FIAT cab for "series 90" tractors

Workshop manual

FIATAGRI

Reprinted

FIAT
Trattori

"Series 90" wheeled tractors
FIAT Cab

Workshop manual

Servizi Tecnici di Assistenza

IMPORTANT

All information herein is correct at the time of printing but is subject to alteration without prior notice. In case of discrepancies, contact the nearest dealer, distributor or branch.

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CONTENTS

SPARE PARTS

Use exclusively **FIATAGRI spare parts**, showing the trade mark indicated below.

These are the only spares that ensure the quality, durability and safety of original parts as they are the same as those installed in production.
Only **FIATAGRI spare parts** can offer this guarantee.
When ordering spare parts please state:
— Tractor model (marketing code) and frame number.
— Engine type and number.
— Part number (see "Microfiches" or Spare Parts Catalogue).

SERVICE TOOLS

The service tools indicated in this manual are:
— Designed specifically for tractors of the FIATAGRI range.
— Essential for reliable repair work.
— Manufactured and tested to offer efficient and durable service.
Service personnel are also reminded that being properly equipped means:
— Operating in optimum working conditions.
— Obtaining the best results.
— Saving time and effort.
— Working in safety.

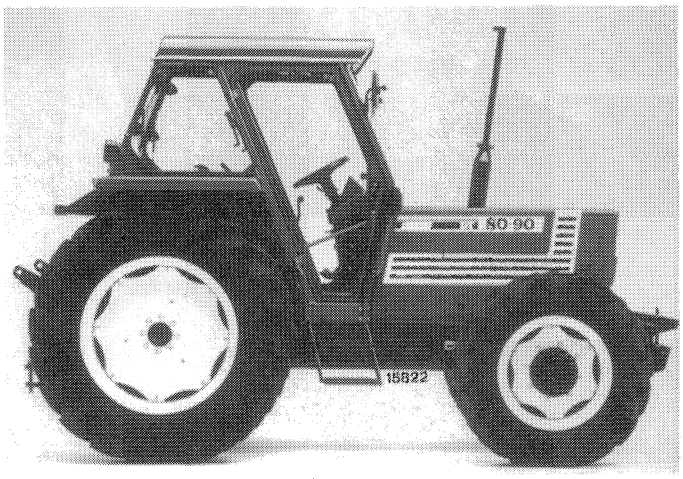
NOTE

"Front", "rear", "right" and "left" references are intended with operator facing direction of forward travel.

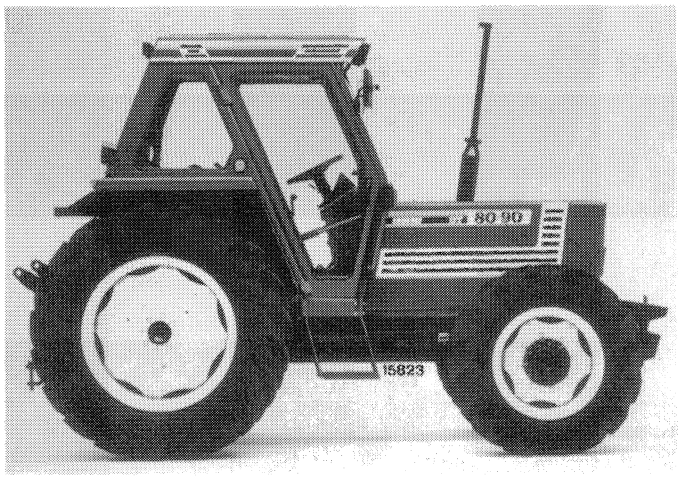
COMFORT CAB

SUPERCOMFORT CAB

CAB VERSIONS



COMFORT



SUPERCOMFORT

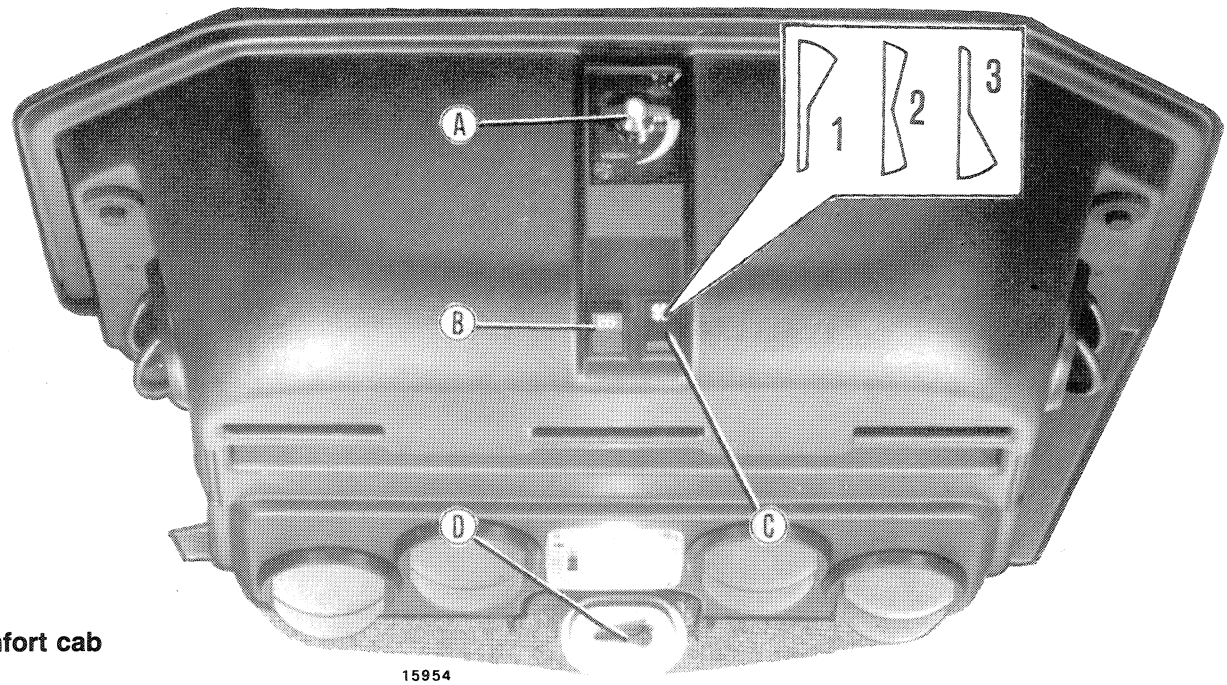
MODELS	COMFORT CAB	HEATED AND VENTILATED SUPERCOMFORT CAB	AIR CONDITIONED SUPERCOMFORT CAB
180-90	NO	YES	YES
160-90	NO	YES	YES
140-90	NO	YES	YES
130-90	YES	YES	YES
115-90	YES	YES	YES
100-90	YES	YES	YES
90-90	YES	YES	YES
80-90	YES	YES	YES
70-90	YES	YES	YES
60-90	YES	YES	YES
55-90	YES	YES	YES

PAINT SPECIFICATION

Paint products used are synthetic enamels with melamine-acrylic resins.

TA/19	Brick red
TA/2	Brown
TA/21	White
TA/8	Black

CONTROLS



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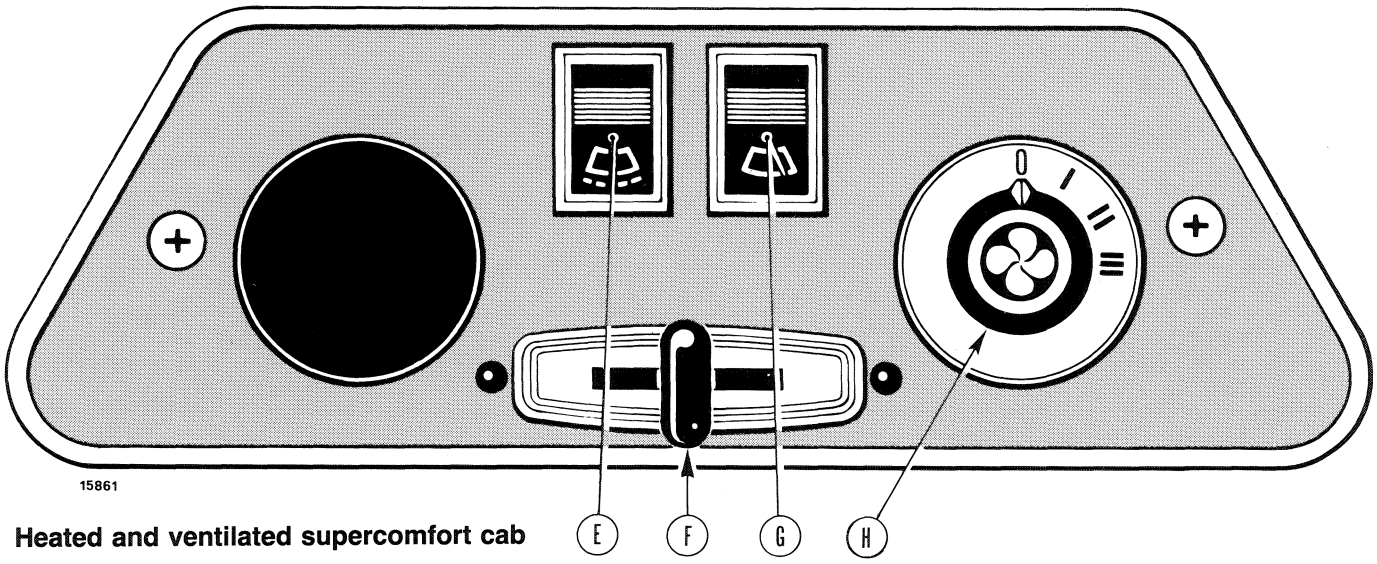
Comfort cab



