

FR1

R A N G E



RENAULT BUSES



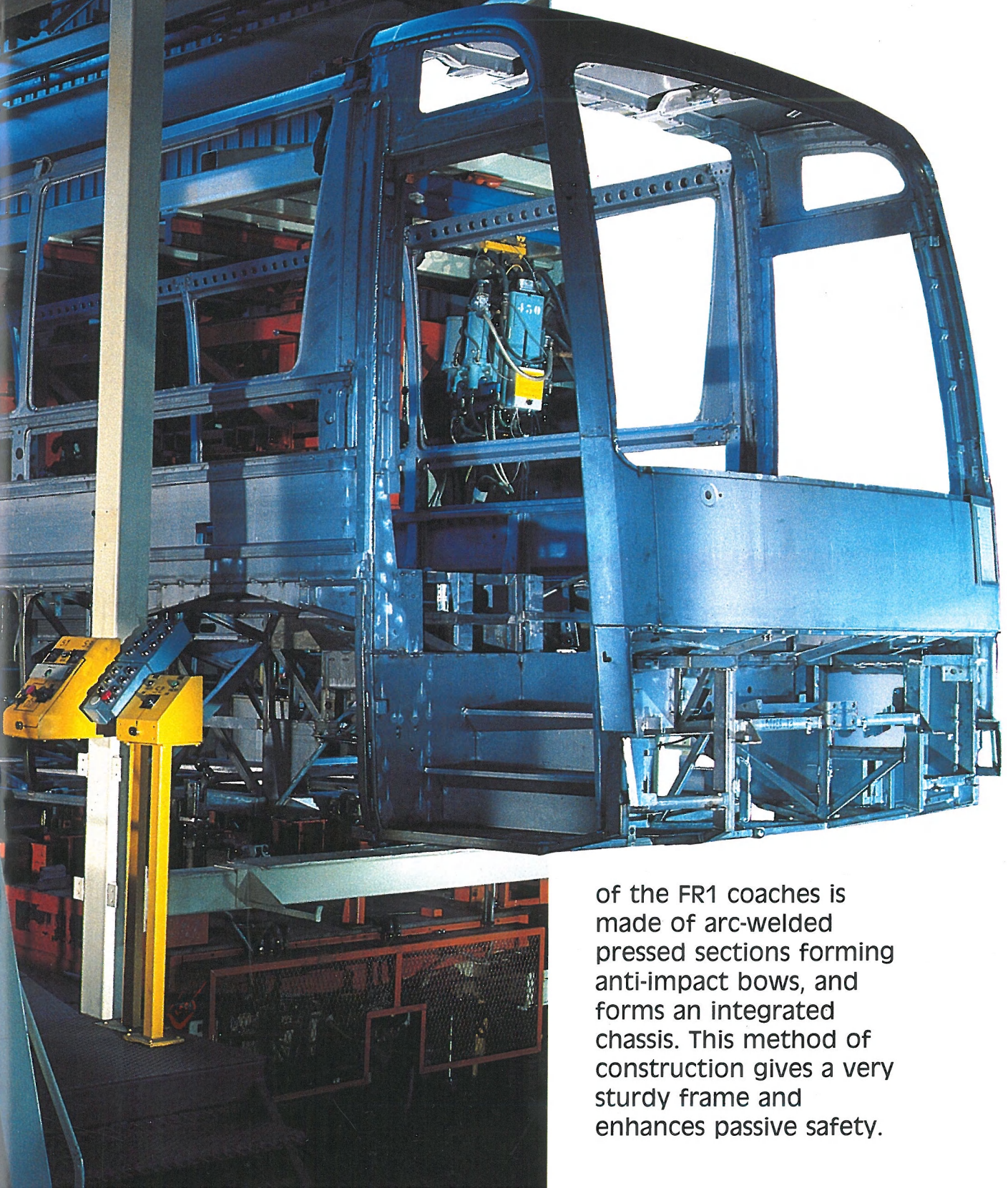


The FR1 coaches make up a very sturdy family. They may be independent enough for each to go his own way as he pleases along the highways and byways of the world, they still have in common their fundamental values: quality, performance, cost effectiveness.



GETTING TECHNOLOGY INTO PERSPECTIVE

All coaches in the FR1 range are built around the same basic idea: absolute priority is given to safety. Thus, using a technique already used in automobile technology, the structure



of the FR1 coaches is made of arc-welded pressed sections forming anti-impact bows, and forms an integrated chassis. This method of construction gives a very sturdy frame and enhances passive safety.



