

(2:431)

RANGE OF USE

F 10 and F 12 trucks are used for all types of heavy transport; long-distance, forestry and construction. By far the most dominating range of use for these vehicles consists of heavy long-distance haulage. For this reason the cab has been specially adapted to long-distance work and high priority given to driver environment. The cab can also be specified more specifically for forestry or construction site work. For these two applications, the bumper is moved up 90 mm (and moved forward 130 mm) to give higher ground clearance. A mock-leather engine casing cover is available as an optional extra.

A considerable proportion of long-distance transport today is carried out with a gross laden weight which is considerably less than the maximum permissible train weight, this depending on the fact that the goods are bulky. As a result, the cab must not be unnecessarily large. F 10 and F 12 trucks can be provided with either a long or a short cab.



Sleeper Cab

LH

Feature	Benefit
<ul style="list-style-type: none"> ● All-steel cab, impact tested ● Cab tilting angle 60°, revealing entire front end ● Unique surface treatment process, four coats 	<ul style="list-style-type: none"> ● Driver safety ● Service kindly ● High quality level, excellent resistance to corrosion, durable finish
<ul style="list-style-type: none"> ● Well insulated, dense bitumen material ● Big windows, minimum of blind angles, three windscreen wipers ● High capacity heating and ventilation system, integrated air conditioning 	<ul style="list-style-type: none"> ● Low noise level ● Excellent visibility
<ul style="list-style-type: none"> ● Air conditioning system A/C <ul style="list-style-type: none"> – integrated temperature control by three sensors – shorter operating times for AC-compressor 	<ul style="list-style-type: none"> ● Fast and efficient, draught-free ideal in-cab temperature. ● Ideal in-cab climate with choice of temperature between 17° and 23° <ul style="list-style-type: none"> – fast settings and response, ±1°C accuracy – long service life, low fuel consumption
<ul style="list-style-type: none"> ● Carefully balanced suspension system ● Sprung driving seat ● Spacious and well appointed interior ● Excellent entry/exit ● Door opening angle 90° 	<ul style="list-style-type: none"> ● First class driver comfort
<ul style="list-style-type: none"> ● Volvo-designed seat programme featuring: <ul style="list-style-type: none"> – dished seat and backrest – full range of adjustment on seat, backrest, head restraint and springing – air suspension with special lumbar supports 	<ul style="list-style-type: none"> ● Good lateral support even when truck sways <ul style="list-style-type: none"> – seating comfort to suit any size, shape or weight – exclusive seating for non-stop comfort.
<ul style="list-style-type: none"> ● Sleeper cab with one or two bunks optional ● Short cab optional 	<ul style="list-style-type: none"> ● Specially adapted for intercontinental work ● Ideal when max load space is essential and full sleeper facilities are not needed
<ul style="list-style-type: none"> ● Short (day) cab available with bunk kit 	<ul style="list-style-type: none"> ● Adequate rest facilities without spoiling seating comfort. ● Perfect for inter-regional high-bulk loads.
<ul style="list-style-type: none"> ● Electronic speedometer and tachograph 	<ul style="list-style-type: none"> ● Reliable, long service life. No disturbance to other instruments. ● Easy calibration. ● Fewer standstills.
<ul style="list-style-type: none"> ● Higher bumper optional. 	<ul style="list-style-type: none"> ● Giving higher ground clearance for forestry and construction site work.

F 10 and F 12 Cab

The **short cab** is used for a variety of purposes including construction site work and heavy distribution of bulk products etc. Volume-intensive haulage in inter-regional service also necessitates short cab in order to give as large a load area as possible. (The short cab gives a 300 mm longer load platform than the long cab.) These requirements must of course be combined with the same high Volvo standards on driver comforts and resting facilities.

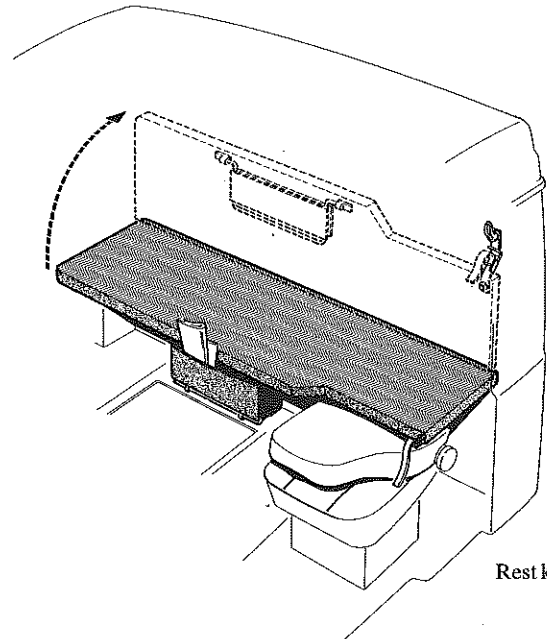
The short cab version is also available with a rest kit which does not intrude on the sitting comfort. The rest kit consists of a folding standard bunk with a cutout for the driving seat. Railed curtains are also included. An extra storage pocket for magazines and oddments is incorporated in the support bracket of the bunk.