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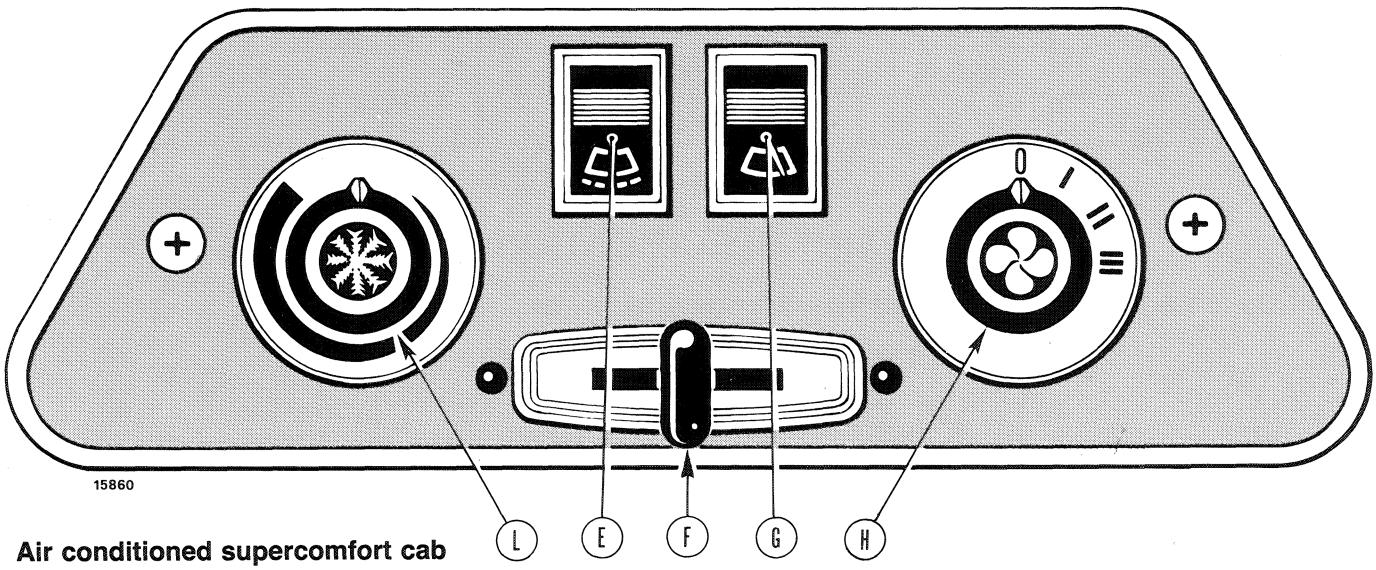
Heated and ventilated supercomfort cab



15860

Air conditioned supercomfort cab

A - Temperature control knob

— Up = minimum temperature.

— Down = maximum temperature.

B - Windshield washer

Energized with starter switch key in ON position.
To activate press switch B.
If washer nozzle is found to be obstructed, clean nozzle orifice using a pin.

C - Fan control switch

Energized with starter switch key in ON position.

Position	Fan speed
0	Off
1	Low speed
2	High speed

D - Windshield wiper switch

Energized with starter switch key in ON position.

Position	Windshield wiper
0	Off
1	On

E - Windshield washer

Energized with starter switch key in ON position.
To activate press switch E.
If washer nozzle is found to be obstructed, clean nozzle orifice using a pin.

F - Temperature control lever

For maximum air temperature move lever F rightwards (red sector).
Move lever to left to discontinue hot water circulation in cab, thereby reducing temperature (blue sector).

G - Windshield wiper switch

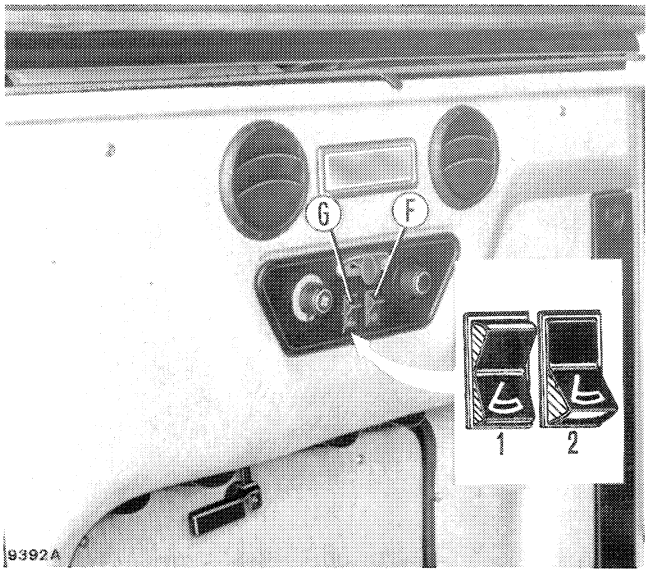
Energized with starter switch key in ON position.

Position	Windshield wiper speed
1	Low speed
2	High speed

H - Fan control switch

Energized with starter switch key in ON position.

Position	Fan speed
0	Off
I	Low speed
II	Medium speed
III	High speed



Operating positions of windshield wiper control.

L - Air conditioner ON/OFF and temperature control

Operational with starter switch key in ON position. With fan control in position I, II or III, turn knob clockwise to activate air conditioner and turn further clockwise to lower temperature in cab.

AIR CONDITIONING SYSTEM

THIS SYMBOL IS YOUR SAFETY ALERT SIGN

It warns against potential hazard to health and safety of personnel
and highlights precautions
to be taken to work safely. It means:

ATTENTION - DANGER - YOUR SAFETY IS INVOLVED

SAFETY PRECAUTIONS

Refrigerant must be handled with caution in order to prevent hazard.

Refrigerant can freeze skin or cause blindness.

If the refrigerant container is heated, the resulting refrigerant pressure increase may cause the container to explode.

In contact with open flames or heated metal surfaces, the refrigerant generates **phosgene** which is a toxic gas.

If inhaled, phosgene results in serious intoxication.

Adhere to the simple precautions indicated below to prevent the risk of injury.

- When discharging the system operate in ventilated premises far away from open flames.
  Similarly, do not bring open flames near the system.

- When charging and discharging the system protect operator's face in general and the eyes in particular from the refrigerant.

- In the event of an accident, proceed as follows:

  — If refrigerant has come into contact with the eyes, wash eyes immediately with a few drops of mineral oil and then bathe them thoroughly with a solution of boric acid and water (one teaspoonful of boric acid in 1/4 cup of water) and seek immediate medical help.

  — Freezing caused by liquid refrigerant can be treated by progressively warming the affected area with cold water and by applying an oily cream. Call a doctor immediately.

- Oil and refrigerant mixture inside the air conditioning system is pressurized.

  Consequently, never loosen fittings or tamper with lines. Before disconnecting refrigerant lines always discharge the system.

  Also, do not back off the oil level plug with the system charged.

- Before slackening any connection, cover the fitting in question with a cloth to prevent the refrigerant spray from reaching skin or eyes.

- Do not heat refrigerant container.

  Above 50°C, the increase in pressure due to heating is very sharp.

- Keep heat sources away from air conditioning system: an explosion could result.

