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SERVICE MANUAL COMPOSITION

At present, April 1998, the **Marea-Marea Weekend 1st volume manual** is composed of the sections listed below:

Print N°	Sections	Page Nos.	Comments
506.763 With binder (VI/1996)	**00**	1 ÷ 110	Introduction - Technical data
	10	1 ÷ 50	1370-12V engine fuel system
		1 ÷ 69	1581-16V engine fuel system
		1 ÷ 53	1747-16V engine fuel system
		1 ÷ 48	1998-20V engine fuel system
		1 ÷ 24	2387 TD engine fuel system
		1 ÷ 27	Removing-refitting 1370-12V power unit
		1 ÷ 29	Removing-refitting 1581-16V power unit
		1 ÷ 27	Removing-refitting 1747-16V power unit
		1 ÷ 17	Removing-refitting 1998-20V power unit
		1 ÷ 35	Removing-refitting 2387 TD power unit
	18	1 ÷ 15	Removing and refitting Composition and operation
	21-27	1 ÷ 77	Removing and refitting gearbox and diff.
		1 ÷ 69	Composition and operation AISIN automatic transmission
	33	1 ÷ 54	Removing and refitting brakes - Anti-lock brakes
	41	1 ÷ 24	Removing and refitting steering & power st.
	44	1 ÷ 29	Removing and refitting suspension
506.763/02 (VIII/1996)	**00**	44	Technical data
	10	1 ÷ 32	1910 TD - 100 engine fuel system
		3	Removing-refitting 2387 TD engine
		1 ÷ 30	Removing-refitting 1910 TD - 100 engine
	18	6	Clutch
	21-27	22	Removing-refitting gearbox and differential
	33	4	Anti-lock brakes
	41	2	Power assisted steering pump 1910 TD

Cont' ☞

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Cont' ☞

4F04SV

Print N°	Sections	Page Nos.	Comments
506.763/08 (IV/1998)	**00**	31 ÷ 32 45 ÷ 46	Update: Technical data
	33	29 ÷ 30	Update: Adjusting load proportioning valve
		30/1 ÷ 30/2	Update: Handbrake

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		1 ÷ 69	Composition and operation of AISIN automatic transmission
	33	1 ÷ 54	Removing and refitting braking system - Anti-lock brakes
	41	1 ÷ 24	Removing-refitting steering & power steering
	44	1 ÷ 29	Removing and refitting suspension
506.763/02 (VIII/1996)	**00**	44	Technical data
	10	1 ÷ 32	1910 TD - 100 engine fuel system
		3	Removing-refitting 2387 TD engine
		1 ÷ 30	Removing-refitting 1910 TD - 100 engine
	18	6	Clutch
	21-27	22	Removing-refitting gearbox and differential
	33	4	Anti-lock brakes
	41	2	1910 TD power steering pump

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SERVICE MANUAL COMPOSITION

At present, January 1997, the **Marea-Marea Weekend manual 1st volume** is composed of the following sections:

Print No.	Sections	Page Nos.	Comments
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		1 ÷ 69	Composition and operation of AISIN auto. trans.
	33	1 ÷ 54	Removing and refitting brakes - Anti-lock brakes
	41	1 ÷ 24	Removing-refitting steering & power steering
	44	1 ÷ 29	Removing and refitting suspension
506.763/02 (VIII/1996)	**00**	44	Technical data
	10	1 ÷ 32	1910 TD - 100 engine fuel system
		3	Removing-refitting 2387 TD engine
		1 ÷ 30	Removing-refitting 1910 TD - 100 engine
	18	6	Clutch
	21-27	22	Removing-refitting gearbox and differential
	33	4	Anti-lock brakes
	41	2	1910 TD power steering pump

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WORKSHOP MANUAL COMPOSITION

To date, June 1996, the **Marea-Marea Weekend Volume 1** manual comprises the following sections:

Publication no.	Sections	Number of pages	Notes
506.763 With binder (VI/1996)	**00**	1 - 110	Introduction - Technical data
	10	1 - 50	Fuel system 1370-12V engine
		1 - 69	Fuel system 1581-16V engine
		1 - 60	Fuel system 1747-16V engine
		1 - 48	Fuel system 1998-20V engine
		1 - 24	Fuel system 2387 TD engine
		1 - 27	Removing-refitting 1370-12V engine
		1 - 29	Removing-refitting 1581-16V engine
		1 - 27	Removing-refitting 1747-16V engine
		1 - 17	Removing-refitting 1998-20V engine
		1 - 35	Removing-refitting 2387 TD engine
	18	1 - 15	Removal and refitting Description and operation
	21-27	1 - 77	Removing/refitting gearbox and differential
		1 - 69	Description and operation AISIN automatic transmission
	33	1 - 54	Removing and refitting brakes - Anti-lock braking system
	41	1 - 24	Removing/refitting steering & power steering
	44	1 - 29	Removing and refitting suspension

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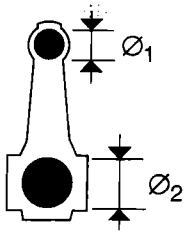
This manual contains the main instructions concerning the repair and maintenance of the **Fiat Marea and Fiat Marea Weekend.**
The manual is divided into sections distinguished by two-digit numbers which correspond to the spare parts microfiches and the repair time schedule.
The **INTRODUCTION AND TECHNICAL DATA (00.)** Section has the dual function of presenting the model and supporting the rest of the manual. This Section comprises technical data tables and specific information relating to the other sections in the manual.

The remaining sections (10. - 18. ecc.) contain descriptions relating to the intervention procedures.

In this manual, graphic representations and symbols are used instead of descriptions of mechanical parts, operations or methods of intervention.

Example:



Con rod small end diameter

Big end bearing seat

Tighten to torque

ENGINES *Section 10 describes the operations for the removal and refitting of the engines, operations on the car and the fuel system, lubricating system and cooling system.*

The overhaul procedures for the individual engines are contained in sections with the following publication numbers:

Engine	Publication no.	Order no.
1370 12V	504.589/19	604.89.774
1581 16V	504.589/20	604.89.781
1747 16V	504.589/18	604.89.192
1998 20V	504.589/22	604.89.795
1910 TD	504.593/13	604.44.220
2387 TD	504.593/14	604.44.311

The first 4 sections are included in the Petrol Engine Overhaul Manual Volume 3, while the last four are included in the Diesel Engine Overhaul Manual Volum 2.

GEARBOXES *Section 21-27 describes the operations for the removal and refitting of the various gearboxes. The procedures for the bench overhaul of the various mechanical gearboxes are published in separate sections with the following publication numbers:*

505.023/08 Included in the Gearbox Overhaul Manual
505.023/03 Included in the Gearbox Overhaul Manual
505.023/18 Included in the Gearbox Overhaul Manual 2nd volume

THIS PUBLICATION IS LOOSE-LEAF SO THAT MODEL UPDATES CAN BE ADDED.

When using chemical products, closely follow the accident prevention instructions on the safety leaflet which the supplier must give to the user (in Italy in accordance with D.M. no. 46/1992)

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The **Fiat Marea** is a 5-door saloon with monocoque body, transverse-mounted engine and front-wheel drive.

It is made with different engines.

The engines are with 4 or 5 cylinders in line, clockwise rotation, and positioned transversally at the front.

The following engines are fitted, depending on the version:

1370 cm³ four cylinders in line, 12 valves, running on unleaded petrol and delivering a power of 59 kW (80 bhp) at 6000 rpm.

1581 cm³ four cylinders in line, 16 valves, running on unleaded petrol and delivering a power of 76 kW (103 bhp) at 5700 rpm.

1747 cm³ four cylinders in line, 16 valves, running on unleaded petrol and delivering a power of 83 kW (113 bhp) at 5800 rpm.

1998 cm³ five cylinders in line, 20 valves, running on unleaded petrol and delivering a power of 108 kW (147 bhp) at 6100 rpm.

1910 TD cm³ four cylinders in line, 8 indirect injection valves, running on diesel and delivering a power of 55 kW (75 bhp) at 4200 rpm.