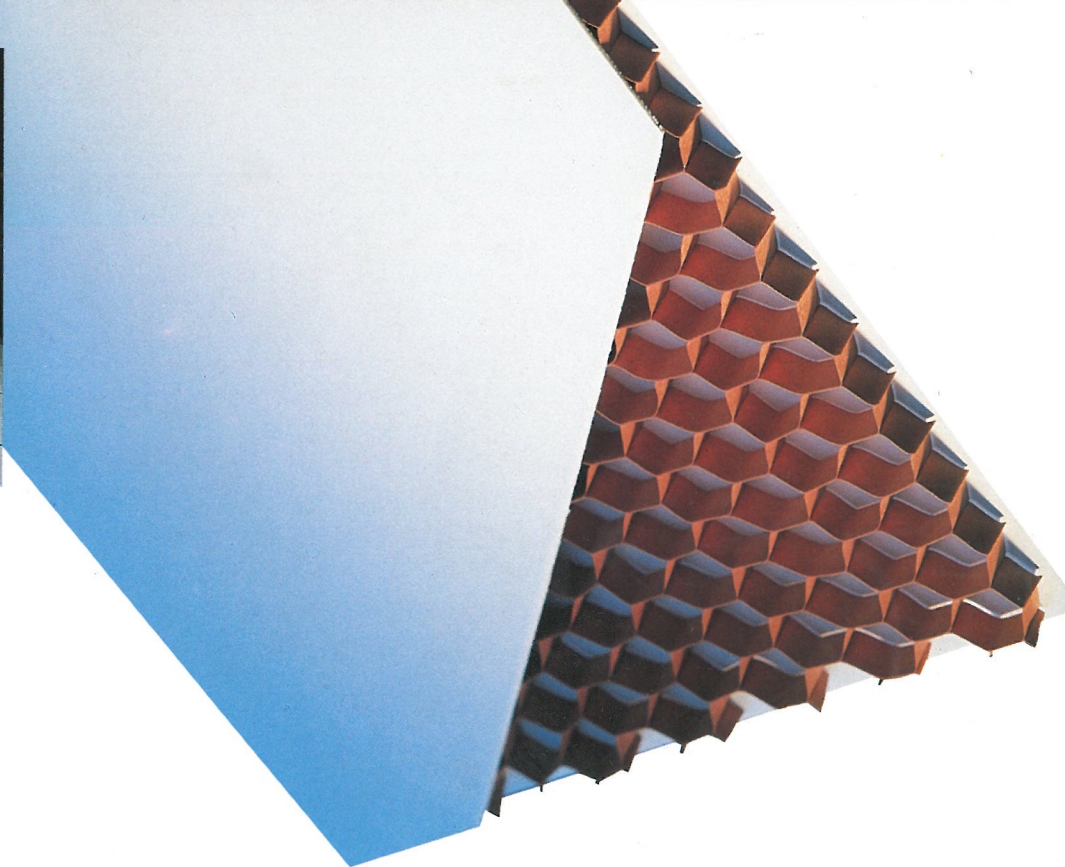
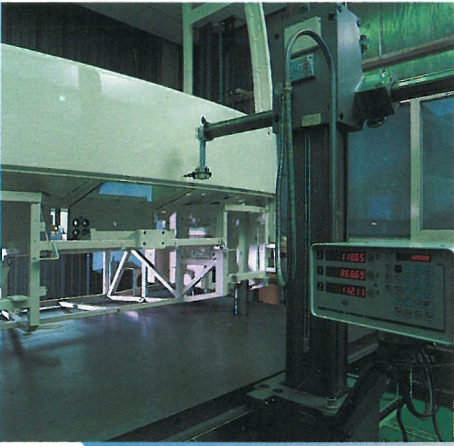
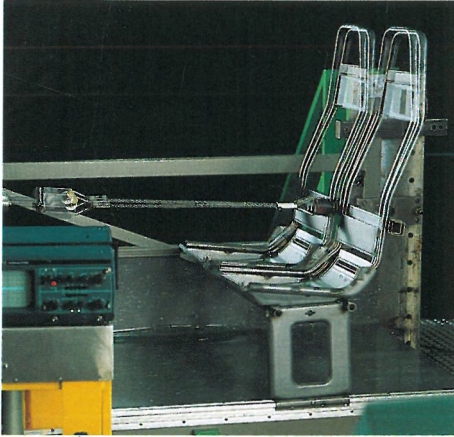
The FR1 range is the fruit of over twenty years of experience, that of Renault V.I. in the design and in the building of coaches and buses. You see, for Renault V.I. it is not simply a matter of offering chassis, but of offering complete vehicles which, down to the last detail, have been thought out and designed with an eye to the specific requirements of the various operators. The most sophisticated techniques are used in the building of