SPECIFICATION

Air conditioning system

Refrigerant fluid	FREON 12
Capacity	1.7 kg / 3.74 lb
Maximum system pressure	16 to 20 bar/227 to 284 psi
Minimum system pressure	0.2 to 2 bar / 2.8 to 28 psi
High pressure switch setting	Opening - 20 bar / 284 psi Closing - 16 bar / 227 psi
Low pressure switch setting	Opening - 0.2 bar / 2.8 psi Closing - 2 bar / 28 psi
Circuit pressure (system stopped under load)	5 bar / 71 psi
Refrigerant temperature at condenser inlet	80-100°C
Refrigerant temperature on condenser outlet	60°C
Refrigerant temperature on evaporator outlet	1-15°C
Maximum centrifugal fan flow rate	8-8.5 m^3/min
Heater capacity at 35°C ambient temperature	4500 kcal/h

Compressor

Type	SANKYO SD-508 (Models 55-90, 60-90, 70-90, 80-90) SANKYO SD-510 (Models 90-90, 100-90, 115-90, 130-90, 140-90, 160-90, 180-90)
Number of cylinders	5
Bore and stroke	35 × 28.6 mm (SD-508) 36 × 31.7 mm (SD-510)
Displacement	138 cc (SD-508) 161 cc (SD-510)
Maximum permissible speed	6000 rpm (SD-508) 4000 rpm (SD-510)
Weight	5.1 kg / 11 lb (SD-508) 4.9 kg / 11 lb (SD-510)
Lubricating oil capacity	175 cc (SD-508) 135 cc (SD-510)

OPERATION

The air conditioning system is designed to provide a comfortable environment inside the cab so that the operator can work efficiently.

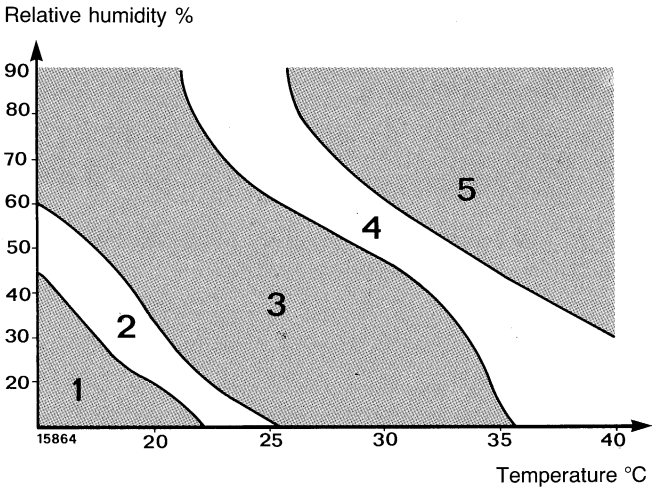
These conditions depend mainly on four factors, namely temperature, humidity, speed and cleanliness of air inside the cab.

Although optimum values cannot be fixed owing to different individual requirements, limits may be envisaged for the majority of individuals.

As regards temperature and humidity, an area of well being may be envisaged within which temperature and humidity provide satisfactory environmental conditions.

The chart shows how humidity should be between 30% and 70% (below 30% excessive dehydration causes nose and throat soreness, whereas above 70% excessive skin moisture is experienced) whilst temperature may vary between 18° and 28°C.

Air flow rate should not be excessive, to prevent annoyance and irritation. Normal values are 0.07-0.25 m/s.



Simplified temperature-humidity chart

1. Sensation of unbearable cold - 2. Sensation of cold - 3. Area of physical comfort - 4. Sensation of heat - 5. Sensation of unbearable heat.

No strict limits are defined for air cleanliness. However, it should be noted that the human body alters air composition in the surrounding environment, thereby raising humidity and the percentage of carbon dioxide resulting in decreased oxygen content, etc.

The above adverse effects may be rectified by drawing small amounts of external air. Accordingly, in view of the dusty conditions in which agricultural tractors are called upon to operate (ground processing, hay making, etc.) efficient dry air filters must be installed on the air intakes.

Air conditioners are thus installed on tractors and agricultural equipment to neutralize the causes of discomfort (heat and humidity) generated in the cab. The air conditioner modifies the thermal and hygrometric characteristics of interior air or intake air to obtain cooling and humidity agreeable to the operator.

The operating principle of the air conditioner is similar to that of a domestic refrigerator. To cool ambient air heat is removed through a physical process (evaporation of a liquid) which to take place absorbs heat from the surrounding environment.

The liquid utilized for the purpose is a fluid refrigerant consisting of difluorodichloromethane, known as Freon 12 or R 12, featuring a high refrigerating coefficient, low toxicity and good mixability with lubricating oils.

The air conditioning system consists mainly of the following:

— Compressor.

— Condenser.

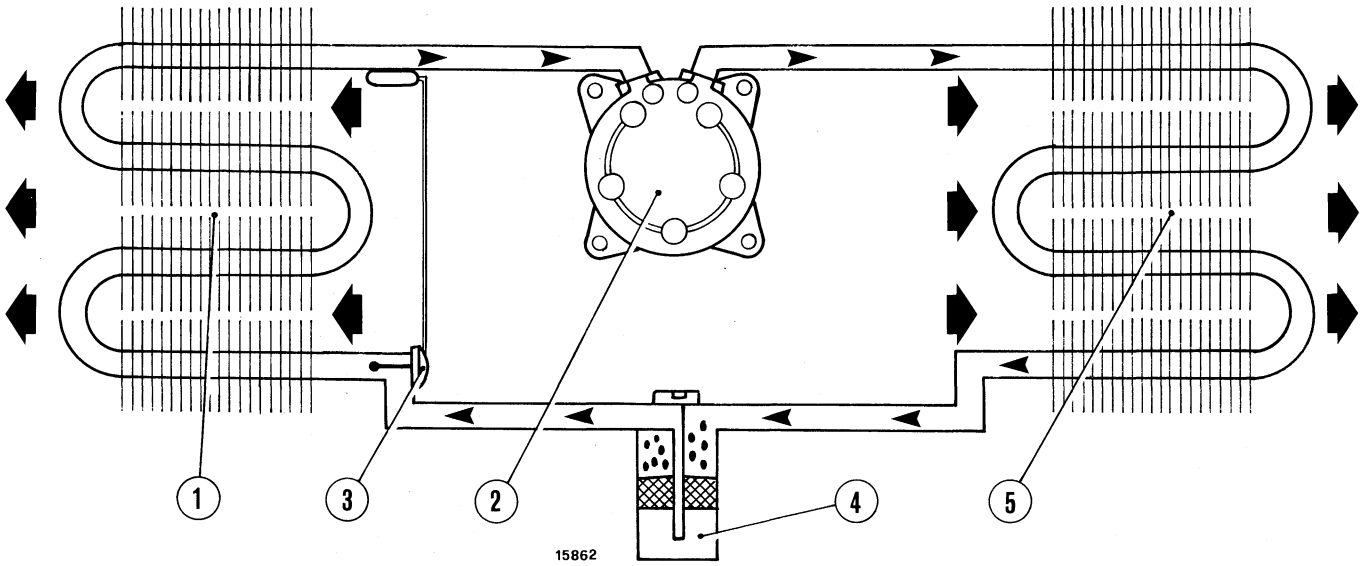
— Expansion valve.

— Evaporator.

Refrigerant lines connect the various components to one another and ensure that system pressure is maintained.

The compressor draws cold refrigerant vapour at 1-2 bar and compresses it to 10-15 bar.

Heated by compression to 80°-100°C, refrigerant vapour is admitted to condenser coil located ahead of the engine radiator.



Air conditoning system schematics

1. Evaporator - 2. Compressor - 3. Expansion valve - 4. Receiver-drier - 5. Condenser.

Ram air plus radiator fan air flow cool the refrigerant vapour by heat exchange.

Refrigerant vapour cools down to condensation point at approximately 60°C to become liquid.

Refrigerant liquid at hight pressure is directed to the expansion valve where a restriction controls the flow to lower refrigerant pressure.

As it goes through the valve, refrigerant liquid is transformed to a low temperature vapour and the resulting mixture of liquid and vapour refrigerant at low temperature and pressure enters the evaporator.

Here the fan provides continuous circulation of cab interior air onto the evaporator fins, thereby facilitating heat absorption by the refrigerant which is completely converted into vapour.

The refrigerant evaporation process removes heat from the air impinging on evaporator. As air is cooled cab interior temperature is reduced.

Air flowing on the cold surface of the evaporator also causes part of the water content of the air condense, resulting in reduced humidity inside the cab.

Low pressure refrigerant vapour from evaporator is again drawn into the compressor and a new cycle begins.

MAIN COMPONENTS

COMPRESSOR

The compressor is provided to compress and circulate refrigerant within the system.

Reciprocating axial compressor is driven from the engine crankshaft through V-belting.

Compressor operation is described below.

Actuator plate (2) resting on swash plate (1) carries ball jointed piston rods (3).