The **long cab** (sleeper) is specially designed to satisfy the requirements made on a long-distance cab used, for example, in inter-continental services. In addition to excellent driver comfort and roominess, the long cab provides very good overnight facilities. It is fitted with a railed curtain which can be pulled across to cover the side windows and windscreen.

The Volvo cab programme also includes an extra high sleeper cab, the **Globetrotter cab** for superlong-distance routes. See separate description (page 2:432) where a description of the extra equipment available for the F 10/12 cabs is also given.



Short cab KH



Rest kit

DESCRIPTION

Exterior: The cab naturally gives the vehicle its character. It has large glazed areas facing forwards and in the doors but unnecessarily large glazed areas on the sides have been avoided in order to provided the most effective insulation possible. The engine air intake is located at the rear edge of the cab above the cab roof.

The light-alloy bumper is extended far downwards in order to meet other vehicles bumper to bumper.

Spoilers in the front edge of the cab regulate the slip-stream so as to minimize the amount of dirt splashed up onto the doors, door windows and rear view mirrors.

The windscreen is kept clean by three windscreen wipers. Grab handles on the front make it easy to clean off the windscreen. A roof hatch is standard.



F 10 and F 12 Cab

Cab mountings: One of the main objectives in the design of F 10/F 12 trucks has been to create first-class driver comfort. For this reason the cab has been completely insulated from the frame. It rests on four coil springs – two front and two rear. Movements are damped by means of telescopic shock absorber at each spring. There is also a stabilizer at the front.

The cab mounting system absorbs all high-frequency vibrations from the chassis.

Level-controlled rear cab mountings:

An optional extra for the sleeper cab. This levelling device compensates the tendency of the cab to lean rearwards due to the weight of extra equipment, acceleration forces and air resistance.

NOTE! This levelling system is recommended when the Air Flow System or a roof-mounted air deflector has been specified.

The levelling system consists of air springs which supplement the cab shock absorbers. Pressure from the regular air system of the vehicle is used to inflate the springs. This is controlled by a valve which senses the leaning tendency of the cab.

Cab tilting: Hydraulic cab tilting is standard. Maximum tilting requires 64 mm pump strokes at a force of 25 kp for a short cab and 26 kp for a long cab. The locking unit and pump are both operated from the right-hand side of the cab. The cab has a tilting angle of 60°.

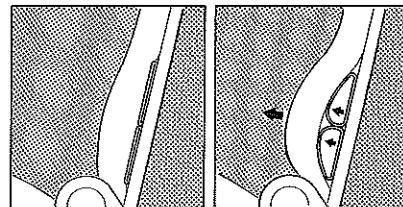
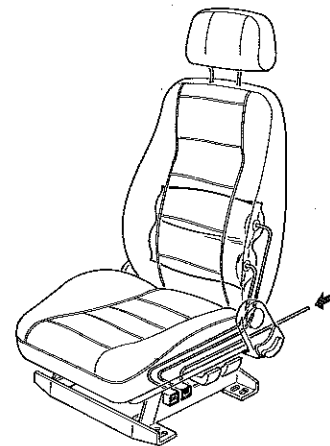
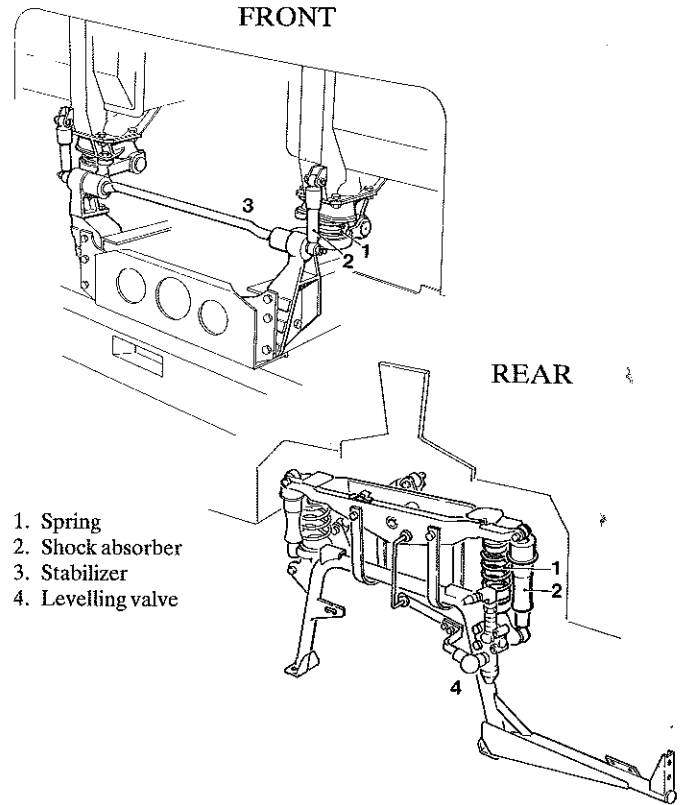
Entry: The outside door handle is located low down and convenient in the lower corner of the door. The door opening angle is 90°. Entry and exit are facilitated by means of two liberally dimensioned handrails, one on each side of the door. The footsteps are robust, wide and anti-slip. Entry height is influenced by tyre size. The dimensions drawing on the last page shows the different entry measurements. When the door is opened, a lamp above the door lights up the steps.

