MACK dealer for details.



#### **WARNING**

Never cut into the V-MAC system wire harness to power additional equipment. If such equipment is to be installed, contact your MACK dealer for assistance.

# 4 INTRODUCTION

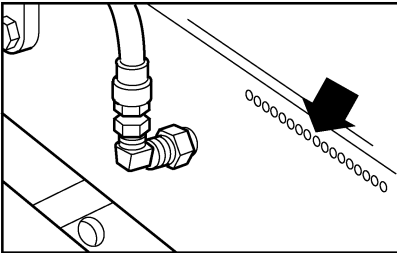
## COMPONENT IDENTIFICATION

Locate the following serial numbers and write them in the boxes provided next to each illustration.

### VIN Locations

The Vehicle Identification Number (VIN) is displayed in two locations (a frame rail stamping and a label). The 17-digit VIN must be identical in both locations.

The VIN frame stamping is located on the right outside frame rail and the left inside frame rail.

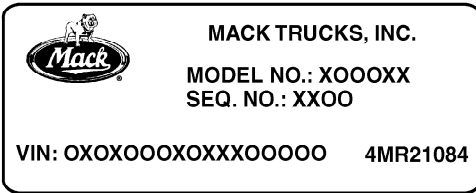


Right Outside Frame Rail Flange

**VEHICLE  
IDENTIFICATION  
NUMBER**

C0029554

The **VIN label** is located on the inside door frame below the driver seat.

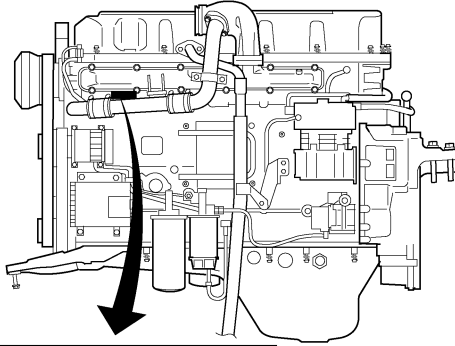


**Vehicle  
Identification  
Number**

C0028941

## Engine Identification

On the **MACK MP** engines, the engine serial number is stamped on the left side of the engine block, below the inlet manifold.



**ENGINE  
SERIAL  
NUMBER**

--


XX*123456*	A1*Y ○



# 6 INTRODUCTION


## Engine Information Plate

In compliance with Federal and California emission requirements, an engine information label is affixed to all MACK diesel engines. This label, which is located on the cylinder head cover at the front of the engine, gives basic engine identification information (engine model, serial number, etc.), advertised horsepower at rated speed, emissions regulations to which the engine conforms and inlet and exhaust valve lash settings. Examples of the 49 state EPA approved, and 50 state EPA and California approved engine identification labels are given below.

		<b>IMPORTANT ENGINE INFORMATION</b> RENSEIGNEMENTS IMPORTANTS MOTEUR		MACK TRUCKS, INC.		VALVE LASH (JEU SOUPAPES)	
		ENGINE FAMILY: AVPTH12.8S01 FAMILLE DE MOTEURS:		ENGINE MODEL: MP8-505C MODELE MOTEUR:		SERIAL NO.: 123456 NO. SERIE:	
DISPLACEMENT CYLINDREE	ADVERTISED HP @ RPM PUISS. SPEC. @ TOURS / MIN.	FUEL RATE @ ADVERTISED HP DEBIT DE CARB. @ PUISS. SPEC.	IDLE SPEED RALENTI	ENGINE BRAKE FREIN MOTEUR	INLET ROCKER .2 mm ADMISSION CULBUTEUR EXHAUST ROCKER .8 mm ECHAPPEMENT CULBUTEUR		
12.8 L	505/1500	342 mm <sup>3</sup> /STROKE mm <sup>3</sup> /COUP	550-700 RPM	- - - -	NOx FEL NOx FNE (g/Bhp-hr) NMHC+NOx FEL NMHC+NOx FNE (g/Bhp-hr)		
THIS ENGINE CONFORMS TO U.S. EPA REGULATIONS APPLICABLE TO 2010 MODEL YEAR NEW HEAVY-DUTY ENGINES AND HAS A PRIMARY INTENDED SERVICE APPLICATION AS A HEAVY HEAVY-DUTY DIESEL ENGINE.					PARTICULATE FEL 0.00 PARTICULAIRE FNE (g/Bhp-hr)		
Ce moteur est conforme aux réglementations de l'Agence de Protection de l'Environnement des États-Unis applicables aux nouveaux moteurs diesel Heavy duty (Gamme lourde) modèle 2010. La principale application s'adresse aux usages de type gamme lourde (Heavy-heavy-duty).					EXHAUST EMISSION CONTROL SYSTEM DISPOSITIF ANTI-POLLUTION		
E.M., EC, TC, CAC, D.I., EGR, DPF, SCR					THIS ENGINE IS CERTIFIED TO OPERATE ON ULTRA LOW SULFUR DIESEL FUEL ONLY.		
					DELEGATED ASSEMBLY		LABEL NO 21338494

