



# SERVICE BULLETIN No.1100

Circulate to listed addressees

<b>COACH MODEL</b>	: T800 w/ Cummins Celect engine T900, T2100 and C2000Series
<b>BULLETIN TYPE</b>	: Service Information
<b>MANUAL &amp; SECTION</b>	: Maintenance Manual: Chapter 3 – Drive train Spare Parts Manual: Section 6110 - Engine
<b>PARTS BOOK REVISION</b>	: No
<b>DATE</b>	: February 26th, 2002
<b>SUBJECT</b>	: <b>Engine parameter settings</b>
<b>TERMS &amp; CONDITIONS</b>	: No claims will be accepted with reference to this Bulletin.

## APPLICATION:

The service information subject of this Bulletin is applicable to coaches equipped with an electronic engine management system (Cummins CELECT/ISM/ISB/ISL – Detroit Diesel DDEC).

## DESCRIPTION:

The following Bulletin is to inform coach owners, operators and service technicians of the vehicle set-up information that has been factory programmed into the Electronic Control Module (ECM) of coaches featuring electronic fuel injection.

Whenever alterations are being made to the coach drive train gearing or the engine power output, the vehicle set-up needs to be reprogrammed.

The procedure in this Bulletin provides the requirements and steps to be taken when coach owners want the power figures, tire size and/or differential ratio to be changed.

*Service personnel: please read, initial and circulate.*

Service Manager	Parts Manager	Warranty Administrator	Workshop Foreman	Service Technician

## **PARTS:**

Reprogramming does not involve any parts change.

## **PROCEDURE:**

### **1. General engine management:**

The electronic engine management system used on Van Hool coach engines controls the timing and the amount of fuel injected into the engine.

This system also monitors several engine functions using various sensors, which send electrical signals to the Electronic Control Module (ECM). The ECM processes this information and sends high current command pulses for actuation of the injector solenoids.

The ECM also has the ability to limit the power output and temporarily shut down the engine completely in the event of a potential engine damaging condition, such as low oil pressure, low coolant level or high engine temperature. Continuously restarting of the engine for short periods of time remains possible.

The system is also self-diagnosing and monitors itself as well as all related wiring to identify faulty components and other engine related problems by illuminating the amber "ENGINE WARNING" light and/or the red "STOP ENGINE" light.

*NOTE: On T 2100 Series coaches, these messages appear on the multifunction display.*

A fault code identifying the failed component is also logged in the ECM's internal memory for later readout by maintenance personnel.

### **2. Engine parameter settings:**

- A number of operational parameters provided in the ECM (see Figures 1 and 2) can be enabled/disabled through an electronic data link. These selectable features allow the coach manufacturer to tailor the engine to the transmission and the ABS/ASR systems, and to the customer's needs and preferences.
- To keep track of set-up program changes, the programming equipment unit number is stored in the ECM memory during the reprogramming process.
- Once the reprogramming has been completed, the engine parameter settings are noted on a special chart, in duplicate (see Figures 1 and 2). One half is handed over to the owner, the other half stays with the company that has completed the programming, in this case ABC Companies Inc.
- A label showing the actual coach engine parameter settings may be found in the engine electronics or main junction box.

### **3. Drive line gearing change requirements:**

- When changes are going to be made to:

the tire size,  
the ratio of the drive pinion and ring gear assembly (drive axle ratio),  
the gearbox ratios,

- 1) the engine parameter settings should be changed using Insite/DDDL software,
- 2) new engine parameter documents should be drawn up

- 3) a new label should be provided in the engine electronics/main junction box,
- 4) a new VIN plate should be provided (for tire/rim size, tire pressure changes only),
- 5) the speedometer should be recalibrated

**CAUTION: Reprogramming of engine parameters and re-certification of the coach should ALWAYS be executed by ABC Companies Inc. personnel.**

#### **4. Power output change requirements:**

- When changes are going to be made to the engine power output:
  - 1) the engine parameter settings should be changed using Insite/DDDL software,
  - 2) a new engine data plate should be provided,
  - 3) new engine parameter documents should be drawn up
  - 4) a new label should be provided in the engine electronics/main junction box,

**CAUTION: Reprogramming of engine power and re-certification of the coach should ALWAYS be executed by ABC Companies Inc. personnel.**

*Procedure complete.*

#### **SERVICE INFORMATION:**

Service Bulletins are issued to supplement or supersede information in the Van Hool manuals. Note Service Bulletin number, date and subject on the register at the end of the relevant chapter(s). File Service Bulletin separately for future reference.