Interior:

Driver environment influences the technique of the driver and also the economic yield provided by the truck. This makes it important for the cab to be roomy, comfortable, airy and pleasant.

Driving position: The Volvo driving seat is fully sprung and has a long, dished backrest to give ample lateral support for the back. The seat cushion is also deeply dished for support and comfort. This well contoured seat gives excellent location and support even when the cab is swaying. The head restraint is also adjustable. All of the controls are fitted on the side of the seat nearest to the door.

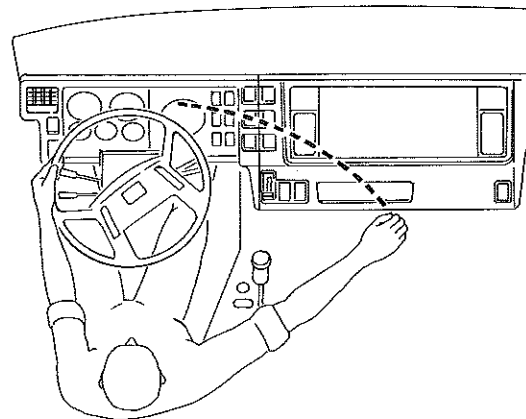
For even better sitting comfort, an air-sprung seat is available. This seat has an air suspensions system which automatically adjusts to the driver's weight to give the smoothest ride. The seat takes about 10–15 seconds to adjust itself. Unloaded, the seat is about 4 cm lower than



when loaded. This gives more space between the seat and the steering wheel for easier access. This ergonomically designed seat also incorporates an adjustable lumbar support. It consists of two air-filled pads in the lower region of the seat backrest. The adjustable lumbar support ensures the very best of comfort whatever the driver's preference. The steering wheel can be adjusted to different positions: fore-aft 20°, and up-down 40 mm. An electrically heated driving seat is also available as an optional extra.

F 10 and F 12 Cab

The instruments and controls are located partly right in front of the driver, partly on a central console. The driver has the gear lever, hand throttle and stop control right beside him. Within convenient reach on the console is the parking brake lever.



The illustrations show the positions of the instruments and controls. The speedometer and tachograph are electronic. This totally eliminates the problems related to mechanical systems with cables and adapters. Cable failure, noise carried from the gearbox to the instrument panel etc, are all things of the past. The much improved reliability means a longer service life on par with that of the other components of the vehicle. If tyre dimension or final drive ratio are altered, the system is quickly and easily recalibrated in the cab by using a special instrument. The complete system consists of a speedometer, when required with a tachograph, the wiring and a sensor on the gearbox. The sensor measures wheel speed by picking up pulses from the output shaft which are proportional to engine speed. The pulses are processed in the black box which controls the speedometer, odometer and tachograph.

Key to symbols:

1. 2. 3. 4. 5. 6. 7. 8. 9. 10.



11. 12. 13. 14. 15. 16. 17. 18. 19. 20.

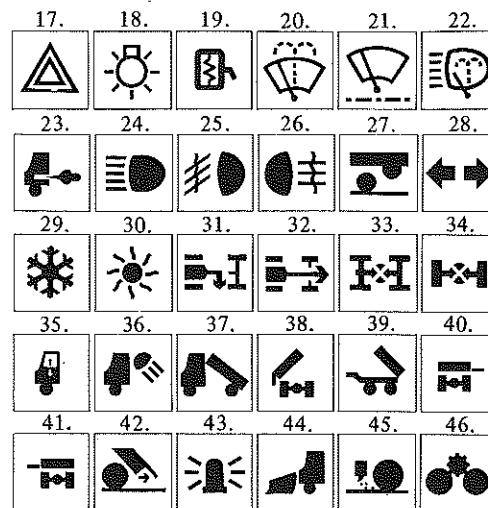


Warning and reminder lamps

1. Not connected
2. Control lamp, differential lock between axles
3. Control lamp, differential lock between wheels
4. Control lamp, blocked air cleaner
5. Control lamp, pre-heating (electric starter element)
6. Control lamp, full headlights
7. Control lamp, bogie lift or Robson drive (only 6x2 trucks)
8. Control lamp, turn indicators, tractor unit
9. Control lamp, turn indicators, trailer
10. Control lamp, overdrive engaged (SR 62) or excessively high oil temperature (MR 62 B)
11. Warning lamp, parking brake
12. Warning lamp, brake system (service brakes)
13. Warning lamp, excessively high coolant temperature or excessively low coolant level
14. Warning lamp, oil pressure
15. Oil pressure gearbox
16. Warning lamp, battery charging
17. Warning lamp, battery charging (extra generator)
18. Warning lamp, cab securing system
19. Not connected
20. Marking lights