the FR1 range of coaches. To illustrate this, as in the aeronautics field, the FR1 range uses large-size plastic part technology, rigid frame assembly, multipin connectors and sandwich materials of the «NIDA» type (a honeycomb structure between two sheets of light alloy). Naturally, all vehicles in the range are given particularly thorough corrosion resistance treatment: the structural elements undergo chromic passivation followed by cataphoretic immer-

sion, spraying of foam into box sections and protection of sharp edges.

At each stage of the building process, from rig testing up to road testing, the FR1 coaches are constantly submitted to the most exacting tests under circumstances which bring out all their strength of character.

THE MOST ADVANCED PROCESS IN THE FIELD





FR1 GTX

The FR1 GTX has thrown a whole new light on the world of travel and tourism. Offering plenty of space and refined comfort, it gives passengers another vision of long-range international touring. Its qualities are numerous - high central access door, record capacity of the luggage locker, powerful engines, technological edge, and many more - and explain



why the FR1 GTX was voted «Coach of the Year 1991» by a jury of 12 European trade journalists.



VERSAILLES
DIEPPE

VERSAILLES

FR1 TX

The FR1 TX is a very high coach which offers international tour professionals a seductive argument for winning trade. With its high comfort level, large passenger and luggage capacities (more than 12.5 m³ of storage space), impressive performances of the 340 hp Turbo Intercooler engine and series-mounted double circuit braking system



backed by an ABS system so that nothing is left to chance, the FR1 TX is ready and waiting for immediate boarding of passengers on all regular national and international lines.



FR1 M340

Power, manoeuvrability, comfort: the FR1 M340 is in its element everywhere, from the flat lowlands to narrow mountain roads.

Designed for regular line use as well as touring, it has series-mounted air-conditioning, a courier's station and individual comfort units. It is fitted with a 340 hp engine, front disk brakes and series-mounted anti-blocking system (ABS).



Thus, the FR1 M340 combines high performances with safety on all types of road. In the 10.6 m version, the FR1 T3, you have an average-capacity touring coach which is particularly suited for sharp inclines or mountain tours.

The Kinderdijk windmills.



FR1 E

From excursions lasting a few hours to tour travelling, from school transport to inter-regional links, the FR1 E is by its very nature a multi-purpose coach which is open to all requirements: very large-sized steps ensure ease of access, luggage lockers with vertically-hinged doors and a storage capacity of over 10 m³, modular layout of the interior, ergonomically-designed



seats, quality suspension, air-conditioned comfort, etc. In the FR1 E, passengers always have that holiday feeling !



The coaches in the FR1 range were designed to smoothen the way for passengers.

The ergonomically-designed seats are slide-mounted and individually-adjustable. They provide support for the entire body and yet allow for the most relaxed positions. From one model to the next, all comfort facilities and fittings are immediately to hand and are built into the seat (ashtray, magazine-holder, foot-rest, removable arm-

rest, drink-holder) or grouped together on a comfort unit located above the passenger's head (reading light, individual air jet). Luggage racks are also provided for all personal belongings. To ensure that the atmosphere is always perfect, the heat level is controlled either by an automated electronic control unit or by a thermostat (with the exception of the FR1 E version).

