

DIMENSIONS AND WEIGHTS 152

CAPACITIES 152

FUEL TYPE 152

 BIODIESEL FUELS 152

WHEELS AND TIRES 153

 RECOMMENDED TIRE INFLATION PRESSURE AT MAXIMUM COLD LOAD 153

BELTS..... 153

ENGINE..... 153

ALLISON TRANSMISSION..... 153

 GEAR RATIOS 154

VOLVO I-SHIFT TRANSMISSION 154

 GEAR RATIOS 154

PROPELLER SHAFT 154

BRAKES 154

 BRAKE CHAMBER EFFECTIVE AREA 154

AIR SYSTEM 154

ANTILOCK BRAKING SYSTEM (ABS)..... 154

 TROUBLESHOOTING AND TESTING 154

AUTOMATIC TRACTION CONTROL (ATC) – ELECTRONIC STABILITY CONTROL (ESC) 154

STEERING..... 155

ELECTRICAL SYSTEM..... 155

SUSPENSION..... 155

 INDEPENDENT FRONT SUSPENSION 155

 DRIVE AXLE 155

 TAG AXLE 155

ALIGNMENT SPECIFICATIONS 155

 INDEPENDENT FRONT SUSPENSION 156

 DRIVE AXLE 156

 TAG AXLE 156

COOLING SYSTEM..... 156

FUEL SYSTEM 156

EXHAUST SYSTEM 156

HEATING AND AIR CONDITIONING 157

 SMALL HVAC SYSTEM 157

 COMPRESSOR (for small HVAC system) 157

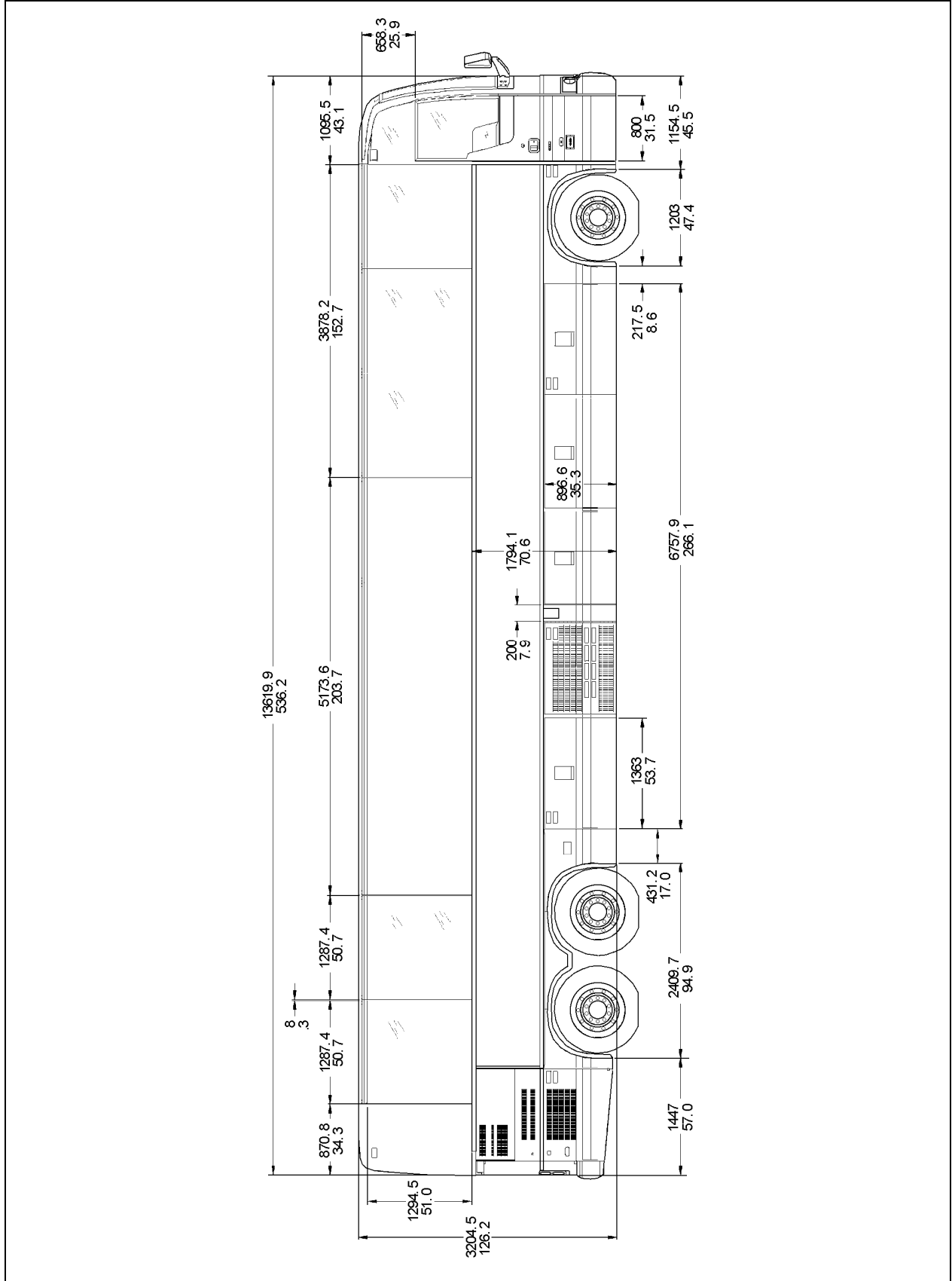
 CENTRAL HVAC SYSTEM 157

 COMPRESSOR (for central HVAC system) 157

OIL SPECIFICATIONS..... 157

150 Technical Information

ENGINE.....	157
ALLISON AUTOMATIC TRANSMISSION.....	157
I-SHIFT TRANSMISSION.....	157
DIFFERENTIAL.....	157
FAN RIGHT ANGLE GEARBOX.....	158
POWER STEERING RESERVOIR.....	158
PLATES AND CERTIFICATION	158
SAFETY CERTIFICATION	158
DOT CERTIFICATION PLATE	159
EPA ENGINE LABEL	159
VEHICLE IDENTIFICATION NUMBER (VIN)	159
COACH FINAL RECORD	159