Symbols for switches

- | | |
|--|---------------------------------|
| 17. Hazard flashers | 32. Power take-off, rear |
| 18. Headlights and instrument lighting | 33. Differential between axles |
| 19. Electric rear view mirror | 34. Differential between wheels |
| 20. Windscreen wipers and washers | 35. Electric window lift |
| 21. Intermittent action wipers | 36. Loading light |
| 22. Headlight wipers and washers | 37. Tipper, rear |
| 23. Exhaust pressure governor | 38. Tipper, side |
| 24. Full headlight/Spotlights | 39. Tipper, trailer |
| 25. Foglights, front | 40. Side wall release, right |
| 26. Foglights, rear | 41. Side wall release, left |
| 27. Bogie lift | 42. Tailboard release |
| 28. Turn indicators | 43. Rotating warning light |
| 29. Air conditioning system | 44. Plough |
| 30. Engine heater | 45. Sanding system |
| 31. Power take-off, side | 46. Robson drive |



F 10 and F 12 Cab

Heating and ventilation. The cab is fitted with a very effective heating and ventilation system. It is ready to be supplemented with a parking heater. The standard version of the installation is very advanced and incorporates ATC, an air conditioning unit with Automatic Temperature Control. The principle is for warm air to be spread at low velocity through many outlets which are well distributed. Furthermore, the air is aimed so that it warms up surfaces which otherwise would radiate cold.

The effect of the heating system makes it possible to maintain a temperature of 35°C inside the cab when outside air temperature is as low as -20°C. The air is cleaned efficiently in a paper filter with an area of 1 m³ before entering the cab - very important to sufferers of hay fever since all dust and pollen is removed. This filter is cleaned once a month and replaced every year. It is located in an easily accessible position in the cab front.

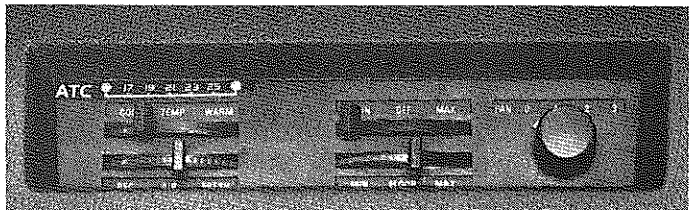
The capacity of the fan is about 8.5 m³ of air per minute, i.e. 510 m³/h. One person needs about 25 m³/h. The air is spread throughout the cab by means of 24 different nozzles, eight below the windscreen and 4 in each door. Two outlets by the feet of the driver and two by the feet of the passenger, the outermost of which aim air at the side of the doors to prevent cold radiation from the doors. The dashboard includes four nozzles which can be aimed individually or completely closed.

The air leaves the cab through eight openings in the rear edge of the cab. As the picture shows, the air sweeps from the windscreen along the headlining and down the rear wall to the floor. Then the air flows upwards between the wall upholstery and the sheet-metal. Finally the air passes out through openings in the rear cab wall. This system effectively prevents cold radiation from the rear wall, this being particularly important when the cab is to be used for sleeping purposes. Non-return valves prevent the air from going the wrong way through the air outlets. The outlets are dimensioned to maintain a certain excess pressure inside the cab and this prevents draughts from the outside.

The heating system is controlled by four levers:

(TEMP) Used to adjust cab temperature. Setting range: COOL-WARM, ATC 17 to 25°C.

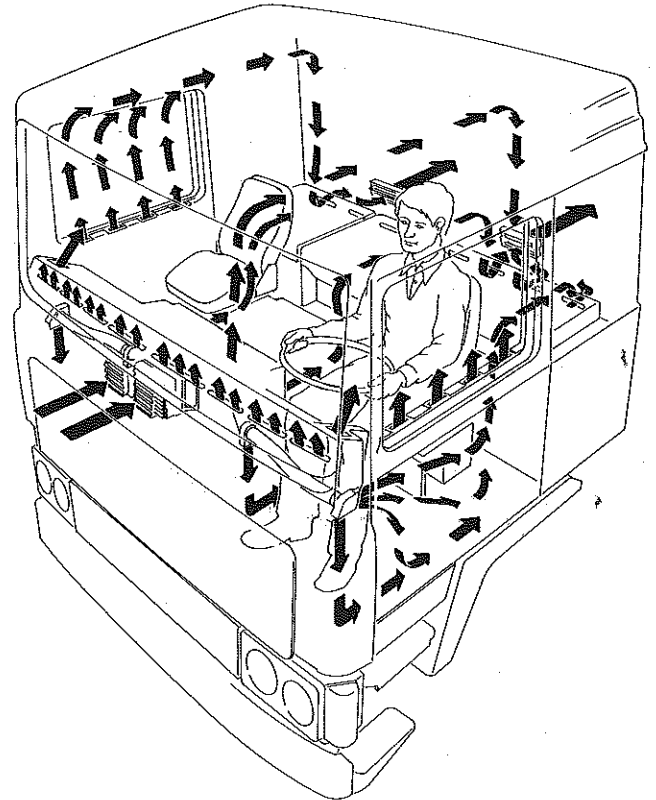
(AIR) Used to adjust mix of recirculated cab air with 20 % fresh air or 100 % fresh air. Setting range: REC-FRESH.