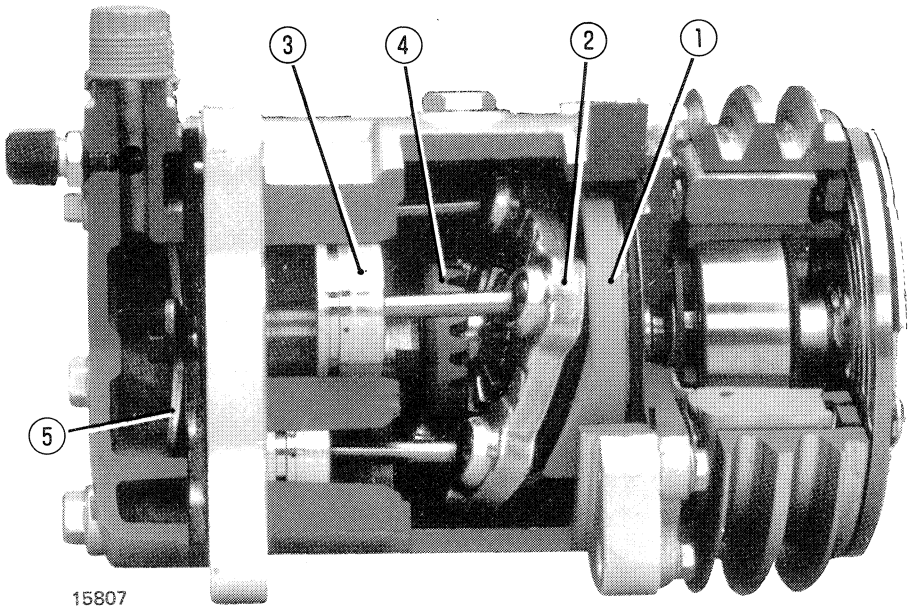
During rotation, swash plate exerts a continuous thrust on actuator plate which is prevented from turning by fixed gear (4) with which it is in mesh.

The angled surface of the swash plate relative to the rotational axis causes each piston to reciprocate endwise.

The cylinder head incorporates a single five-lobe reed valve (one lobe to each piston) designed to permit continuous suction and discarge in the cylinders concerned.

Valve opening and closing is automatic and depends on reed preload.

Compressor gearing is lubricated by means of special oil introduced during compressor production. A certain amount of this oil circulates mixed to the refrigerant.



SANKYO Reciprocating axial compressor

1. Swash plate - 2. Actuating plate - 3. Piston with gland - 4. Fixed gear - 5. Suction-discarge valve.

CONDENSER

The condenser is designed to convert refrigerant vapour into a liquid.

As the transformation occurs through heat transfer from the vapour to external ambient air the principle of operation of the condenser is similar to that of the engine radiator.

It consists of a finned tube assembly through which refrigerant is circulated. The thin aluminium foil fin pack pressed onto the tubes dissipates heat to the exterior.

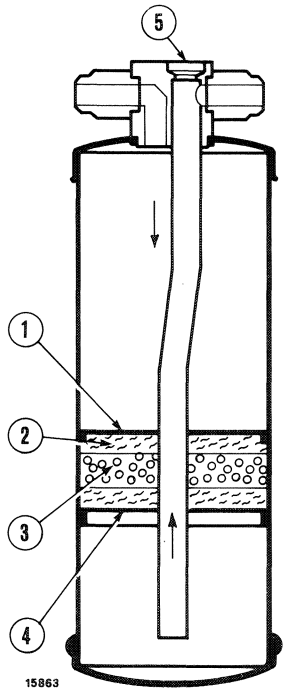
The condenser is mounted ahead of the engine radiator to take advantage of the best possible air flow conditions needed for heat exchange.

RECEIVER-DRIER

The receiver-drier mounted between condenser and expansion valve performs two basic functions. It acts as a filtering element to retain water and solids, and as a refrigerant reservoir during variable load conditions.

The elimination of water from the system is important to prevent corrosion which would adversely affect system components.

To this end, the filter contains suitable materials which absorb humidity.



Receiver-drier

1. Top shield - 2. Disc - 3. Drier pack - 4. Bottom shield - 5. Sight glass.

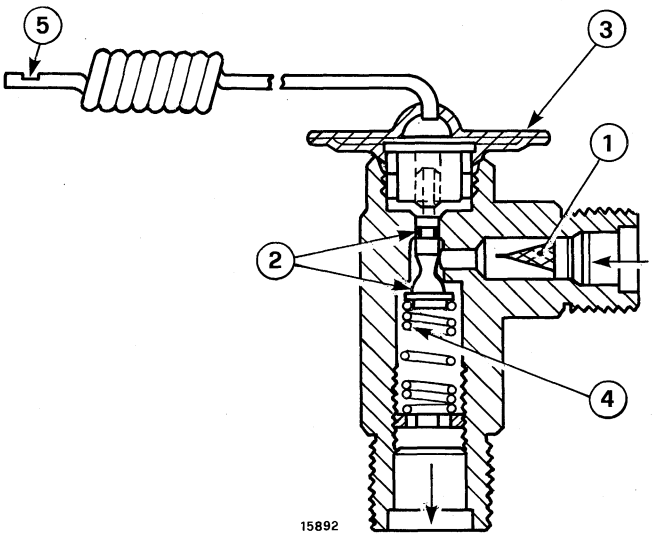
Similarly, solid particles such as grit, mechanical particles shed in the process of compressor wear, oxides, and particles shed by piping, could cause damage to the system and are therefore retained by suitable filters.

THERMOSTATIC EXPANSION VALVE

This valve is designed to reduce refrigerant pressure on condenser outlet to facilitate the conversion process in the evaporator, thereby removing heat from the ambient air to be cooled.

The expansion valve performs two basic functions:

— Metering function - A calibrated orifice inside the valve body produces a refrigerant pressure differential between inlet (liquid state) and outlet (mixed liquid-vapour state). The calibrated orifice is also designed to atomize the liquid to facilitate subsequent evaporation.



Thermostatic expansion valve

1. Strainer - 2. Modulator - 3. Diaphragm - 4. Spring - 5. Thermostatic sensor.

— Modulation function - A thermostatically controlled sensor inside valve body moves between extreme positions (fully open to fully closed) thereby metering the fluid flow through the valve. This ensures that the correct amount of refrigerant is allowed into the evaporator in order to obtain complete evaporation.

If the thermostatic sensor detects an increase in cab interior temperature, it increases the flow of refrigerant. As temperature decreases or compressor output increases (owing to increased engine speed) the sensor reduces refrigerant flow to the evaporator.

The expansion valve is mounted on evaporator inlet connection.

EVAPORATOR

The evaporator completes the refrigerating cycle.

From the expansion valve, refrigerant flows as a mixture of vapour and liquid at low temperature and pressure.

As it passes through the evaporator, refrigerant absorbs heat from the ambient to be cooled, vaporizes to produce the required amount of refrigeration and is subsequently drawn by the compressor in vapour form.

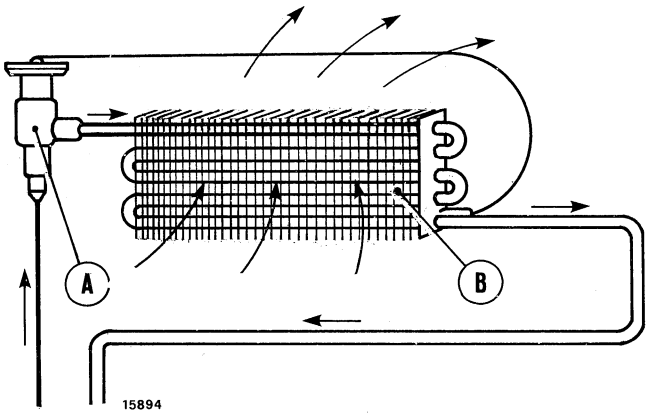
Evaporator operation is controlled by the expansion valve which meters the exact amount of refrigerant needed to produce the necessary cooling.

Evaporator function is opposite to that of the condenser. However, its basic construction is identical except for main dimensions and internal circuit configuration.

Moreover, the evaporator has the added function of dehumidifying the air.

As the air admitted to the evaporator contains a certain amount of moisture, if the latter is not carefully controlled and removed, optimum operator comfort in cab is not obtained.

Part of the moisture is eliminated in the form of condensate depositing on evaporator fins as air cools down.



Evaporator

A. Expansion valve - B. Evaporator

The centrifugal fan is installed in order to draw ambient air through the fins for cooling and dehumidification prior to delivery to the cab interior.

Fin assembly and fan enclosure incorporates a condensate drain trap provided with drain tubes.

The evaporator unit is installed in the cab roof.

REPAIR NOTES

- With a cold engine, conditioner starting may result in compressor damage. The air conditioner should only be operated after engine warmup and when cab interior temperature is 20°C.

- On line removal always seal piping ends with plastic plugs to prevent the ingress of moisture and dust.

- Thermostatic sensor tubes must be handled with care to prevent damage resulting in inefficient operation.

- When unscrewing fittings, always use a backup wrench to prevent undue torsion.

- Never use engine oil of any type to lubricate conditioner system and compressor.

- Do not leave compressor oil container open. Always ensure that it is tight as oil absorbs humidity which is detrimental to the system.

- Do not transfer compressor oil from its container to another.

- Do not reuse oil after draining.

- Do not add anything to refrigerant and to the oil. Any additive may contain substances which are incompatible with the chemical base of the refrigerant, resulting in downgrading of fluid characteristics.