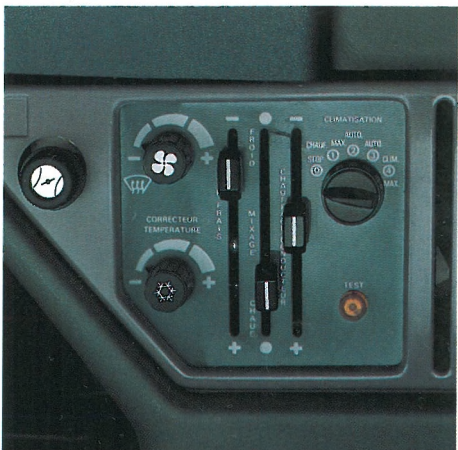
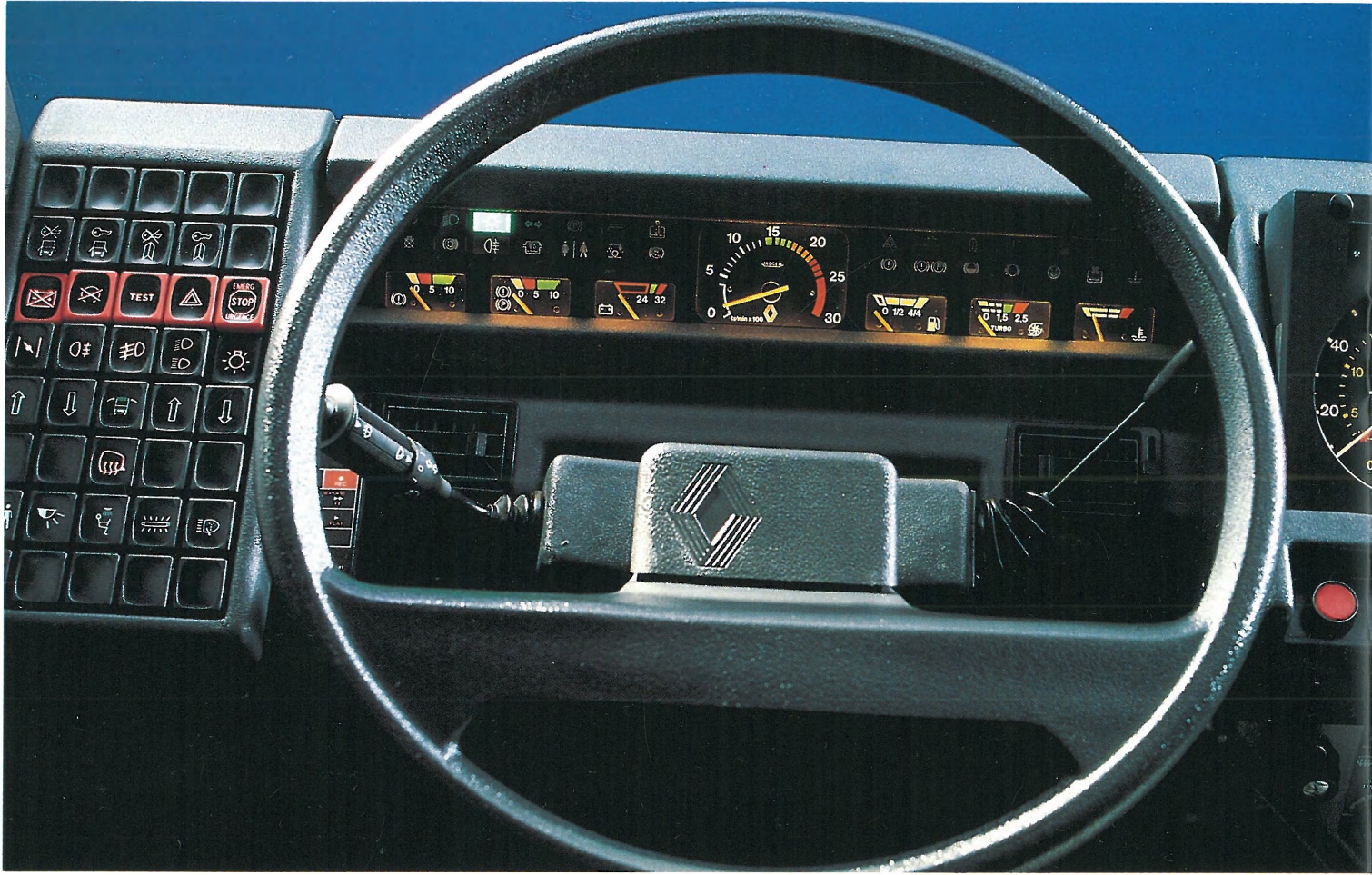
A CONGENIAL, COMFORTABLE ATMOSPHERE TO RELAX IN