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**ENGINE PARAMETER SETTING**

VIN :		PROG. DATE :	
		Settings list	DV06000
		Ref VIN	1B 6S7 E363/B
<b>Vehicle</b>			
Idle Adjust RPM	0	VSS Type	J1939
LSS Drop RPM	125	VSS Signal	Switched
Engine/Service Brake	N/A	Tire Size (Rear/Std)	315/80R22.5 (R1)
Halt Engine Mode	Disabled	VSS Teeth	16
		Top Gear Ratio	0.64
		Axle Ratio	4.3
<b>Shift</b>			
Enable Progressive Shift	Disabled	Speed Limit	
		Set Speed Limit	Enabled
<b>Protection</b>			
Oil Pressure	Shutdown	Speed Limit (mph)	71 mph
Oil Temperature	Shutdown	Over-speed Limit (mph)	72 mph
Oil Level	N/A	Over-speed No Fuel (mph)	75 mph
Coolant Pressure	N/A	Econ & ESS	
Coolant Temperature	Shutdown	Calculation Type	Filtered
Coolant Level	Shutdown	Conversion Factor (mph/mph)	10.0
		Max Economy (mph)	7.0
<b>GO &amp; VSS</b>			
Enable Idle Shutdown	Disabled	Max Idle (mph)	5.0
Outside Temperature Disable	Disabled	ESS	N/A
VSS Drop RPM	0	ESS	N/A
VSS Min RPM	600		
VSS Max RPM	1400	Flush at startup	Flush at startup
		Flush at startup	Flush at startup
<b>Cruise Control</b>			
Enable Vehicle Speed Sensor	Enabled	J1922 Transmission enabled	enabled
Enable Cruise Control	Enabled	J1939 enabled	enabled
Enable Cruise Switch/VSS	Enabled	governors	disabled
Initial RPM	1000	CDEC Data	enabled
RPM Increment	25	Blocks	enable all data
Enable Engine Brake	Disabled		
Minimum Cruise Speed	20 mph	Limits	
Maximum Cruise Speed	71 mph	Rated RPM	2110
Enable Dynamic Braking	Disabled	Idle RPM	600
Auto Resume	Disabled	Max Idle Offset	100
		Min Idle Offset	-25
<b>VSS</b>			
Enable Vehicle Speed Sensor	Enabled	MAX LSS Drop	150
Enable Anti-Tamper	Disabled	Tram Type	Auto/J1939

Owned/Owner Representative Signature : .....

Date of Receipt : .....

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**ENGINE PARAMETER SETTING**

VIN :		PROG. DATE :	
		Settings list	DV06000
		Ref VIN	1B 6S7 E363/B
<b>Vehicle</b>			
Idle Adjust RPM	0	VSS Type	J1939
LSS Drop RPM	125	VSS Signal	Switched
Engine/Service Brake	N/A	Tire Size (Rear/Std)	315/80R22.5 (R1)
Halt Engine Mode	Disabled	VSS Teeth	16
		Top Gear Ratio	0.64
		Axle Ratio	4.3
<b>Shift</b>			
Enable Progressive Shift	Disabled	Speed Limit	
		Set Speed Limit	Enabled
<b>Protection</b>			
Oil Pressure	Shutdown	Speed Limit (mph)	71 mph
Oil Temperature	Shutdown	Over-speed Limit (mph)	72 mph
Oil Level	N/A	Over-speed No Fuel (mph)	75 mph
Coolant Pressure	N/A	Econ & ESS	
Coolant Temperature	Shutdown	Calculation Type	Filtered
Coolant Level	Shutdown	Conversion Factor (mph/mph)	10.0
		Max Economy (mph)	7.0
<b>GO &amp; VSS</b>			
Enable Idle Shutdown	Disabled	Max Idle (mph)	5.0
Outside Temperature Disable	Disabled	ESS	N/A
VSS Drop RPM	0	ESS	N/A
VSS Min RPM	600		
VSS Max RPM	1400	Flush at startup	Flush at startup
		Flush at startup	Flush at startup
<b>Cruise Control</b>			
Enable Vehicle Speed Sensor	Enabled	J1922 Transmission enabled	enabled
Enable Cruise Control	Enabled	J1939 enabled	enabled
Enable Cruise Switch/VSS	Enabled	governors	disabled
Initial RPM	1000	CDEC Data	enabled
RPM Increment	25	Blocks	enable all data
Enable Engine Brake	Disabled		
Minimum Cruise Speed	20 mph	Limits	
Maximum Cruise Speed	71 mph	Rated RPM	2110
Enable Dynamic Braking	Disabled	Idle RPM	600
Auto Resume	Disabled	Max Idle Offset	100
		Min Idle Offset	-25
<b>VSS</b>			
Enable Vehicle Speed Sensor	Enabled	MAX LSS Drop	150
Enable Anti-Tamper	Disabled	Tram Type	Auto/J1939

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**ENGINE PARAMETER SETTING**