(DEF) Used to set amount of air aimed at windows and screen. Setting range: MIN-MAX.

(FLOOR) Used to set amount of air blown in at floor level. Setting range: MIN-MAX.

The panel nozzles can also be aimed individually for preference.



F 10 and F 12 Cab

In "warm" weather (ambient temperature higher than comfortable cab temperature) the cooled air should be aimed so that it also hits the windows. All four nozzles on the panel open and pointing upwards and to the driver.

(TEMP) Set ATC for comfortable temperature between 17–25°C. Without ATC, set MIN.

(AIR) With ATC set REC. Without ATC set FRESH.

(DEF) Open 1/4 between MIN–MAX.

(FLOOR) Close (MIN).

(FAN) Always on, pos 1 (if needed, pos 2).

In "cold" weather (ambient temperature lower than comfortable cab temperature) the heated air should be blown in at the floor to give a steady cab temperature. Panel nozzles shut.

(TEMP) Set to desired level, both with and without ATC.

(AIR) Set to FRESH.

(DEF) Open 1/4 between MIN–MAX.

(FLOOR) Open (MAX).

(FAN) Fan always on, pos 1 (if required, pos 2).

When starting in cold or damp weather extra fast warm-up is needed with low humidity to clear the windows of mist or frost. The two outer nozzles should be open and pointed towards the side windows.

(TEMP) Set ATC for desired temperature between 17–25°C. Without ATC set MAX.

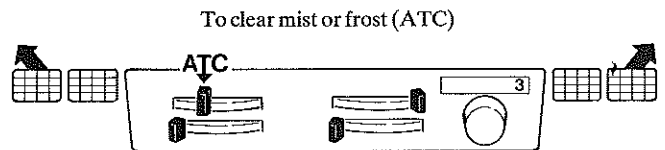
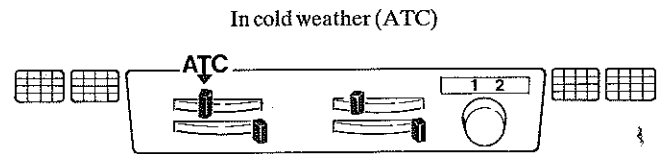
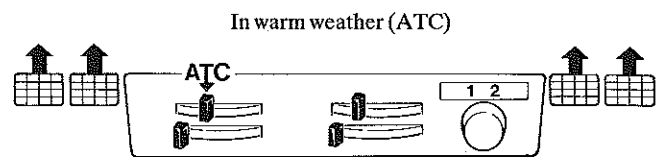
(AIR) Set ATC to REC. Without ATC set FRESH.

(DEF) Open (MAX).

(FLOOR) Closed (MIN).

(FAN) Set fan to pos 3.

This will quickly clear the windows. After the windows have cleared, make suitable settings for cold or warm weather.



FAN has three speeds.

(POS 1) For normal conditions, the lowest fan speed is adequate, pos 1. The fan should always be switched on (with ATC the fan cannot be switched off). The fan should always be on for the following reasons:

- Over-pressure in the cab prevents draughts.
- Fresh air in cab even when crawling or at standstill.
- Without ATC, the thermostatic valve will not function correctly unless it is being passed by an adequate supply of air enabling it to sense the temperature of the heat exchanger.

(POS 2) need not be used until ambient temperature is colder than –10°C or hotter than +30°C.

(POS 3) is used for fast defrosting and demisting, or to cool the cab down. The roof hatch will also help keep the in-cab temperature down when the vehicle is parked.

F 10 and F 12 Cab

Air conditioning system ATC (Automatic Temperature Control). The in-cab temperature can be controlled between 17°C and 25°C to an accuracy of $\pm 1^\circ$. ATC maintains the set cab temperature irrespective of fluctuations in outer temperature, headwinds, or variations in engine load and speed. In cold weather (from about -10°C) the temperature of the air entering the cab is automatically increased to compensate for cold draughts from the windows etc. The temperature can therefore vary somewhat between, for example, a fascia nozzle and a side window. The temperature setting, however, will ensure the selected average temperature in the cab. The air conditioning system is controlled by means of three temperature sensors and a control unit. One sensor measures the temperature of the outside air as it enters the inlet, a second measures the temperature of the heated or cooled air entering the cab, and the third sensor is mounted in the fascia and monitors the temperature of the cab air which is returned in the REC mode to the air conditioning unit. This data is then processed in the electronic "black box" and is then compared with the temperature settings selected by the driver. This system gives very quick warm-up or cooling down to a comfortable temperature without needing to alter the controls.

In addition, the system has very quick response, in other words it will quickly increase or lower the cab temperature when the driver alters the settings. Thanks to the efficiency of the control system, the time during which the AC compressor is in operation has been reduced. At $+25^\circ\text{C}$, the compressor is in operation about 27 % of the time compared with the approximately 70 % of a traditional air conditioning system. In addition to saving a certain amount of fuel, this increases the service life of the compressor. For the ATC system to work as designed, all of the windows and the roof hatch must be closed. Otherwise, the system will be interrupted since its operation is based on a certain amount of over pressure in the cab. Furthermore, with windows and hatches shut, all air entering the cab is carefully cleaned in the air filter.