- Always ensure that thermostatic sensors and system lines are in close contact, otherwise a layer of oxide will deposit between the pipes, thereby preventing correct operation.

CAB REMOVAL AND INSTALLATION

CAB REMOVAL TOGETHER WITH PLATFORM (Models 55-90, 60-90, 70-90, 80-90, 90-90, 100-90)

⚠ CAUTION ⚠

Lift and handle all heavy parts with a lifting device of proper capacity. Be sure parts are supported by proper slings and hooks. Watch out for people in the vicinity.

⚠ CAUTION ⚠

Handle all parts with extreme care. Keep hands and fingers from between parts. Wear authorized protective equipment such as safety goggles, heavy gloves and safety shoes.

When removing cab together with platform note the following points:

— Disconnect battery ground lead.

— Take off side panels, radiator grill and fixed center hood.

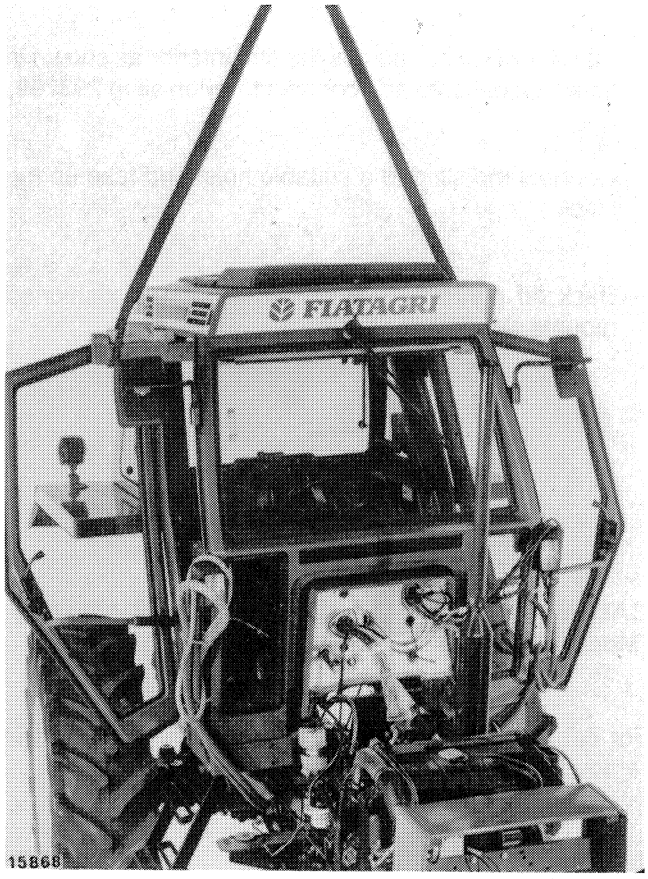
— Drain fuel and coolant.

NOTE - To drain radiator open heater cock by moving lever (F, Page 8) to red sector, back off plug on radiator hose and slacken filler cap slinghtly to facilitate coolant flow. After draining the required amount of coolant, tighten plug on radiator hose.

NOTE - On tractors equipped with air conditioner, after draining the system as directed on page 44, disconnect compressor and receiver-drier lines and carefully plug both lines and ports.

— Disconnect heater water inlet and outlet lines.

— Drain power steering system.



Removing-Installing cab with platform

1. Nylon sling **293769** - 2. Wood bar

— Disconnect hose between power steering control valve and rigid pipes, and delivery line between oil reservoir and pover steering control valve.

— Disconnect starter leads, instrument panel and cab wiring, hourmeter flexible shaft, and both throttle link and flexible shaft.

— Shut off fuel cock and disconnect fuel delivery and return lines.

— Disconnect brake master cylinder line fittings.

— Disconnect hitch linkage, lift-o-matic flexible shaft, variospeed link and response control.

— Disconnect remote control valve lines.

— Disconnect park brake flexible shaft, differential lock link, PTO clutch link, master clutch link, belt pulley link, and PTO engagement and disegagement links.

— Remove transmission and splitter gear levers and take off cover and dust protectors.

— Insert a wood bar across the cab interior as shown in figure on page 23 and connect to nylon sling **293769**.

— Connect the sling to a suitable hoist and take up the slack.

— Back off platform retaining screws from cushioned mounts and lift off cab.

NOTE - In cold climates, check heater system filling as follows:

— Shut off heater cock (lever F, page 8, blue sector) and run engine at part throttle to warm up coolant.

— Cover radiator front with a sheet of paper to reduce warmup time.

— Open heater cock, turn on fan and check that air flowing from outlets (M, page 34) is warm.

NOTE - On tractors equipped with air conditioner, connect lines to compressor and receiver-drier and fill system as directed on page 38.

CAB INSTALLATION TOGETHER WITH PLATFORM (Models 55-90, 60-90, 70-90, 80-90, 90-90, 100-90).

For cab installation together with platform reverse the removal sequence, noting the following points:

— Drain brake system, adiust differential lock pedal, master clutch link, PTO link and lift link as directed in workshop manuals of the tractors concerned.

— Fill cooling system and heating system as follows:

- Fill radiator with a mixture of water and FIAT PARAFLU 11 liquid and install filler cap.
- Close heater cock (lever F, page 8, blue sector), and run engine on part throttle for five to ten minutes (to preheat engine coolant).
- Remove radiator filler cap, open heater cock (lever F, page 8, red sector) and run engine at governed speed for five minutes.
- With engine running at high revs, top up through radiator until completely full and install filler cap.

REMOVAL AND INSTALLATION OF CAB WITHOUT PLATFORM (Models 55-90, 60-90, 70-90, 80-90, 90-90, 100-90).

To remove cab without platform proceed as follows:

— Disconnect battery ground cable, heating and ventilation system wiring and windshield washer wiring from water pump on rear tank.

— Empty windshield washer liquid tank and disconnect washer supply line. Drain 5 to 6 liters of coolant from radiator and disconnect heater system lines from water pump.

NOTE - For radiator draining follow instructions given on page 19.

— On tractors provided with air conditioner, after draining the system as directed on page 44, disconnect lines from compressor and receiver-drier and carefully plug both lines and fittings.

— Remove plugs and back off two screws retaining oddments tray to instrument panel, undo clip below platform, bundle windshield washer wiring and line together with tape and remove.

— Remove bottom and side running board strips on both right and left sides of cab.

— Take off black plastic trims from both sides of control board.

— Remove parking and turn signal lamps from right and left cab handrails, disconnect the lamps from the associated wiring and remove wiring from the associated protection.

— Take off right and left pillar trim panels.

— Remove hand throttle and lift-o-matic controls and separate from control cables.

— Remove ashtray and back off bolt inside ashtray housing.

— Remove right and left door check retainers (cable will wind automatically inside handle/handrail).

— Remove side window retainers and take off right and left side trim panels.

— Remove back light bottom retainer, back off two screws and take off rear interior trims.

— Place a wooden bar inside cab as shown in figure and connect to nylon sling **293769** hanging from a suitable hoist.

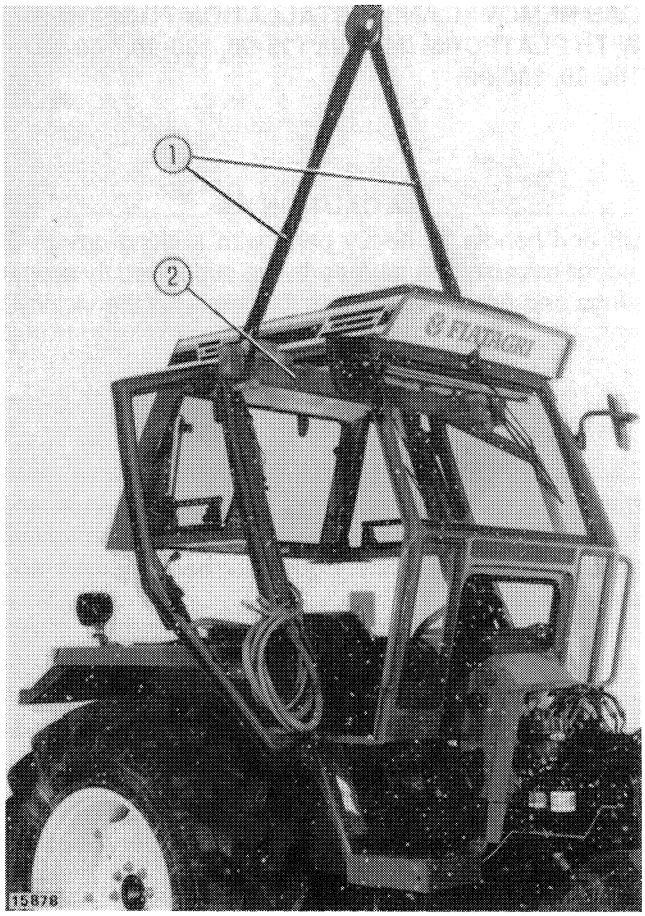
— Back off two screws on each side below platform next to access steps.