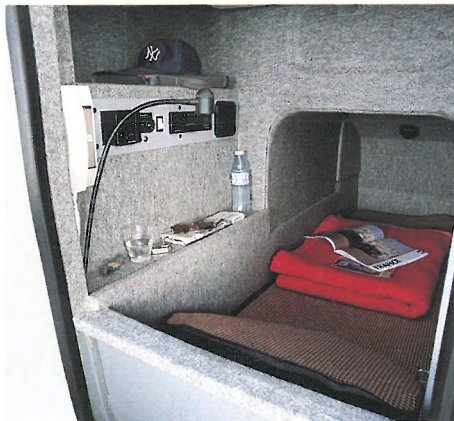
Now, at last, passengers can lie back and relax without a care in the world thanks to the suspension system used throughout the FR1 coach range. This system does away with all the minor discomfort once caused by pitch and roll by combining air bag flexibility and double-acting shock-absorbers, plus a levelling system. Coaches in the FR1 range can be optionally fitted, depending on the models, with: a closed-circuit video

system, a toilet with automatic lighting, a refrigerator, a hot drink dispenser, etc.





ERGONOMICS AS A DRIVING PRINCIPLE



Coach tour operation entails long hours spent behind the wheel. For this reason, right across the FR1 range, pride of place is given to driver comfort.

The pneumatic - suspension * driver's seat instantly reacts to suit his weight. It is adjustable and swivels, and thus offers the driver an excellent relaxing position during long stops.

The steering-wheel is also adjustable in height and depth and the assisted-steering system is smooth and accurate. The control instruments, warning lights and indicators are clear and easy to interpret and are placed within the driver's field of vision; the lighting switches layout is designed in relation to their frequency of use.

Visibility is of the best thanks to a wide windscreen. Like his passengers, the coach-driver enjoys individual air-conditioning** and lighting.

The driving station is further provided with a door equipped with an electrically-operated window and with a storage unit.

The courier is provided with what amounts to a real work station* with a fold-away seat complete with safety-belt, a desk, personal storage space, reading light, microphone with lead and call-light.

* optional on model FR1 E

** with the exception of model FR1 E

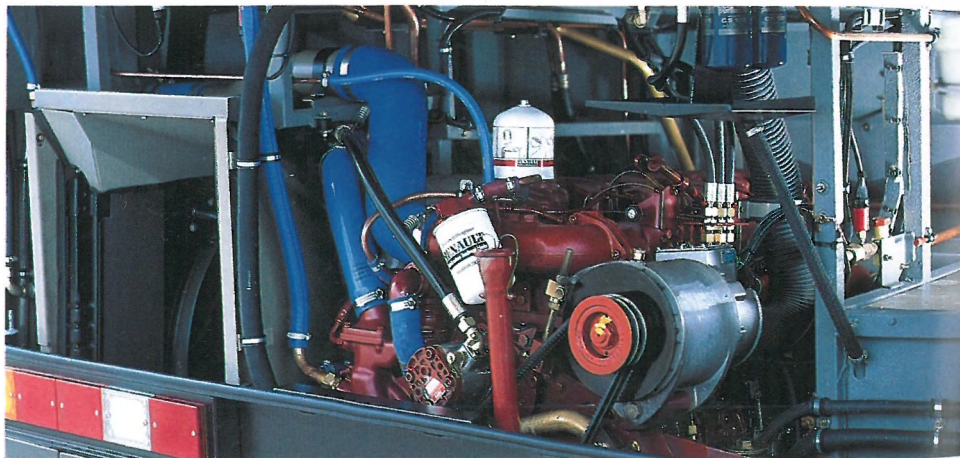
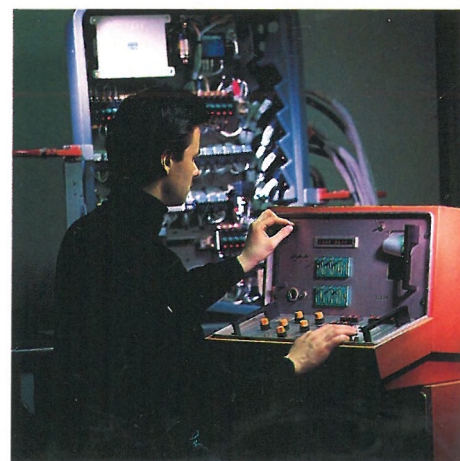
A CONSTANT OBJECTIVE: SAFETY AT ALL COSTS