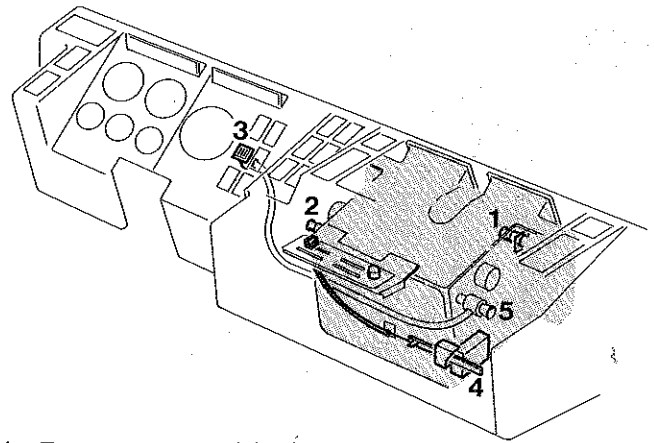
The system is prepared for the installation of a parking heater.

In the ATC system, cab temperature is controlled automatically. Without ATC, a special in-cab thermostat is used by the driver to select the desired temperature. The heater switches off automatically when the temperature reaches the desired setting, to start again when the temperature has dropped 2°C . The fast response of the ATC control system makes sure that the in-cab climate is consistent and comfortable for sleeping. The driver can start the heater directly or use a timer for automatic starts.

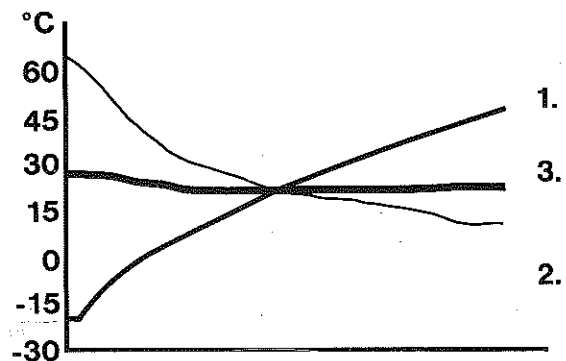
For overnight stops in "cold" weather.

Cold draughts from the windows and a fresh and comfortable sleeping temperature is ensured by keeping all of the nozzles open and aimed towards the bunk(s).

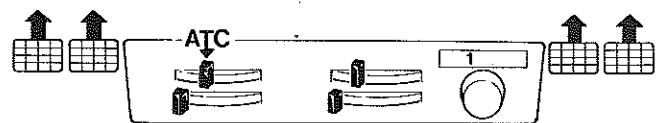
Parking heater: (extra equipment). This is built into the heating and ventilation system. The heater consists in principle of a thermostat-controlled oil burner which



1. Temperature sensor, inlet air
2. Temperature sensor, treated air entering cab
3. Temperature sensor, ambient cab air
4. Controls
5. Ejector



1. Outside temperature
2. Inlet air temperature
3. Inside cab temperature



heats up the engine coolant. The ordinary heating system is then used to heat the cab.

The heater is switched on and off by means of a thermostat. Since the entire engine cooling system functions as a heat reservoir, it is not necessary to re-start it often as with an air heater when the system is still warm. When the coolant reaches 50°C , the heater fans automatically start up at low speed and blows warm air into the cab.

(TEMP) Select desired temperature with ATC. Without ATC, set MAX.

(AIR) Set to pos REC.

(DEF) Open 1/4 between MIN-MAX.

(FLOOR) Shut at MIN.

(FAN) Starts automatically at first speed when P-heater is used.

F 10 and F 12 Cab

Visibility

The cab designer has had to consider two conflicting demands; partly the largest possible glazed area for a wide range of vision, partly the smallest possible glazed area for effective heat insulation. The result is a cab with a large windscreen and large side windows and more effective heater.

The windscreen is kept clean by three windscreen wipers. Windscreen washer nozzles are fitted in each wiper. This means that the nozzles follow the movements of the wiper blades, the result being very efficient washing less wiper blade wear. The windscreen washer has a 16-litre water container.

Close-up vision sideways can be achieved by using a mirror which is available as extra equipment and located on the upper edge of the passenger door.

Safety: The cab satisfies by a wide margin the Swedish safety demands – the most severe in the world. These demands specify that the cab must withstand impact against the windscreen pillar and the rear wall of 29,500 Nm (3,000 kpm) and also that the roof must stand up to 15 tons.

The cab has also been given extra reinforcements level with the driver's knees in the front and also in the form of beams in the doors. The interior equipment is made of fire-resistant material and satisfies the American demands.

All interior sheet-metal surfaces are padded with impact-absorbing material. Investigations have shown that the steering wheel is often a serious cause of injury in an accident. Therefore the F 10 and F 12 now feature a steering wheel of special safety design which significantly reduces the risk of injury by deforming under impact.