— Back off eleven screws on each side retaining cab to fenders.

— Empty the fuel tank, back off tank screws in each upper corner and tilt tank backward.

— Back off two screws on each side retaining cab to fender crossmember.

— Raise cab 20 to 30 cm, remove heater lines by hand (and air conditioner lines where applicable) freeing them from the engine. Also remove windshield washer line. Tie all lines to the cab as shown in figure. Lift off cab.



Removing and installing cab without platform

1. Nylon sling **293769** - 2. Wood bar

For cab installation adopt a reversal of the removal sequence. Lubricate front seal with soapy water. Ensure that the front seal is correctly seated on tractor hood.

Apply silicone sealer to the points previously treated with this product.

Fill windshield washer tank and engine cooling system plus heater following the instructions given on page 20.

Where applicable, fill air conditioning system adhering to the instructions given on page 38.

CAB REMOVAL AND INSTALLATION TOGETHER WITH PLATFORM (Models 115-90, 130-90, 140-90, 160-90, 180-90)

⚠ CAUTION ⚠

Lift and handle all heavy parts with a lifting device of proper capacity. Be sure parts are supported by proper slings and hooks. Watch out for people in the vicinity.

⚠ CAUTION ⚠

Handle all parts with extreme care. Keep hands and fingers from between parts. Wear authorized protective equipment such as safety goggles, heavy gloves and safety shoes.

To remove cab together with platform proceed as follows:

— Take off side panels and disconnect battery negative cable.

— Take off exhaust silencer.

— Remove two upper hood rear end retaining screws covered by plastic plugs, and upper hood front and rear bolts.

— Undo clip, separate precleaner from rubber hose for connection to air cleaner and take off upper hood with attached precleaner.

— Disconnect hourmeter flexible shaft and associated bracket for retention to engine, wiring from alternator, starter and instrument panel.

— Disconnect all wiring from cab instruments and indicators.

— Drain coolant and disconnect water delivery and return lines. Also disconnect air conditioner lines from push-in fittings with valves where applicable.

NOTE - When draining radiator coolant, move heater control lever in cab to red sector.

— Disconnect hydrostatic power steering hoses from pipes and brake hydraulic lines.

— Disconnect throttle and shut-off linkage from injection pump removing guide bracket bolted to transmission casing.

— Disconnect lines from main fuel tank (after draining), from fuel feed pump, from injection pump, from fuel leak-off ports on injectors, from hitch and remote control valves, and from rear flange carrying quick release couplings.

— Disconnect actuating links from hitch, VARIOSPEED device (sensitivity control), response control, and LIFT-O-MATIC flexible shaft.

— Disconnect front wheel drive engagement lever link, park brake link, differential lock link, master and PTO clutch links, creeper or mechanical reverser link (as applicable) and, on model 115-90, PTO engagement lever link.

— Back off transmission and splitter vertical link retaining screws through apertures in platform.

— Place a wood bar through the cab and connect a nylon sling **293769** to the protruding ends. Hook sling to a suitable hoist.

— Take up the slack on the hoist.

— Back off six screws retaining platform to cushioned mounts and lift off cab complete with platform.

For cab installation adopt a reversal of the removal sequence paying particular attention to prevent interchanging the heating system lines.

REMOVAL AND INSTALLATION OF CAB WITHOUT PLATFORM (Models 115-90, 130-90, 140-90, 160-90, 180-90)

To remove cab without platform proceed as follows:

— Take off side hood panels and disconnect battery negative cable.

— Remove exhaust silencer.

— Remove two upper hood rear end retaining screws covered by plastic plugs, and upper hood front and rear bolts.

— Undo clip, separate precleaner from rubber hose for connection to air cleaner and take off upper hood with attached precleaner.

— Disconnect wiring from windshield washer system and cab instruments and indicators.

— Drain coolant and disconnect heating system lines, windshield washer line from bottle and conditioning system lines from couplings (if applicable).

NOTE - When draining radiator coolant, move heater control lever in cab to red sector.

— Remove parking and turn signal lamps from right and left cab handrails, disconnect the lamps from the associated wiring and remove wiring from the associated protection.

— From inside cab remove side pillar trim, upper and lower moldings and instrument panel side moldings.

— Take off side and rear padded trim.

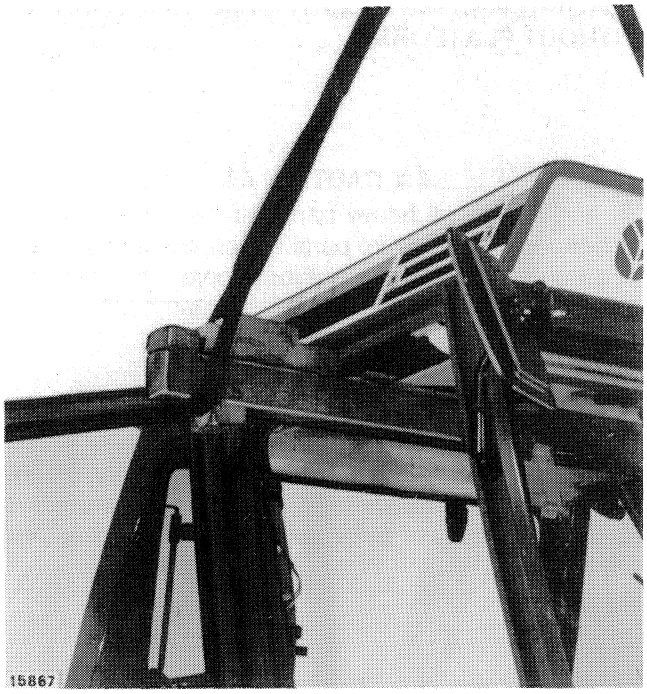
— Place a wood bar through the cab and connect a nylon sling **293769** to the protruding ends. Hook sling to a suitable hoist.

— Take up the slack on the hoist.

— From inside cab back off four screws retaining cab to fenders.

— Remove plugs and back off two screws retaining oddments tray to instrument panel.

— From outside the cab, back off eleven screws retaining rear crossmember to cab and fenders.



Positioning wood bar inside cab

— From outside the cab, back off four front retaining screws (two on each side) below access steps, ten side retaining screws on fender lower end and six retaining screws from vertical fenders.

— Slightly raise cab, check for fouling and lift off.

For cab installation adopt a reversal of the removal sequence paying particular attention to prevent interchanging the heating system lines.

Apply silicone sealer to the points previously treated with this product.

REMOVAL AND INSTALLATION OF COMFORT CAB WITHOUT PLATFORM

⚠ CAUTION ⚠

Lift and handle all heavy parts with a lifting device of proper capacity. Be sure parts are supported by proper slings and hooks. Watch out for people in the vicinity.

⚠ CAUTION ⚠

Handle all parts with extreme care. Keep hands and fingers from between parts. Wear authorized protective equipment such as safety goggles, heavy gloves and safety shoes.

To remove cab without platform proceed as follows:

— Take off side hood panels and disconnect battery negative cable.

— Remove top center hood.

— Disconnect windshield washer system and cab equipment wiring.

— Drain coolant and disconnect heating system lines, and windshield washer line from bottle.

NOTE - When draining coolant turn heater cab control to open position.

— Remove parking and turn signal lamps from right and left cab handrails, disconnect the lamps from the associated wiring and remove wiring from the associated protection.

— Drain fuel and remove fuel tank.

— Place a wood bar through the cab and connect a nylon sling **293769** to the protruding ends. Hook sling to a suitable hoist.

— Take up the slack on the hoist.

— From inside the cab, remove blanking plugs and back off two screws retaining oddments tray to instrument panel.

— Remove center side pillar trim and back off four screws retaining cab to fenders.

— From outside the cab, back off four front retaining screws (two on each side) below access steps, ten side retaining screws on fender lower end and four retaining screws from vertical fenders.

— From outside the cab, back off eight screws retaining cab to rear fenders.

— Slightly raise cab, check for fouling and lift off.

For cab installation adopt a reversal of the removal sequence paying particular attention to prevent interchanging the heating system lines.

Apply silicone sealer to the points previously treated with this product.

REAR WINDOW GLASS REPLACEMENT

To remove the glass proceed as follows:

— Back off handle lock ring and take off the handle.

— Back off the two vertical link lock rings.