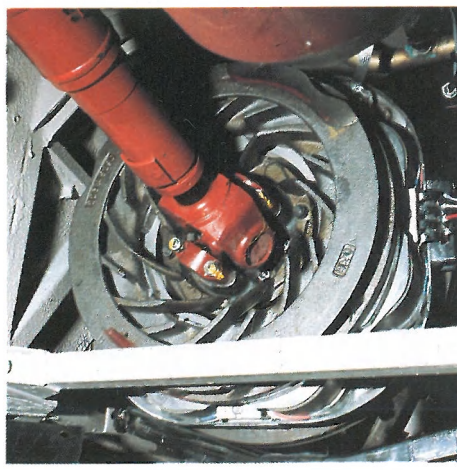
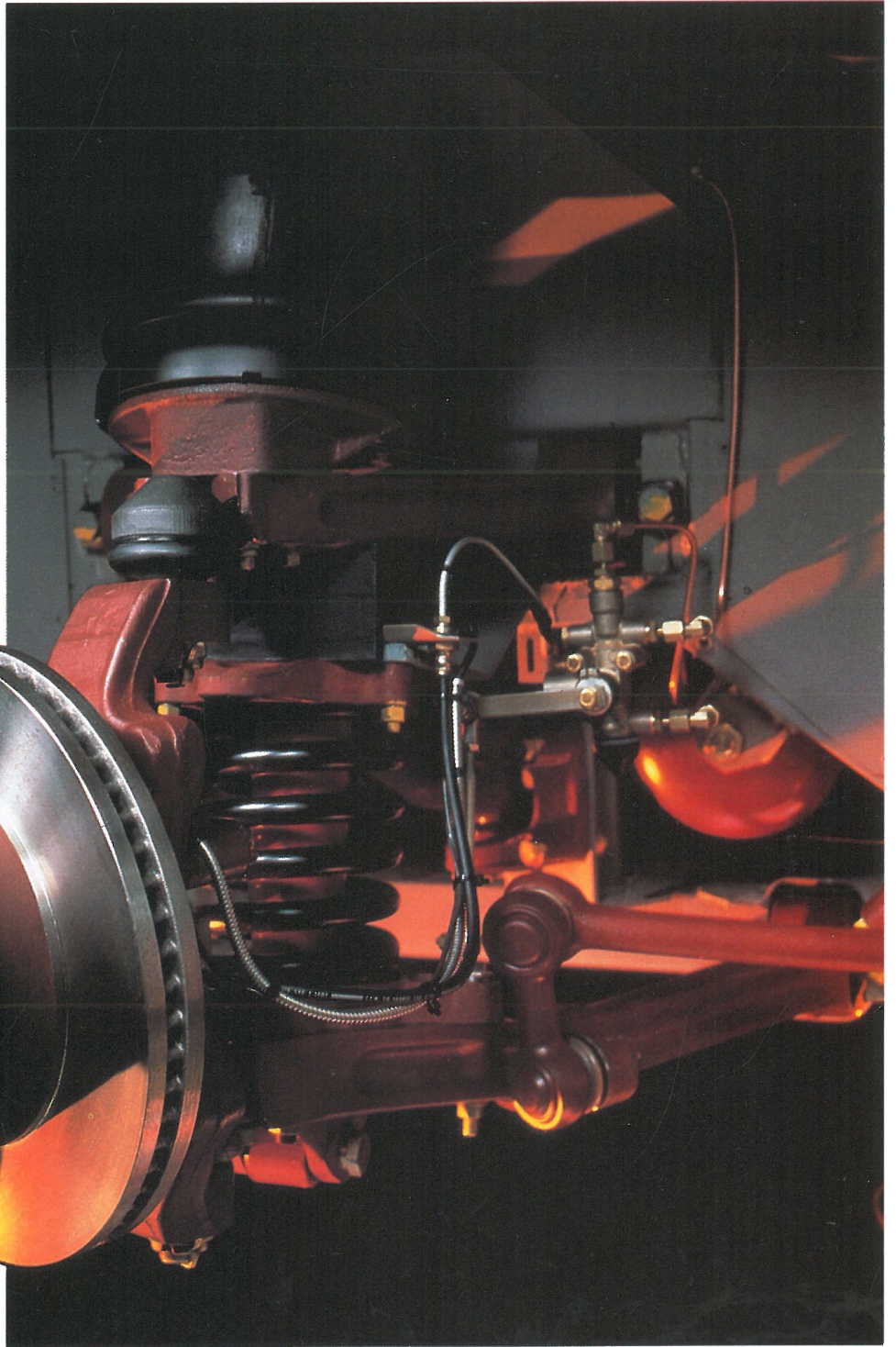
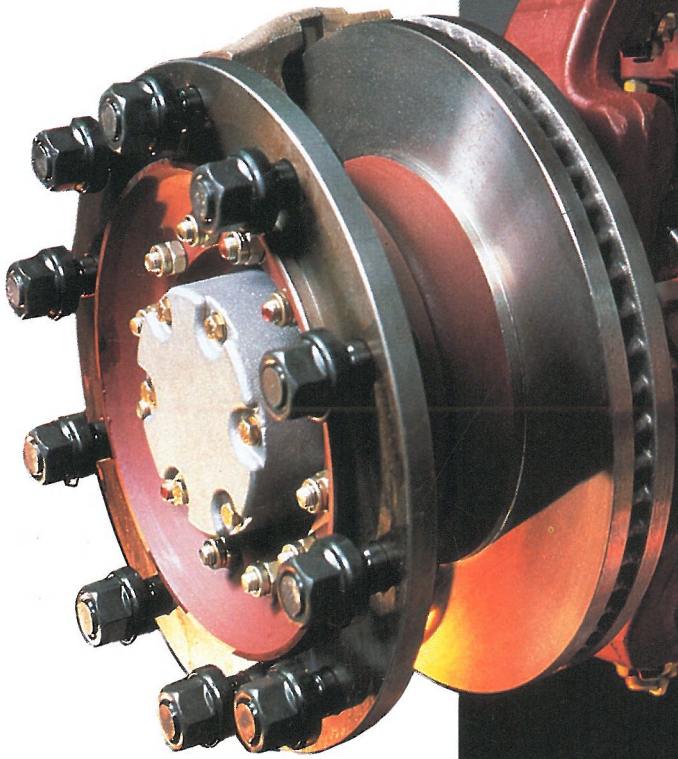
The models in the FR1 range are fitted with a 302 hp engine (model FR1 E) or a 340 hp engine (other models) and a 6-ratio gearbox. These Turbo Intercooler engines provide the best power-to-cost-effectiveness ratio.