MTH XLII-45E OVERALL DIMENSIONS

DIMENSIONS AND WEIGHTS	X3-45 VIP Le Mirage XLII	
	Overall length (including bumpers)	45' (13,7 m)
Overall width	102" (2,59 m)	
Overall height	148 3/4" (3,78 m)	
Wheelbase (center of front axle to center of drive axle)	X3-45 VIP: 314" (7976 mm) Le Mirage XLII: 339" (8611 mm)	
Floor height from ground	48 1/2" (1,23 m)	
Ground clearance	11" (280 mm)	
Step height from ground	15" (380 mm)	
Step height (other steps)	7" (178 mm)	
Headroom	89" (2261 mm)	
Entrance door opening width	30" (762 mm)	
Front overhang	68 3/4" (1746 mm)	
Rear overhang	X3-45 VIP: 107 3/4" (2736 mm) Le Mirage XLII: 82 3/4" (2102 mm)	
Front track	85.9" (2,18 m)	
Drive track	76.7" (1,95 m)	
Rear track	83.6" (2,12 m)	
Turning circle radius (exterior front corner)	X3-45 VIP: 41'-10" (12751 mm) Le Mirage XLII: 44'-3" (13487 mm)	
	X3-45 VIP	Le Mirage XLII
Curb weight (before conversion)	N/A	N/A
Gross Vehicle Weight Rating (G.V.W.R.)	51,400 lb (22 861 kg)	54,500 lb (24 721 kg)
Front axle Gross Axle Weight Rating (G.A.W.R.)	18,000 lb (8 165 kg)	18,000 lb (8 165 kg)
Drive axle (G.A.W.R.)	21,400 lb (9 253 kg)	22,500 lb (10 206 kg)
Tag axle (G.A.W.R.)	12,000 lb (5 443 kg)	14,000 lb (6 350 kg)


The Gross Vehicle Weight Rating (G.V.W.R.) and the Gross Axle Weight Rating (G.A.W.R.) for front, drive and tag axles are listed on a

certification plate located on the L.H. control panel in driver's section.