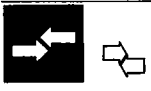
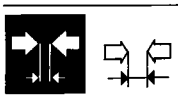
1910 TD cm³ four cylinders in line, 8 indirect injection valves, running on diesel and delivering a power of 74 kW (100 bhp) at 4200 rpm.

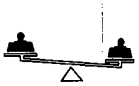
2387 TD cm³ five cylinders in line, 20 indirect injection valves, running on diesel and delivering a power of 91 kW (124 bhp) at 4000 rpm.

The **Fiat Marea Weekend** is a 5-door estate with monocoque body, tranverse-mounted engine and front-wheel drive.

It is produced with 7 different engines.

The engines are the same as those fitted to the **Fiat Marea**.

	Remove Disconnect
	Refit Connect
	Dismantling Disassembly
	Fitting Reassembly
	Tighten to torque
	Tighten to torque plus angle
	Fully tighten
	Stake nut
	Adjustment Regulation
	Visual check Check
	Warning
	Lubricate Damp
	Replacement Original parts
	Bleed the braking system
	Surface to be machined After machining
	Interference Force fit
	Dimension to be measured Measurement – Check Thickness - Clearance
	Rolling torque

	Inlet
	Exhaust
	Operation
	Tolerance Weight difference
	Preload
	Rotation
	Compression ratio
	Selection Classes
 Oversized O'sized to .... Maximum	Undersized U'sized to .... Idling
	Rpm
	Ratio
	Pressure
	Temperature
	Temperature $<0°C$ Cold Winter
	Temperature $>0°C$ Hot Summer
	Windscreen wiper with pump washer fluid
	Rear window wiper with pump washer fluid
	Engine

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This manual describes the maintenance operations and normal working procedures carried out in the workshop.
It contains the specific **WARNINGS** AND **SAFETY INSTRUCTIONS**to be carried out to ensure the safety of the vehicle and that its safety characteristics are maintained, and especially to ensure that operators work safety with no personal risks.

The warnings given are the most important and significant. However, they cannot cover all the risks associated with the operating methods with which repair interventions can be carried out and the relevant possible consequences.

Any person wishing to carry out maintenance procedures and using tools recommended by Fiat Auto must nevertheless make sure that the safety of persons and the vehicle is not put in jeopardy.

IN EACH COUNTRY, HOWEVER, IT IS NECESSARY TO OBSERVE THE CURRENT SAFETY INSTRUCTIONS CONCERNING WORKSHOPS.
ALWAYS REFER TO THE SPECIAL SIGNS DISPLAYED IN THE WORKSHOP.

The words **WARNING** and **ATTENTION** indicate the procedures to be followed with particular care to prevent accidents to staff or damage to the car's components:

WARNING: used when insufficient care could cause damage to persons.

ATTENTION: used when insufficient care could cause damage to the vehicle or parts of it.

GENERAL WARNINGS

All the operations must be carried out with the maximum attention and care to avoid damage to the vehicle and persons.

- The use of special tools is indicated for some procedures. These tools are essential for working safely and to avoid causing damage to the parts involved in the procedure.

- If necessary, mark all electrical wires and pipes to avoid reconnection errors.

↙ To detach parts which are stuck to each other, use an aluminium or lead hammer for ferrous materials, and a wooden or resin hammer for light alloy parts.

- Protect adequately with adhesive tape or rags all parts of the engine which, left uncovered after dismantling, present entry passages for dust or foreign bodies.

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- During refitting, lubricate the parts, where necessary, to prevent seizure or stiffness during the initial operating period.
- When refitting, it is essential to observe the tightening torques and any other adjustment data.
- When refitting, it is essential to reposition correctly and carefully wiring, piping and heat shields.
- During reassembly, replace seals, oil sealing rings, spring washers, safety plates, self-locking nuts and all parts that may be damaged.

- Assemblies or parts which are removed must be replaced using only **ORIGINAL SPARE PARTS**: only in this way can the interchangeability and perfect operation of the various components be ensured.