W2040455

### Engine Identification Label - 49 State EPA Approved Engine without California "Clean Idle"

		<b>IMPORTANT ENGINE INFORMATION</b> RENSEIGNEMENTS IMPORTANTS MOTEUR		MACK TRUCKS, INC.		VALVE LASH (JEU SOUPAPES)	
		ENGINE FAMILY: AVPTH12.8S01 FAMILLE DE MOTEURS:		ENGINE MODEL: MP8-505C MODELE MOTEUR:		SERIAL NO.: 123456 NO. SERIE:	
DISPLACEMENT CYLINDREE	ADVERTISED HP @ RPM PUISS. SPEC. @ TOURS / MIN.	FUEL RATE @ ADVERTISED HP DEBIT DE CARB. @ PUISS. SPEC.	IDLE SPEED RALENTI	ENGINE BRAKE FREIN MOTEUR	INLET ROCKER .2 mm ADMISSION CULBUTEUR EXHAUST ROCKER .8 mm ECHAPPEMENT CULBUTEUR		
12.8 L	505/1500	342 mm <sup>3</sup> /STROKE mm <sup>3</sup> /COUP	550-700 RPM	- - - -	NOx FEL NOx FNE (g/Bhp-hr) NMHC+NOx FEL NMHC+NOx FNE (g/Bhp-hr)		
THIS ENGINE CONFORMS TO U.S. EPA AND CALIFORNIA REGULATIONS APPLICABLE TO 2010 MODEL YEAR NEW HEAVY-DUTY ENGINES AND HAS A PRIMARY INTENDED SERVICE APPLICATION AS A HEAVY HEAVY-DUTY DIESEL ENGINE.					PARTICULATE FEL 0.00 PARTICULAIRE FNE (g/Bhp-hr)		
Ce moteur est conforme aux réglementations de Californie et de l'Agence de Protection de l'Environnement des États-Unis applicables aux nouveaux moteurs diesel Heavy duty (Gamme lourde) modèle 2010. La principale application s'adresse aux usages de type gamme lourde (Heavy-heavy-duty).					EXHAUST EMISSION CONTROL SYSTEM DISPOSITIF ANTI-POLLUTION		
E.M., EC, TC, CAC, D.I., EGR, DPF, SCR					THIS ENGINE IS CERTIFIED TO OPERATE ON ULTRA LOW SULFUR DIESEL FUEL ONLY.		
					DELEGATED ASSEMBLY		LABEL NO 21338549

W2040456

### Engine Identification Label - 50 State EPA Approved Engine with California "Clean Idle"

## Clean Idle Engines

The California Air Resources Board (ARB) requires that 2008 and later model year vehicles be equipped with engines having tamper-resistant software which limits the time at which the engine can idle at speeds above low idle (550–700 rpm). At speeds above low idle, and without a PTO engaged, idle time will be limited to five minutes, after which the engine will revert back to low idle. Vehicles equipped with a Clean Idle engine are identified by a label which is affixed to the lower portion of the driver's side door on cab-over models (MRU).



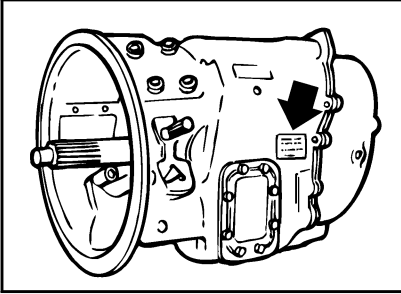
W2056289

Clean Idle Engine Label

# 8 INTRODUCTION

## Transmission Identification

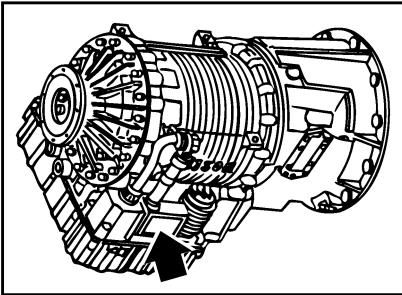
The **MACK T300 Series transmission** serial number is located on the rear left side of the main case.



**MACK T300  
Transmission  
Serial Number**

C0028947

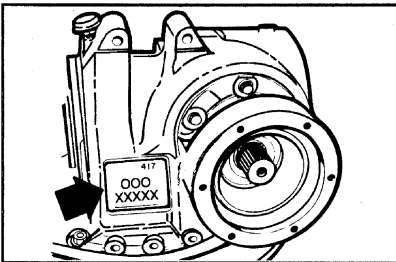
The **Allison RDS and EVS transmission** identification plate is located on the rear right side of the main case, near the lower end.



**Allison RDS  
Transmission  
Serial Number**

C0029555

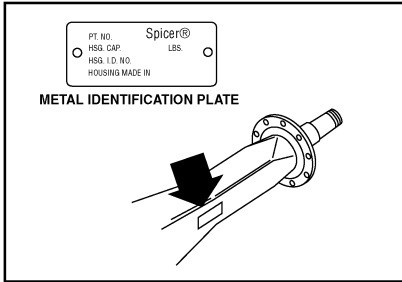
The **MACK carrier assembly** serial number is located on the front right side of the housing.



**Carrier Assembly  
Serial Number**

C0028950

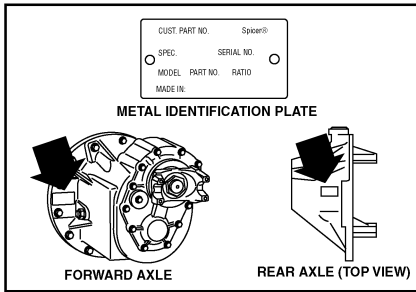
The **Eaton® Spicer® rear axle** serial number is located on the rear of the axle housing toward the carrier.



### Rear Axle Serial Number

C0028951

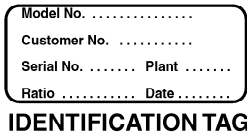
The **Eaton® Spicer® carrier assembly** serial number is located on the left side of the forward carrier, and the top of the rear carrier.



### Carrier Serial Number

C0028952

The **MERITOR rear axle** identification tag is located on the left or right rear of the rear axle housing, next to the carrier.



### Rear Axle Serial Number



C0028953