CAPACITIES	Le Mirage XLII	X3-45 VIP
Volvo D13 Engine oil (in crankcase)	38 U.S. qrts (36 l)	
Fuel tank (legal capacity equal to 95% of volume)	208 U.S. gal. (787 l)	
Cooling system	24 U.S. gal. (91 l)	
Allison Transmission (does not include external circuit)	6 U.S. gal. (23 l) 6.9 U.S. gal. (26 l) with retarder	
I-Shift transmission	16 U.S. qts (15 l)	
Differential oil	20 U.S. qts (18,7 l)	
Power steering reservoir	4.0 U.S. qts (3,8 l)	
A/C compressor oil	4.5 U.S. qts (4,3 l)	
Windshield washer reservoir	5.3 U.S. gal. (20 l)	
Refrigerant	24.1 lb (11 kg)	

FUEL TYPE

Diesel engines for 2007 and later model year vehicles are designed to operate only with **Ultra Low Sulfur Diesel** (ULSD) fuel, which can contain no more than 15 ppm sulfur.

	CAUTION
<p>ULSD fuel is necessary to avoid fouling the engine's Exhaust AfterTreatment System. Use of fuel other than ULSD will reduce the efficiency and durability of the engine.</p>	

BIODIESEL FUELS

ULSD-B5 biodiesel may be used. B5 tells you the percentage of biodiesel mixed in with ULSD. B5 is 5% biodiesel and 95% ULSD.

Fuel used must meet engine manufacturer's specification for biodiesel fuel. Concerning the use of biodiesel with Volvo D13 engines, refer to Volvo's specifications.

Biodiesel fuels are alkyl esters of long chain fatty acids derived from renewable resources. Biodiesel fuels made from soybean or rapeseed oil through the proper transesterification reaction process are recommended. Other feedstock

source of biodiesel fuels such as animal fat and used cooking oils are not recommended. Biodiesel fuels meeting ASTM D6751 specification and from BQ-9000 accredited producer, prior to blending can be mixed up to 5% maximum by volume in petroleum diesel fuel. The resulting mixture must meet the fuel properties of ASTM D975 specification. Failures attributed to the use of biodiesel fuel will not be covered by Volvo or Prevost product warranty. Also, any engine performance problem related to the use of biodiesel fuel would not be recognized nor considered as Volvo or Prevost's responsibility.

WHEELS AND TIRES

- Drive Axle Aluminum forged wheels ...9" X 22½"
- Drive Axle Super Single Aluminum forged wheels14" X 22½"
- Drive Axle Tires315/80 R 22½"
- Tag & Front Axle Wheels 10½" X 22½"
- Tag & Front Axle Tires365/70 R 22½"

RECOMMENDED TIRE INFLATION PRESSURE AT MAXIMUM COLD LOAD

The recommended tire inflation pressures are given in the applicable documents supplied with the vehicle. In addition, maximum cold tire inflation pressures are listed on the Department of Transport's certification plate, affixed on the panel behind the driver's seat. For special tire selection, a "PREVOST COACH SPECIAL SPECIFICATION" chart is supplied with the vehicle and is affixed next to the DOT certification plate, located on the left wall close to the driver's seat.

NOTE
 Bus Shells vehicles, before being converted, are not at their maximum weight and tire pressures are adjusted at lower level than the maximum allowed appearing on the DOT plate. Tires pressure must be re-adjusted once converted.

WARNING
 Special tire selection may lower maximum allowable speed limit, even below posted speed limit. For maximum safety, check with tire manufacturer.

Vehicles equipped with TPMS: The TPMS target pressures are factory set to equal the prevailing

tire pressure at delivery time. When tire pressures are increased to account for higher vehicle weight, the TPMS set point need to be increased accordingly.

CAUTION
 These tire pressures are established in accordance with the maximum allowable load on each axle. A lower pressure is recommended if the axle load is less than the above specifications. Weigh vehicle fully loaded and pressurize according to tire manufacturer's recommendations.
 For non standard tire and wheel specifications, see Prévost tire pressure tabulation in "Coach Final Record" or special specification chart affixed next to the DOT certification plate.

BELTS

Use	Model	Qty
Cooling fan drive belt	Multi V-14 Rib 14PK2526	1
A/C system 05G compressor	V Belt BX-100 9212-0404	2
A/C small system Sanden compressor	V-Belt A-41 9012-2041	2
Alternator (twin Bosch)	Multi-V-8 Rib 8PK1935	1

NOTE
Belts specifications may vary. For proper belt selection, always consult your vehicle Coach Final Record.