Safety supports

- If it is necessary **to raise the vehicle**, use a suitable hydraulic jack which meets current requirements, and position the specific safety supports on the support points indicated in this manual.
- Ensure that the car CANNOT IN ANY way slide off the supports and fall while you are working. Make sure that the jacks and safety supports have been fitted correctly.
- Apply the handbrake and lock the rear wheels to prevent the car sliding off the safety supports.
- If necessary **remove the engine**, gearbox and other heavy units, and check that the lifting hooks have been fitted correctly. Do not go under raised components.

Protection of fittings

- Remove or cover the interior fittings of the car (upholstery, instruments, carpets).
- Cover glass, instruments, upholstery and carpets with heat-resistant materials before undertaking welding operations.

Protection of external components

- When external components are removed (bonnet, boot, mouldings, trim pieces), the surfaces of the bodywork must be protected to prevent scoring, using appropriate equipment or cloths, protective tape or other materials.

PROTECTING THE ENVIRONMENT

- NEVER discharge the liquids contained in the vehicle (engine oil, gearbox oil, brake fluid, etc.) in the sewerage network or other environments, but comply with current regulations concerning correct disposal.
- DO NOT discharge refrigerant from the air conditioning system into the open air, as it could be dangerous to the environment. Use only the special equipment to drain the system.
- Do not burn used products (e.g. tyres, plastic parts, etc.).
- Do not abandon batteries or other components containing chemicals in the environment; instead scrap them correctly.

Chemicals: regarding the use of chemicals, closely follow the legislation in each country.

OPERATIONS IN THE ENGINE COMPARTMENT

The engine compartment contains several moving parts, parts at high temperature and high-voltage cables which could be dangerous.

The instructions below should be followed closely:

- **Do not touch hot surfaces**
- **Do not smoke and/or use naked flames**
- **Do not work on moving components**
- **Do not wear scarves, ties or rings while working**

Engine oil 

- Do not dispose of oil in the sewereage network or other environments, but conform to current regulations concerning correct disposal of waste oil.
- Engine oil is harmful to skin: reduce the contact of oil with the skin to a minimum; in the case of contact wash with soap and water.

Coolant 

- When the engine is hot, the fluid in the cooling system is under pressure. To avoid leaks of boiling coolant, do not open the cap until the engine is cold.
- When pouring coolant, take care not to pour it on electrical or painted parts. If coolant is spilled, clean it off immediately.

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Brake fluid

- Avoid leakage of brake fluid on painted surfaces, as the paint could be damaged; if the fluid is accidntally spilled onto paint, remove immediately with water.

- Cover pipe connections to prevent leakage of fluids.

- Before proceeding with refitting, make sure that dust and other impurities have been cleaned off all the parts.

SAFETY SYSTEM WITH AIR BAG AND/OR PRETENSIONERS

Some versions are fitted with a safety system comprising an AIR BAG cushion located on the steering wheel and another on the passenger's side of the dashboard.
In addition, there may be seat belt pretensioners on the front seats.

WARNING

These devices contain a PYROTECHNIC CHARGE:
there are therefore particular provisions concerning their correct handling; these instructions are described in detail in this manual: see "Section 55 - Electrical system".

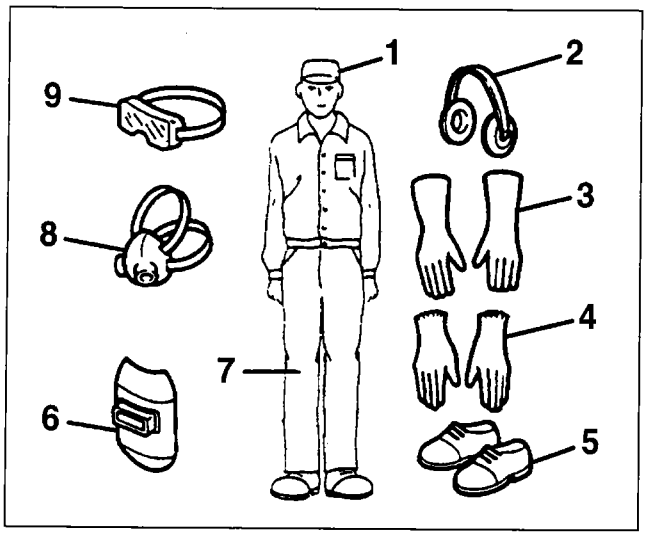
- The maintenance, dismantling or replacement of these components requires particular care and the use of specific methods and equipment, requiring the exclusive intervention of specially trained staff.