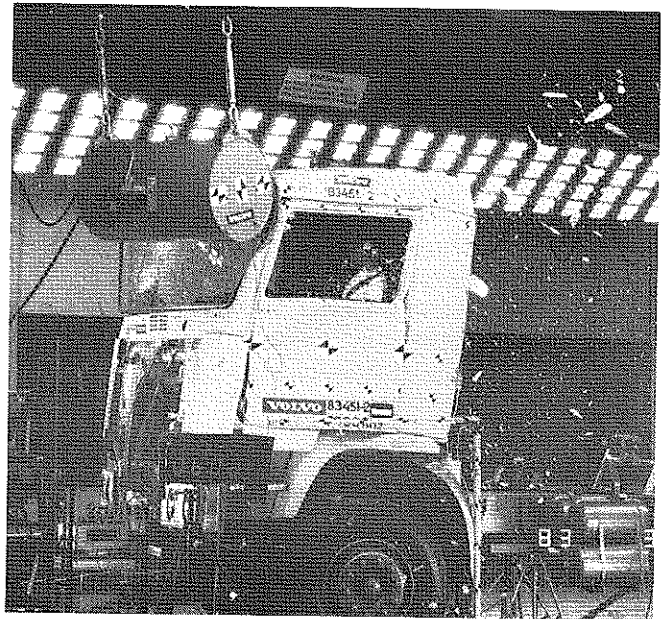
Three-point seat belts of inertia type are available as optional extras for both the driver and crew seats.

An investigation carried out by Volvo on seat belts and their use gave the following results:

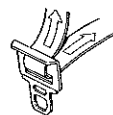
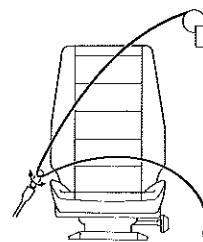
- In 75 % of all accidents, injuries would have been reduced if a three-point seat belt had been used.
- In 5 % of the accidents studied, there would have been a risk of serious injury if a seat belt had been used.
- In 20 % of the accidents studied, the injuries incurred could not be related to whether a seat belt had been used or not.

Volvo's unique three-point seat belt has been specially designed to operate with a sprung cab seat. The belt has two inertia reels which lock up electronically when a sensor detects heavy braking or retardation but it is not effected by the movement of the seat suspension.

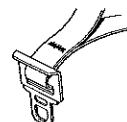
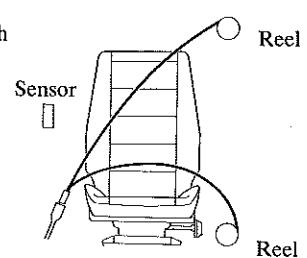
The two reels also give better distribution of the belt when it is retracted. Thus, the degree of stretch in a collision is lower.



Conventional System



Volvo System



F 10 and F 12 Cab

Sound insulation

Very extensive measures have been taken concerning sound insulation. The floor and engine casing are covered by heavy bitumen matting, 8 kg/m^2 . Above this matting there is a carpet consisting of the following layers:

Engine

- 10 mm spacer material of felt
- a sound-insulating bitumen coating
- a surface coating of soft textile material.

On the floor

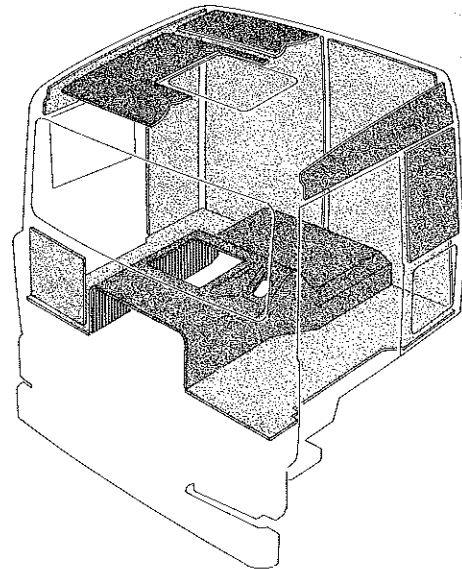
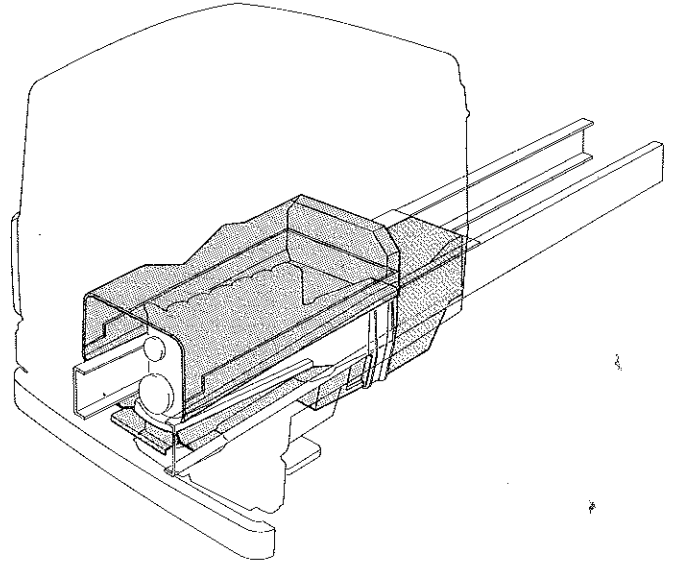
- a thin bottom layer of watertight material
- 10 mm spacer material of felt
- a heavy and sound-damping rubber material
- a wear surface of strong rubber.