ENGINE

Volvo D13 engine displacing 12.8 liters. The engine is an inline six cylinder, four stroke, turbocharged, air to air charge cooled, diesel engine with SOHC with 4 valves per cylinder.
 Power 435 HP (324 kW)
 Torque.....1,700 lbf•ft (2304 Nm)
 Power 500 HP (373 kW)
 Torque.....1,770 lbf•ft (2400 Nm)
 Recom. cruise speed range 1400-1800rpm
 Full dress, dry weight 2519 lb

ALLISON TRANSMISSION

Allison Transmission MH4000 electronically controlled six speed automatic transmission (MH4000R with the optional output retarder).

GEAR RATIOS

1 st	3.510
2 nd	1.906
3 rd	1.429
4 th	1.000
5 th	0.737
6 th	0.639
Reverse	4.801
Converter.....	1.9
Differential ratio	4.30
Differential ratio (optional)	3.91
Differential ratio (optional)	4.10
Differential ratio (optional)	4.56
Differential ratio (optional)	4.88

VOLVO I-SHIFT TRANSMISSION

Technologically advanced twelve speed automated mechanical transmission

GEAR RATIOS

1 st	14.94
2 nd	11.73
3 rd	9.04
4 th	7.09
5 th	5.54
6 th	4.35
7 th	3.44
8 th	2.70
9 th	2.08
10 th	1.63
11 th	1.27
12 th	1.00
Reverse 1 st	17.48
Reverse 2 nd	13.73
Differential ratio	2.50
Maximum input torque.....	1850 Lb-Ft (2500 Nm)

PROPELLER SHAFT

Hayes-Dana SPL250 type tubular shafts. It is provided with heavy-duty universal joints.

BRAKES

The features of the braking system include a dual system where the front and rear circuits are completely independent from each other. The brakes are Knorr air operated disc type brakes with ABS and automatic slack adjusters on front drive and tag axles. Model 24/24 spring brakes on drive axle provide emergency and parking

brakes. Emergency brake application will be automatic if pressure drops below 40 psi. At 60 psi a warning light and buzzer will come on so the driver can bring the vehicle to a safe stop simply by a conventional application of the foot brake pedal.

BRAKE CHAMBER EFFECTIVE AREA:

Front axle	24 in ² (service)
Drive axle	24 in ² (service)
.....	24 in ² (emergency/parking)
Tag axle	14-16 in ² (service)

AIR SYSTEM

Compressed air is provided by a twin cylinder, 31.8 cfm Wabco, gear-driven, water-cooled and engine oil lubricated air compressor.

ANTI-LOCK BRAKING SYSTEM (ABS)

The anti-lock braking system has one Electronic Control Unit (ECU) controlling a four channel system. One wheel slip sensor is mounted at each front axle and drive axle wheel. The Tag axle wheels are slave to the drive axle wheels.

The Electronic Control Unit (ECU) is maintenance free. Its operating voltage is 24 ± 6 volts DC. The thermal operating range for the ECM is from -40 to 167°F (-40 to 75°C).

The solenoid control valves are maintenance free. Their operating voltage is 24 (+4.8, -2.4) volts DC. The rated current draw is 1.65 amps. The thermal operating range of the solenoid control valves is from -40 to 176°F (-40 to 80°C).

TROUBLESHOOTING AND TESTING

For troubleshooting and testing of the vehicle's anti-lock braking system, refer to Meritor WABCO Maintenance Manual: "Anti-Lock Brake Systems For Trucks, Tractors and Buses" or use dashboard Message Center Display (MCD) Diagnostic Mode under ECU Diagnostic: "ABS".


AUTOMATIC TRACTION CONTROL (ATC) – ELECTRONIC STABILITY CONTROL (ESC)


In addition to the ABS function, vehicle may be equipped with an advanced model of Bendix EC-60 controller to provide an **Automatic Traction Control (ATC)** feature. Bendix ATC can improve vehicle traction during acceleration, and

lateral stability while accelerating through curves. ATC utilizes **Engine Torque Limiting (ETL)** where the ECU communicates with the engine's controller and/or **Differential Braking (DB)** where individual wheel brake applications are used to improve vehicle traction.