As well as cutting fuel consumption, the turbo system also guarantees safety by providing the driver with a power reserve.

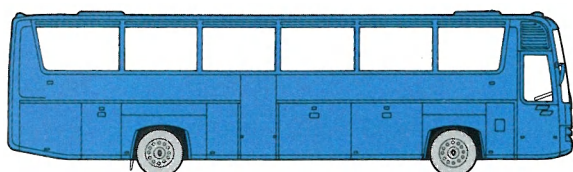
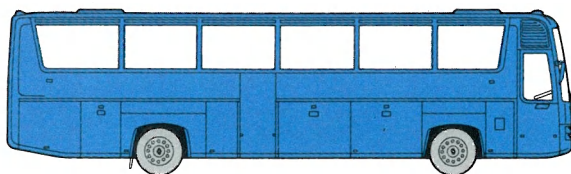
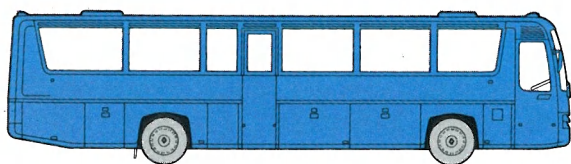
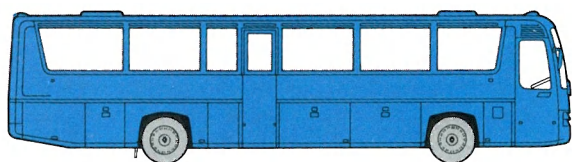
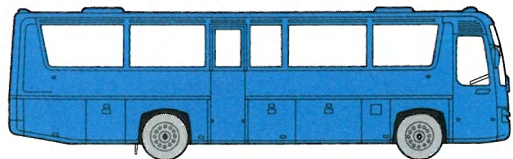
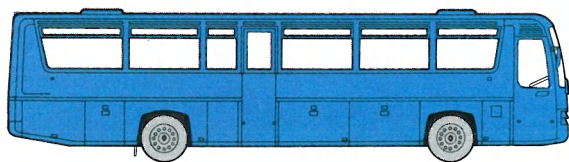
Safety is firmly in command of the FR1 models. They are fitted with a generously-powerful, tough, twin-circuit progressive braking system made up of disk brakes on the front and brake drums on the rear of the vehicle, plus an electromagnetic retarder. The above system can receive in addition an ABS (optional on the FR1 E) which - should it be necessary to brake in an emergency - ensures that the vehicle retains its steerability, braking efficiency and heading.