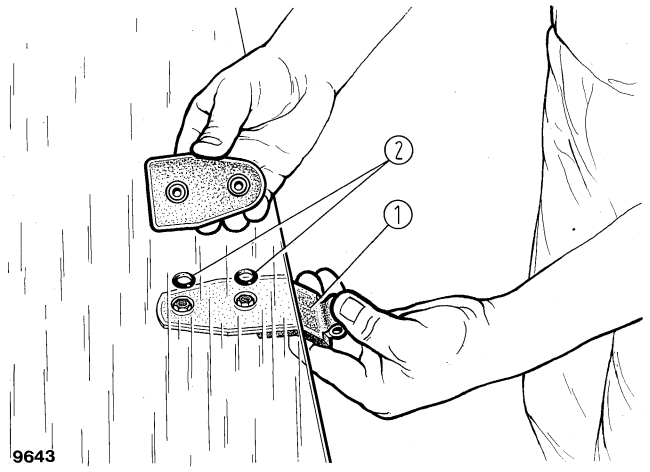
— Using a 4 mm wrench, back off four hinge cap screws from inside the cab and lift off the glass retrieving the two sealing rings (2).

To install the glass proceed as follows:

— Preassemble handle on bench.

— Place glass over the hinge, position sealing rings (2) in glass holes, position hinge inner plate and tighten the retaining screws using wrench **293512**. The correct torque is 12-14 Nm (1.2-1.4 kgm, 8.8-10.3 ft.lb).

— Connect vertical links to glass by tightening the associated lock rings.



Installing rear window hinges

1. Hinges - 2. Sealing rings.

NOTE - On glass replacement also replace sealing rings.
When installing the glass onto the cab lubricate the seals with FIAT PARAFLU 11 or soapy water.
Do not use oil or grease otherwise seal efficiency will be jeopardized.

REAR WINDOW HINGE REPLACEMENT

To install rear window hinge proceed as follows:

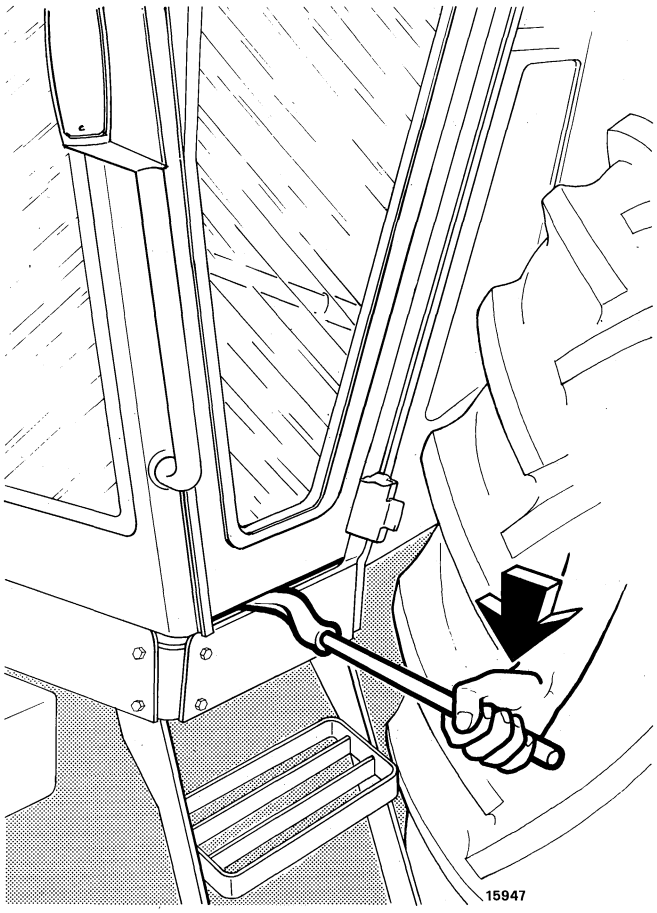
— Preassemble handle on bench.

— Place lower half of hinge on glass, insert sealing rings (2) in glass holes, rest inner hinge plate in position and tighten the retaining screws to 12-14 Nm (1.2-1.4 kgm, 8.8-10.3 ft.lb) using wrench **293512**.

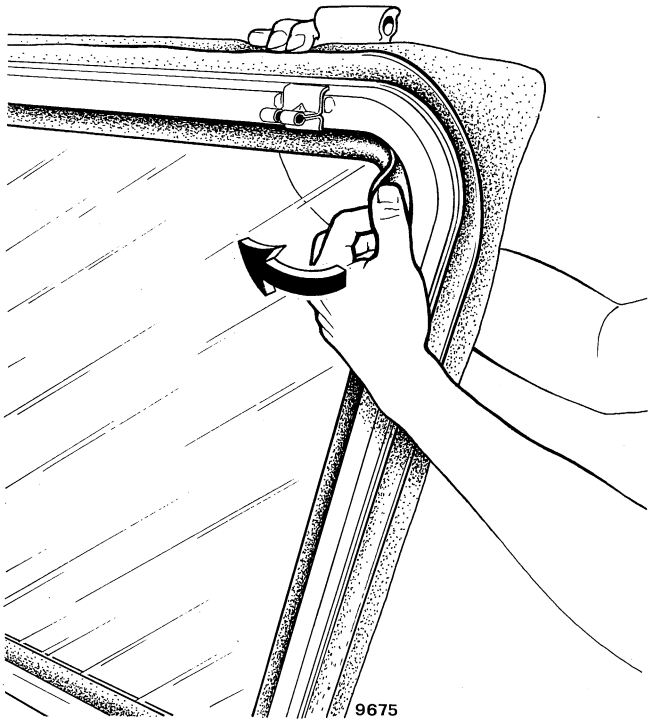
— Place glass on tractor, position uppermost and tighten upper screws first (one per hinge) followed by lower screws (two per hinge) to 24-29 Nm (2.3-3 kgm, 17.7-21 ft.lb).

— Connect vertical links to glass tightening the associated lock rings.

NOTE - During the above operation, push glass fully upward to obtain maximum possible clearance between cab and lower end of glass and to facilitate glass assembly in horizontal position.

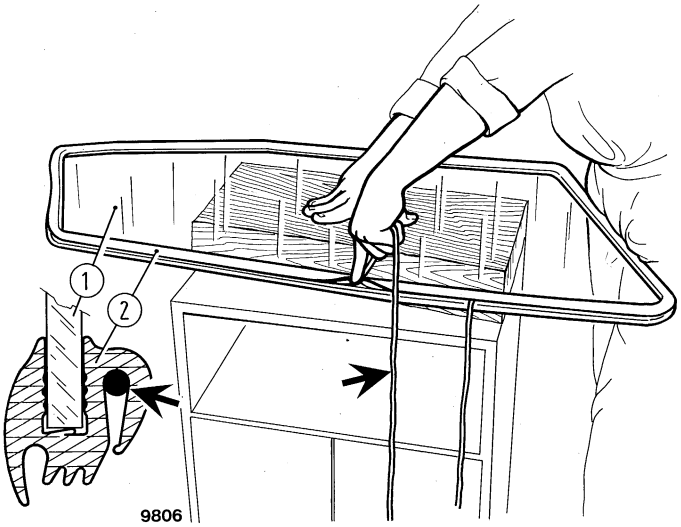


Adjusting door hinges



Replacing door window

Direction of pressure to be applied to weatherstrip and glass arrowed.



Installing string on glass weatherstrip

String position on weatherstrip arrowed.

1. Windshield - 2. Weatherstrip.

DOOR REMOVAL AND ADJUSTMENT

Door removal

Proceed as follows for each door:

— Take off retaining ring from inner door check cable retaining pin and remove pin.

— Proceed likewise for outer hinge pins and lift off doors.

Door hinge adjustment

Proceed as follows for each door:

— Remove door check cable pin.

— Remove two cab center pillar trim panels.

— Slacken inner hinge screws.

— Adjust door position ensuring that the gap between door and cab is the same all around.

NOTE - To facilitate the operation use a crowbar (see page 25) suitably taped or coated with rubber material to prevent damaging the paintwork.

— Torque hinge inner screws to 29-34 Nm (3-3.5 kgm, 21.4 ÷ 25.1 ft.lb).