The EC-60 advanced model controller also provides ABS-based stability features referred to as **ESC® Electronic Stability Control**.

Refer to Maintenance Manual, Section 12: Brake and Air System for more information on this system.

 CAUTION
<p>Even with ESC-equipped vehicles, the driver remains responsible for ensuring vehicle stability during operation.</p>

 DANGER
<p>ESC may reduce the vehicle speed automatically.</p> <p>ESC can make the vehicle decelerate automatically. ESC can slow the vehicle with or without the operator applying the brake, and even when the throttle is being applied.</p>

STEERING

- Tilt steering wheel and telescopic steering column
- Volvo hydraulic pump gear driven from engine drive.
- Hydraulic reservoir and dipstick accessible from engine compartment.
- Integral hydraulic assisted steering gear
- System pressure: 2175 psi (15 000 kPa)

ELECTRICAL SYSTEM

- 24 volt, negative ground
- 12 volt exterior lighting
- Two 28 volt, 120 amp, self-regulated, belt-driven, air-cooled HD 10 Bosh alternators.
- Four 12 volt, group 31 format maintenance-free batteries connected in series/parallel. Cold cranking capacity is 950 amps (each

battery) with a reserve capacity of 195 minutes.

- 100 amp battery equalizer.
- 12 volt, 145 amp, air-cooled, belt-driven, additional alternator (optional).

SUSPENSION

Goodyear rolling lobe type air springs (bellows) are used throughout.

INDEPENDENT FRONT SUSPENSION

- 2 Bellows (14.5") for a G.A.W.R. of 18,000 lb;
- 2 Shock absorbers;
- 2 Upper V-Links;
- 2 Lower V-Links;
- 2 Torque rods;
- 2 Steering Levers;
- 1 Leveling valve;
- 1 sway bar (1¾" diameter).

DRIVE AXLE

- 4 Bellows (11");
- 4 Shock absorbers;
- 3 Radius rods;
- 1 Panhard rod;
- 2 Leveling valves.

TAG AXLE

- 2 Bellows (11");
- 2 Shock absorbers;
- 3 Radius rods;
- 1 Lateral Panhard rod.

ALIGNMENT SPECIFICATIONS

Use wheel alignment systems which work with angle measurements only, such as Josam or Hunter systems. Alignment specifications are listed in the following tables:

INDEPENDENT FRONT SUSPENSION						
Load	Minimum value		Nominal value		Maximum value	
	Non-converted	Converted	Non-converted	Converted	Non-converted	Converted
Right camber (degrees)	0.2	-0.150	0.35	0.0	0.55	0.200
Left camber (degrees)	0.2	-0.150	0.35	0.0	0.55	0.200
Right caster (degrees)	2.55		2.8		3.05	
Left caster (degrees)	2.55		2.8		3.05	
Total toe-in (degrees)	0.08		0.10		0.12	

DRIVE AXLE			
	Minimum value	Nominal value	Maximum value
Thrust angle (degrees)	-0.04	0	0.04

TAG AXLE			
	Minimum value	Nominal value	Maximum value
Parallelism (degrees)	-0.02	0	0.02

COOLING SYSTEM

- Copper fin radiator and aluminum charge air cooler arranged one behind the other, Valeo made.
- 3 speed fan clutch ECU controlled.
- Rubber insulated from the body.
- Expansion tank above radiator and remote mounted.
- System pressure 14 psi.
- One (1) 185° F thermostat.
- System capacity 24 us gal (DDC S60).
- Coolant filter.
- Radiator fan: 34 inches (WE) or 36 inches (W5) fan, belt and shaft driven.

FUEL SYSTEM

208 US gallons polyethylene polyethylene equipped with:

- Anti-spill device.
- Safety filler cap, providing filling access on R.H. side of vehicle.
- Pressure relief valve.
- Electric fuel gage.
- Fuel cooler.
- Low level signal at 26 us gallon/98 liters.
- Primary filter 25 microns (standard).
- Fuel pro 382 filter available as an option as a primary filter.
- Secondary filter 3 to 5 microns.
- Shut-off valve on fuel supply line.