VIN :		PROG. DATE :	
Cummins ISM 450 Hp		Settings Int Ref: V#	D/0901/2001 10 715 583/3A
Features		Vehicle Setup 3	
Engine Protect. Restart Inhibit	Disabled	Accelerator Type	Automatic
Engine Protection Shutdown	Enabled	Switch Usage	Set/Coast
Starter Lockout	Disabled	Max. Switched Engine Speed	2100 rpm
Electr. Air Comp. Governor	Disabled	Engine Brake Control	
VSS Anti-Tamper	Disabled	Service Brake Activation	Disabled
Water In Fuel Sensor	Disabled	Cruise Control Activation	Disabled
Remote Accelerator	Disabled	Engine Brake Rate Limit	Disabled
Vehicle Anti-Theft	Disabled	Fan Features	
Cruise Control		Cruise Control Enabled	Enabled
Cruise Control Auto-Resume	Disabled	Fan Contr. Veh. Speed Contr.	Disabled
Save Set Speed	Enabled	Fan Control Engine Braking	Disabled
Max. Cruise Control Speed	71 mph	Fan Type	On/Off
CC Governor Tail, Lower Droop		Fan Drive Ratio	1.19
CC Governor Tail, Upper Droop		Max. Engine Speed	2000 rpm
Speed Delta Max. Eng. Brake	6 mph	Max. Idle Speed	1400 rpm
Speed Delta Min. Eng. Brake	0 mph	Max. PTO Eng. Speed	850 rpm
Idle Control		Idle Speed Adjustment	Enabled
Idle Engine Speed	900 rpm	Idle Shutdown Enabled	Disabled
Idle Shutdown Override	Disabled	Shutdown in PTO	Enabled
Shutdown in PTO	Enabled	Ambient Temperature Override	Disabled
Ambient Temperature Override	Disabled	PTO 2 Options	
Vehicle Setup 1		PTO Accelerator Override	Disabled
Max. Speed Without VSS	1800 rpm	PTO Service Brake Override	Enabled
Accel. Max. Vehicle Speed	71 mph	PTO Clutch Override	Disabled
Road Speed Gov. Lower Droop	2 mph	PTO Zero VSS Limit	Disabled
Road Speed Gov. Upper Droop	0 mph	Alternate PTO	Disabled
Gear-down Protection	Disabled	Remote PTO	
Vehicle Setup 2		Remote PTO Set Speed 1	1000 rpm
Vehicle Speed Sensor	Output/Talk	OEM Engine Perform. Blocking Table	
Brake/Idle Ratio	4.3	Engine Performance Rating	FR 2571
Tire Revolutions	491/rev	Governed Engine Speed	2100 rpm
No. Of Transm. Gear Teeth	18	Power (Low/High)	450 HP
Transmission Type	Automatic	Peak Torque (Low/High)	1450 ft-lb
Top Transmission Gear Ratio	0.64		

Owner/Owner Representative Signature : .....

Date of Receipt : .....

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**ENGINE PARAMETER SETTING**

VIN :		PROG. DATE :	
Cummins ISM 450 Hp		Settings Int Ref: V#	D/0901/2001 10 715 583/3A
Features		Vehicle Setup 3	
Engine Protect. Restart Inhibit	Disabled	Accelerator Type	Automatic
Engine Protection Shutdown	Enabled	Switch Usage	Set/Coast
Starter Lockout	Disabled	Max. Switched Engine Speed	2100 rpm
Electr. Air Comp. Governor	Disabled	Engine Brake Control	
VSS Anti-Tamper	Disabled	Service Brake Activation	Disabled
Water In Fuel Sensor	Disabled	Cruise Control Activation	Disabled
Remote Accelerator	Disabled	Engine Brake Rate Limit	Disabled
Vehicle Anti-Theft	Disabled	Fan Features	
Cruise Control		Cruise Control Enabled	Enabled
Cruise Control Auto-Resume	Disabled	Fan Contr. Veh. Speed Contr.	Disabled
Save Set Speed	Enabled	Fan Control Engine Braking	Disabled
Max. Cruise Control Speed	71 mph	Fan Type	On/Off
CC Governor Tail, Lower Droop		Fan Drive Ratio	1.19
CC Governor Tail, Upper Droop		Max. Engine Speed	2000 rpm
Speed Delta Max. Eng. Brake	6 mph	Max. Idle Speed	1400 rpm
Speed Delta Min. Eng. Brake	0 mph	Max. PTO Eng. Speed	850 rpm
Idle Control		Idle Speed Adjustment	Enabled
Idle Engine Speed	900 rpm	Idle Shutdown Enabled	Disabled
Idle Shutdown Override	Disabled	Shutdown in PTO	Enabled
Shutdown in PTO	Enabled	Ambient Temperature Override	Disabled
Ambient Temperature Override	Disabled	PTO 2 Options	
Vehicle Setup 1		PTO Accelerator Override	Disabled
Max. Speed Without VSS	1800 rpm	PTO Service Brake Override	Enabled
Accel. Max. Vehicle Speed	71 mph	PTO Clutch Override	Disabled
Road Speed Gov. Lower Droop	2 mph	PTO Zero VSS Limit	Disabled
Road Speed Gov. Upper Droop	0 mph	Alternate PTO	Disabled
Gear-down Protection	Disabled	Remote PTO	
Vehicle Setup 2		Remote PTO Set Speed 1	1000 rpm
Vehicle Speed Sensor	Output/Talk	OEM Engine Perform. Blocking Table	
Brake/Idle Ratio	4.3	Engine Performance Rating	FR 2571
Tire Revolutions	491/rev	Governed Engine Speed	2100 rpm
No. Of Transm. Gear Teeth	18	Power (Low/High)	450 HP
Transmission Type	Automatic	Peak Torque (Low/High)	1450 ft-lb
Top Transmission Gear Ratio	0.64		

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