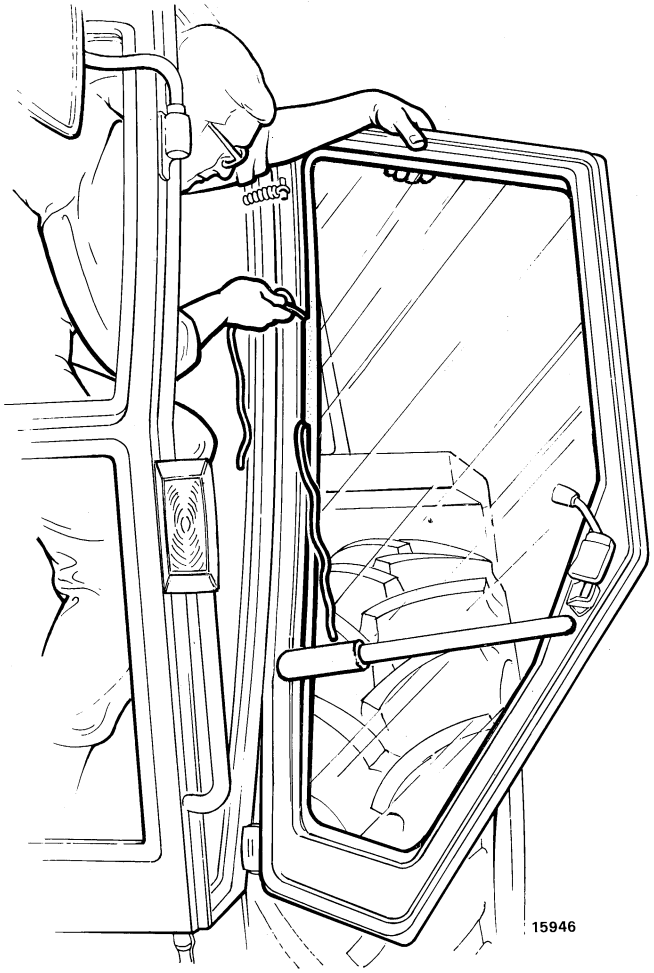
Door lock adjustment

If the doors do not shut properly or if once shut, door chatter is experienced proceed as follows:

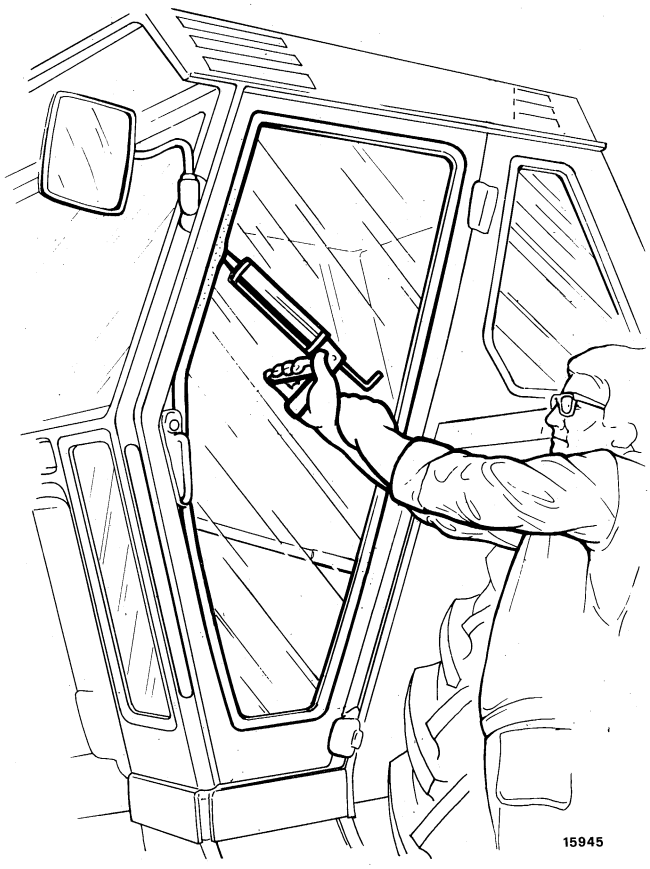
— Slacken lower striker on cab and move outwards if the door does not shut properly, or inwards if chatter is experienced with door shut.

— Slacken two upper striker retaining screws on cab and proceed as directed for lower striker.

— Check for correct adjustment.



Applying sealer between weatherstrip and glass



Installing door glass

CAB GLASS REPLACEMENT

1. Door glass replacement

To remove glass proceed as follows:

— Working from inner side raise weatherstrip on one upper corner and push the glass outwards with the palm of the hand until glass displacement is obtained.

— Apply pressure all along glass perimeter and lift off the glass.

CAUTION - Apply pressure with the palm of the hand only. Do not strike glass with fist or mallet.

For glass installation proceed as follows:

— Ensure that the weatherstrip is efficient. If the slightest anomaly is detected, replace weatherstrip without hesitation.

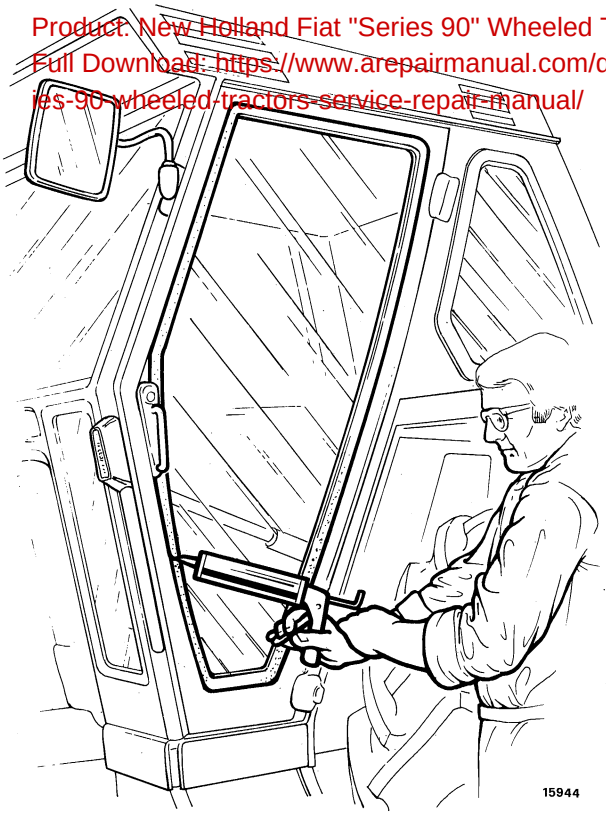
— Do not rest the glass on metal surfaces. Always interpose a wood block between glass and bench (see page 26).

— Clean areas of door and glass to be treated with sealer using gasoline.

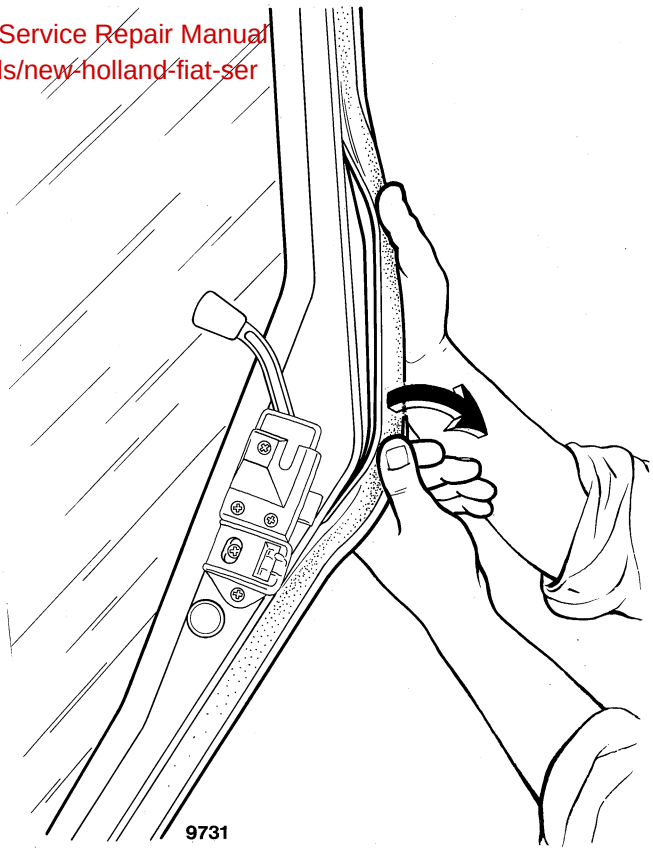
— Lubricate outer surface of weatherstrip and corresponding contact surface of door using soapy water.

— Place weatherstrip on glass and insert a string in the inner groove of the weatherstrip as shown in figure.

— Apply glass to outer side and, working from inside, pull the ends of the string to bring the weatherstrip over the door flange.



Applying sealer between weatherstrip and door flange



Removing door seal

Direction of force to be applied to door seal for removal arrowed.

NOTE - To facilitate removal press on glass from outside, progressively following the string as it is pulled out.

— Using a gun with suitable nozzle, apply a layer of black glass filler (high consistency, polybutene base with aliphatic thinner) both between weatherstrip and glass (page 27) and between weatherstrip and door flange.

2. Windshield replacement

Windshield removal necessitates prior removal of sun blind protection, sun blind and, preferably, also windshield wiper arm and wiper blade; the latter are retained by a nut on cab top.

For windshield replacement adhere to the instructions given in para. **1**.

3. Rear side window replacement

For rear side window replacement proceed as follows:

— Back off three glass retainers **G**.

— Replace glass.

— Install and tighten glass retainers.

— Ensure that glass is centralized on weatherstrip.

— To adjust glass position slacken glass control handle retaining screws. These screws may slide in elongated holes provided.

4. Front side window replacement

For front side window replacement adhere to the instructions given in para. **1**.