EXHAUST SYSTEM

One all stainless steel exhaust system including:

- Catalytic converter to reduce NOx.
- FleetGuard assembly made of a DOC (Diesel Oxidation Catalyst and a DPF (Diesel Particulate Filter). Noise, vibration and heat insulated. This assembly is mounted to the bus structure and is accessible through an exterior access door.
- Tail pipe diffuser and rain deviation device.
- Exhaust pipe with Insulation and a flexible section.
- Exhaust to rear left hand top of rear cap.

HEATING AND AIR CONDITIONING

Two air conditioning systems are available: the large capacity (central HVAC system) or the small capacity A/C (small HVAC system). Vehicles equipped with the large capacity A/C benefit from a combination heating and cooling system that provides adequate capacity of conditioned and filtered air for all climatic conditions. Fresh air is drawn into the system from the left (driver's) side of the vehicle. Return air is taken from the middle of the vehicle. The driver's heater and defogger are controlled separately from the central unit. An air mixture selector enables air to be drawn into the system from outside the vehicle or recirculated. Driver's air provides cooling for the driver's area only, maximizing available baggage space for other uses. The small capacity A/C enables cooling the driver's area only.

SMALL HVAC SYSTEM	
Air conditioning capacity	2 tons
Refrigerant type	134a
Air flow	450 cfm (12,7 m ³ /min)

COMPRESSOR (For small HVAC system)	
Number of cylinders	7
Operating speed	700 to 6 000 rpm
Oil capacity	6.0 U.S. oz (0,18 l)
Approved oil	SP-20 (PAG)

CENTRAL HVAC SYSTEM	
Air conditioning capacity	7.5 tons
Refrigerant type	134a
Heating capacity	152 000 Btu/h
Air flow	2 600 cfm (73,6 m ³ /min)

COMPRESSOR (For central HVAC system)	
Number of cylinders	6
Operating speed	400 to 2 200 rpm (1,750 rpm, nominal)
Minimum speed for lubrication	400 rpm
Oil capacity	4.5 U.S. qts (4,3 l)
Approved oil	Castrol SW-68 (POE)

NOTE

The previously mentioned oils are suitable for use with reciprocating compressors using refrigerant R-134a and with evaporator temperatures above -40°F (-40°C).

OIL SPECIFICATIONS

ENGINE

Use SAE 15W-40 meeting API classification CJ-4 is required in 2007 diesel engines.

The Volvo D13 engine oil specification is designated EO-O Premium Plus (or VDS-4). EO-O Premium Plus oils exceed the new API service category CJ-4.



CAUTION

CJ-4 contains less than 1% ash which is key to achieving maximum diesel particulate filter cleaning intervals. Use of high ash engine oils will reduce the cleaning interval on the Diesel Particulate Filter (DPF). DPF regenerates the combustible soot, but the ash (a product of the oil lubricant package) slowly accumulates in the channels of the DPF.

ALLISON AUTOMATIC TRANSMISSION

Allison Transmission recommends the following fluids:

- Castrol TranSynd™ or TES-295 specification equivalent fluid;
- Dexron-III® automatic transmission fluid;

I-SHIFT TRANSMISSION

The I-Shift transmission must be filled with Castrol Syntrans grade 75W-85 oil.

DIFFERENTIAL

Multigrade gear oil meeting MIL-PRF-2105E: 85W/140 is recommended for use in drive axle. This lubricant performs well over a broad temperature range, providing good gear and bearing protection in a variety of climates. If temperature drops below 10°F (-12°C), 80W/90 should be used, and below -15°F (-26°C), 75W/90 should be used. In extreme conditions or for better performance, full synthetic gear oil can be used.

FAN RIGHT ANGLE GEARBOX

Use Synthetic Gear Lubricant SAE 75W-90.