- Particular attention should also be given to operations on compnents located NEAR the above-mentioned devices.

BODYWORK

Protective clothing
Make sure that the following are used, depending on the operations to be carried out:

1. *Work cap*
2. *Ear defenders*
3. *Welding gloves*
4. *Gloves*
5. *Protective shoes*
6. *Protective visor*
7. *Boiler suit*
8. *Dust mask*
9. *Protective goggles*



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When welding

- Make sure to disconnect the battery before starting any repair work.
- If welding has to be carried out near the fuel tank, the fuel vapour separator or the fuel vapour filter, remove the latter from their seatings.
- Plug open pipe connections for fuel, fuel vapours and brake fluid pipes when the connections are disconnected.
- Remove electronic control units before carrying out electric-arc welding on the vehicle.

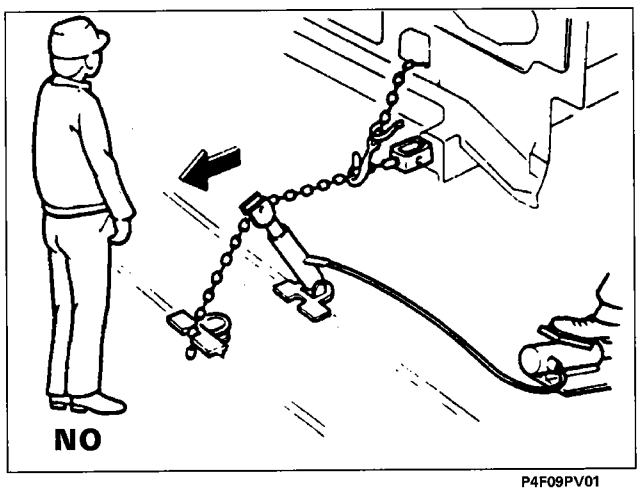
Working environment

- The environment must be well ventilated and lit, to ensure the safety of operators.
- As paints and sealants, if heated, can emit toxic gases, use a saw or pneumatic chisel in preference to an oxyacetylene torch for cutting and removing damaged metal panels.
- To remove paint from the metal panels, use a band sander or rotary brush.
- Use an appropriate extractor hood to contain dust.

Flammable materials

- Before using these materials, make sure that you have disconnected the battery.

Vehicle body straightener



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- Make sure that the straightener is used correctly in accordance with the equipment Manufacturer's Instructions Manual.
- During straightening of the damaged body shell, never stand in front of the straightener in the direction of exerting the traction force.

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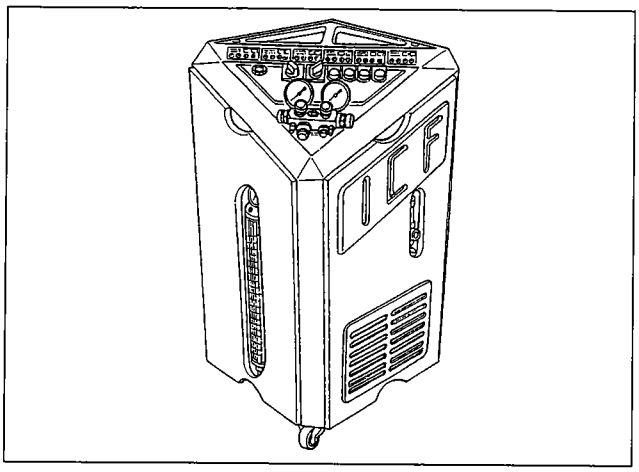
AIR CONDITIONER