The walls are covered with sound-absorbing material consisting of textile-covered pressed glass wool.

Many measures have also been taken to prevent sound from penetrating through various cavities.

- The steering column is insulated by means of double rubber bellows.
- Very few cable and piping throughputs.
- The gear lever throughput is fitted with a heavy thick-walled rubber bellows. The visible part of the lever is covered by a gaiter of leather-coloured plastic. Thick felt is fitted between this gaiter and the rubber bellows. Furthermore high-frequency noise is prevented from spreading through the lever itself which is in two parts, connected by rubber blocks.

The interior noise level during acceleration at 80 km/hour in top gear is 72–73 dB (A).



F 10 and F 12 Cab

SURFACE TREATMENT

The surface treatment process is started by a unique combination of three different **pre-cleaning methods**: Alkalic dip degreasing, brush and spray emulsion degreasing, alkalic spray degreasing. This very thorough cleaning process with the subsequent **zinc phosphating** gives stronger protection against the effects of corrosion such as caused by flying stones or scratches in the paint work, and also provides a good foundation for the following coats of paint.

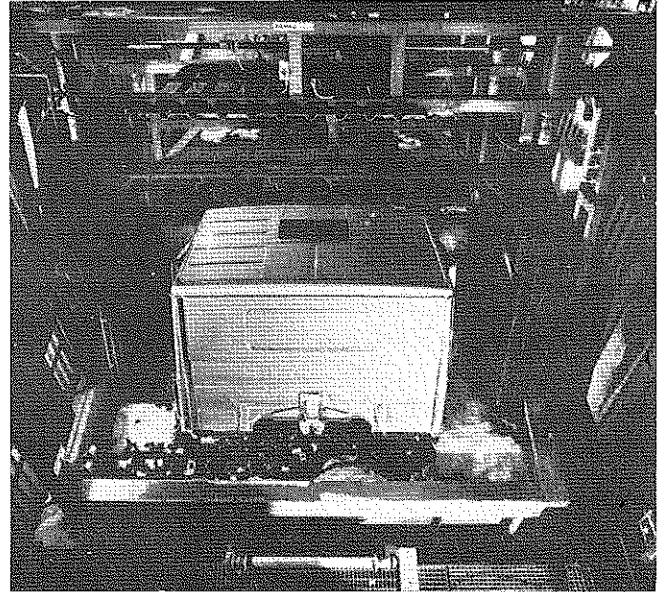
Coating no. 1 (EC primer) is applied in a cathodic electro-dip plant. This method, which is entirely superior to previous (anodic) methods, gives above all a better penetration of the paint into body members and cavities.

Coating no. 2 consists of a special corrosion-resistant spray surfacer which is applied in a heated airless electrostatic process which results in a thicker coating than conventional spraying methods.

Coating no. 3 is a sealer coating of paint which increases the total coat thickness and provides an excellent foundation for the 4th and final coating.

Coating no. 4 is a high-gloss top coat.

Underbody treatment consists of a tixotropic rust-proofing fluid. The tenacious adhesion and flexible consistency of this rust inhibiting fluid means that any damage or scratches in the surface are healed over. **Rust-proofing treatment** of body members, cavities and joints is provided by a penetrating rust inhibiting fluid.



F 10 and F 12 Cab

Interior dimensions (mm)

Floor – roof	1,610
Door – door	2,170
Height over bunks (two bunks)	600 (between) 580
Bunk width	620
Bunk length	2,000
Driving seat: fore/aft	
Adjustment	150
Height adjustments	65
Back rest angle, reclining	64°

Outer dimensions, mm (tractors with P2 springs)

	Tyres 11.00-R 20"		12.00-R 24"	
	4x2	6x4	4x2	6x4 (Tractors with P2-springs)
O Height (road – cab roof, unladen)	3,140	3,130	3,210	3,200
P (Road – air intake, unladen)	3,500	3,490	3,570	3,560
H Height (road – first step)	505	495	575	565
C Max tilting height with air intake, long cab	4,195	4,185	4,265	4,265
Max tilting height with air intake, short cab	4,000	3,990	4,070	4,060

Without air intake:

Short cab	Long cab
-410	-495

Without air intake: Long cab

620	931
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E Length, front axle centre line – air intake

1,720	2,045
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D Length, bumper – rear edge of cab (BBC)

F Recommended distance air intake – superstructure min.

100 mm*

* Head board supports can protrude 30 mm from this position.

Overall width, max 2,400 mm.

These dimensions are examples which represent two different trucks. Dimensions can vary depending on the model, for specific information, see data leaflet.

Observe that the type of superstructure can also influence the overall measurements of the vehicle.