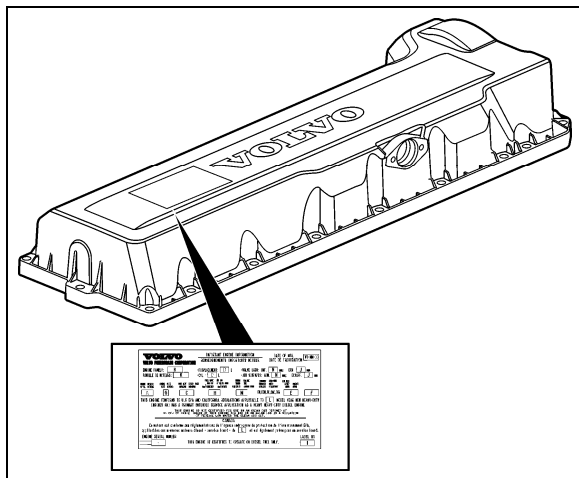
POWER STEERING RESERVOIR

Use Automatic Transmission Fluid (ATF) Dexron-IIE or Dexron-III for this system.

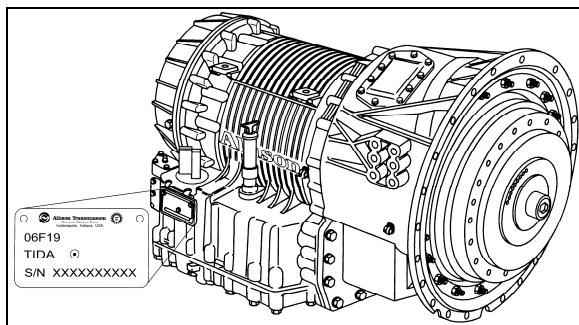
PLATES AND CERTIFICATION

The main components of the vehicle such as engine, transmission, axles and chassis are identified by different serial numbers. It may be necessary to locate these numbers for warranty purposes.

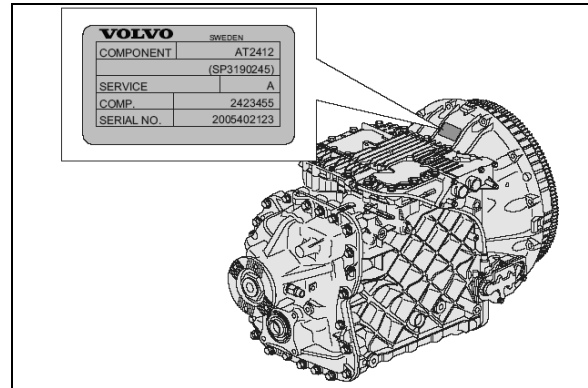
The engine data plate is located on the rocker cover. The engine serial and model number and a list of the optional engine equipment are written on this plate. Refer to this information when ordering replacement parts. Also the engine data plate certifies that the engine conforms to federal and any state exhaust emissions regulations.



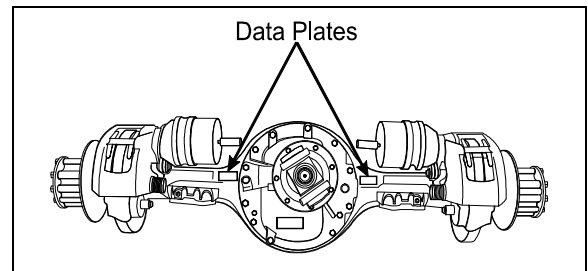
VOLVO D13 ENGINE DATA PLATE 00052



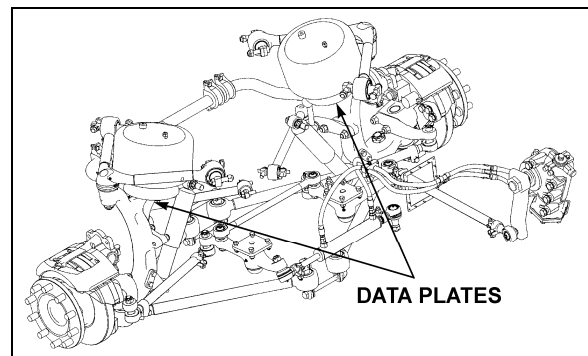
TRANSMISSION DATA PLATE 07139



I-SHIFT TRANSMISSION 00040



DRIVE AXLE 11019



INDEPENDENT FRONT SUSPENSION 16176



SAFETY CERTIFICATION

Vehicle components meet specifications and standards as follows:

- Material and parts conform to ASTM and/or SAE standards in effect at the time of manufacture.
- All factory-installed interior materials meet FMVSS 302 for fire resistance.
- Certified according to Provincial, State and Federal Safety standards (Canadian and US) BMCSS, FMVSS and CMVSS.
- Other applicable certification labels are affixed to the component.