- The coolant which accidentally leaks out of the air conditioning system or the emptying/filling device may become toxic if it is very close to naked flames or in the presence of certain metals (for example magnesium or aluminium) in the form of fine particles or powder. **It is therefore appropriate to work in the absence of naked flames and in ventilated environments with the extraction system switched on.**
- Avoid prolonged contact with the skin of fluid at the evaporation stage as the low temperature (approx. -25° C) can cause "scalding" because of excessive cold. **It is therefore appropriate to use leather or thick fabric gloves.**

- It is also essential to protect the eyes from contact with fluid at low temperature. **Always wear protective goggles.**

- Discharging fluid in the open air constitutes a danger to the environment.



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To empty the system, only use the equipment indicated in the manual.

- The fluid is stored under pressure in metal cylinders; never expose the cylinders to sun rays for prolonged periods: the increase in temperature increases the pressure, which could exceed the safety limit. Never leave the charging station cylinder completely full for prolonged periods. Never overturn the cylinder during pouring.

ELECTRICAL SYSTEM

Before undertaking any activity to electrical components, adopt and closely follow the precautions below:

- Remove rings, wrist watches and other metal objects.
- Disconnect the battery whenever wiring has to be removed or when delicate operations have to be carried out on the electrical system.
- Do not fast charge the battery, except after disconnecting the earth cable, so as not to damage the alternator diodes.
- Never try to turn the engine with the battery's earth cable loose, in order not to cause serious damage to the wiring.
- When working on the car's electrical system, never pull wires or wiring using force, as the wires could be inadvertently disconnected from the connectors or terminals.
- Disconnect all the control units and electronic devices when carrying out arc welding on the body shell.
- When replacing fuses, make sure that the new fuse is of the correct rating. Do not use fuses of a higher or lower rating.

BE CAREFUL: ELECTRIC ARCS:	even though the voltage of the electrical system is only 12V, the battery can cause high currents in the case of short circuits, causing arcs or sparks which can cause danger to the operator or start a fire.
BE CAREFUL: HIGH VOLTAGES:	the electronic ignition system generatores voltages of 20,000 V and above, which could be very dangerous to persons. Work very cautiously on or near such components.
BE CAREFUL: FIRES:	do not smoke when working near the battery or components which heat up during use (e.g. halogen bulbs), or inside the engine compartment when the engine is still hot. ALSO take the utmost care to avoid burns or damage to tools or components.

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SYMBOLS

PLATES are fitted to some components of the vehicle with appropriate symbols for drawing the operators' attention to certain precautions or behaviour which is recommended or even required mandatorily.

The following table gives these plates with the component concerned and the meaning of the symbol:

DANGERS:

SYMBOL	COMPONENT	MEANING
 P4F12PV01	Battery	Corrosive liquid
 P4F12PV02	Battery	Protect your eyes
 P4F12PV03	Battery	Explosion
 P4F12PV04	Electric fan	Can also start with the engine off
 P4F12PV05	Coolant reservoir	Do not remove cap when engine is hot
 P4F12PV06	Ignition coil	High voltage
 P4F12PV07	Belts and pulleys	Moving parts: do not approach
 P4F12PV08	Air conditioner pipe	Gas under pressure: do not disconnect

NOT PERMITTED:

SYMBOL	COMPONENT	MEANING
 P4F13PV01	Battery	DO NOT expose to naked flames
 P4F13PV02	Heat shields Belts - Pulleys Electric fans	DO NOT bring the hands close
 P4F13PV03	Jack (supplied with car)	DO NOT use for repairs

WARNINGS:

SYMBOL	COMPONENT	MEANING
 P4F13PV04	Engine oil	Use only specified oil
 P4F13PV05	Power steering	DO NOT exceed the maximum level in the reservoir Use only the specified fluid
 P4F13PV06	Brake fluid	DO NOT exceed the maximum level in the reservoir Use only the specified fluid
 P4F13PV07	Catalytic converter	Do not park the vehicle or do not place the catalytic converter on flammable surfaces
 P4F13PV08	Windscreen wiper	DO NOT exceed the maximum level in the reservoir Use only the specified fluid

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