This quest for safety at all costs which is present right across the FR1 range is carried to the addition of details which take as much of the worry out of things as possible, such as easy access to all mechanical parts for routine servicing, electrical wire harness connection, cable protection, compressed air distribution through a connection-less machined block or the use of ejectable roof inspection hatches.





FITTINGS AND



MODELS	E
Overall height (m)	standard (3.37)
Overall length (m)	12
GVW (kg)	18,500
Height of floor/ground (mm)	1,132
Engine power in KW (hp)	222 (302)
Max. torque in Nm (mkg)	1,185 (120)
Gearbox	ZF S6.90
ABS brake equipment	○
Fuel tank capacity (right and lefthand filling)	340 l in front overhang
Storage volume (m ³)	9.6 to 10.4
Centralized locking of access doors and lockers	○
EXTERNAL FITTINGS	
Defrosting R and L external rearview mirrors	●
Streamlined defrosting R and L external rearview mirrors + wide-angle mirror on right side	○
Idem above + electric remote control	○
SEAT LAYOUT	
Escapad TI or 195 TI	59 seats
Balad or 180 TI	53/55 seats
Evad ou 165 TI	47/51 seats
INSIDE TRIMS/FITTINGS	
Roof trim : central portion Luggage rack underside Service conduit	«Alinéa» laminated sheet Fancy sheetmetal Fancy sheetmetal
Side trim: under windows	«Alinéa» laminated sheet
Trim on partitions: 3 separating panels	«Alinéa» laminated sheet
Floor trim: steps, gangways and upsweeps	Rubber-based mat
Luggage locker trim	PVC mat
Mechanical parts covers	●
Sub-frame tube trim	-
Carpet trim: central roof panel in «Grain de riz» carpet; luggage rack underside in cloth matching seat; panels under windows in «Grain de riz» carpet; partitions are trimmed	○
Luggage rack doors	-
Rear window and side window curtains	○
W.C. with chemical toilet	○
Hot drink dispenser	○
Refrigerator at courier station	○
Driver's bunk behind central door	○
Tilting fold-away courier seat	○
2×25 watt radio cassette unit	○
THERMAL COMFORT	
Forced air with individual air nozzles and reading lights	○ (ducts)
Integrated air conditioning piloted by automatic control unit	-
Integrated air conditioning piloted by thermostats	-

key: ● : basic supply ○ : optional - : not provided

TECHNICAL CHARACTERISTICS

T3	M340	GT	TX	GTX
standard (3.37)	standard (3.37)	standard (3.37)	Extra high (3.55)	Extra high (3.55)
10.60	12	12	12	12
17,500	18,500	18,500	18,500	18,500
1,132	1,132	1,132	1,382	1,382
222 (302)	250 (340)	250 (340)	250 (340)	250 (340)
1,185 (120)	1,430 (146)	1,430 (146)	1,430 (146)	1,430 (146)
ZF S6.90	ZF 6S.150C	ZF 6S.150C	ZF 6S.150C	ZF 6S.150C
•	•	•	•	•
500 l in wheelbase	500 l in front overhang	500 l in front overhang	500 l in front overhang	500 l in front overhang
5.5 to 6.4	6.3 to 9.2	6.3 to 9.2	9.5 to 12.5	9.5 to 11.8
○	○	•	○	•
•	•	•	–	–
○	○	○	•	–
○	○	•	○	•
51 seats	59 seats	53/55 seats	53/55 seats	53/55 seats
45/47 seats	53/55 seats	53/55 seats	53/55 seats	53/55 seats
39/43 seats	47/51 seats	47/51 seats	47/51 seats	47/51 seats
PVC film «Puma» velvet seat cloth	PVC film «Puma» velvet seat cloth	PVC film «Puma» velvet seat cloth	PVC film «Puma» velvet seat cloth	PVC film «Puma» velvet seat cloth
carpet «Grain de riz»	carpet «Grain de riz»	carpet «Alizée»	carpet «Grain de riz»	carpet «Alizée»
carpet «Grain de riz»	carpet «Grain de riz»	carpet «Alizée»	carpet «Grain de riz»	carpet «Alizée»
Rubber-based mat	Rubber-based mat	Rubber-based mat	Rubber-based mat	Rubber-based mat
PVC mat	PVC mat	Vinyl mat	PVC mat	Vinyl mat
•	•	•	•	•
–	–	•	–	•
–	–	–	–	–
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Dimensions, characteristics and data are approximate and given for guidance only. The manufacturer reserves the right to introduce changes at any time without prior notice.