DOT CERTIFICATION PLATE

This certifies that vehicles manufactured by Prévost Car Inc. comply with all Federal Motor Vehicle Safety Standards at the time of manufacture. Information such as gross vehicle weight rating and tire pressure is also marked on this plate. The DOT Certification plate is affixed to L.H. control panel.

		PREVOST			
INCOMPLETE VEHICLE MANUFACTURED BY : PREVOST CAR INC. / VEHICULE INCOMPLET FABRIQUE PAR : STE-CLAIRE, QUE.					
DATE OF MFG. / DATE DE FAB. :					
G.V.W.R. / P.N.B.V. : 24721 KG. (54500 LBS).					
AXLES / ESSELX	G.A.W.R. / P.N.B.E.	TIRES / PNEUS	RIMS / JANTES	COLD INFLATION PRESS. / FROID KPA (PSI)	SINGLE OR DUAL SIMPLE OU DOUBLE
FRONT / AVANT :	8165 (18000)	365/70R22.5 (L)	22.5X10.5	724 (105)	S
INT. DIFF. :	10206 (22500)	315/80R22.5 (L)	22.5X9 (OUT) / 22.5X8.25 (IN)	655 (95)	D
REAR / ARRIERE :	6350 (14000)	365/70R22.5 (L)	22.5X10.5	552 (80)	S
THIS INCOMPLETE VEHICLE CONFORMS TO ALL APPLICABLE U.S. FEDERAL MOTOR VEHICLE SAFETY STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE. IF COMPLETED IN ACCORDANCE WITH THE INSTRUCTIONS OF INCOMPLETE VEHICLE DOCUMENTS FURNISHED PURSUANT TO CFR PART 568, CONFORMITY TO THE OTHER SAFETY STANDARDS IS NOT SUBSTANTIALLY AFFECTED BY THE DESIGN OF THE INCOMPLETE VEHICLE.					
VEHICLE IDENTIFICATION NO. / NO. IDENTIFICATION VEHICULE :					
#405444					

DOT CERTIFICATION PLATE 00016

The Vehicle Identification Number is stamped on a plate located on the windshield frame pillar (driver's side). The VIN is visible from the outside of the vehicle. Make sure the correct vehicle identification number is given when ordering replacement parts. Using the VIN when ordering parts will facilitate processing.

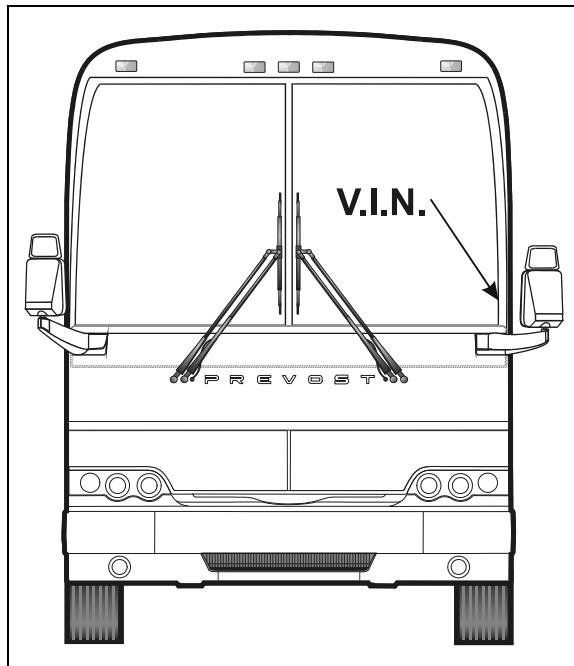
NOTE

Record the VIN in the vehicle documentation and keep with company records. The VIN will normally be used for vehicle registration and for obtaining vehicle insurance coverage.

COACH FINAL RECORD

The Coach Final Record is a record of all data pertaining to the assembly of the vehicle. This record is shipped to the new customer via a courier company. Retain this record in the company records office for reference and safe-keeping.

VEHICLE IDENTIFICATION NUMBER (VIN)



VEHICLE IDENTIFICATION NUMBER 00017