



DONKEY 2.0
4X4

OFFICINE CUCINI S.R.L.

Construction of vehicle fittings

Transformation of vehicles from two- to four-wheel drive

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TRANSLATED FROM ITALIAN

NP6 4X4

OPERATION AND MAINTENANCE MANUAL OF THE 4WD TRACTION SYSTEM

WARNING: Please read this manual prior to use.

Please keep this booklet as it will be required for each service under warranty.

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1 GENERAL INFORMATION

Please read this manual carefully before using the vehicle and prior to the performance of any service on the vehicle.

Dear Customer, we congratulate you on your purchase and we thank you for choosing our product.

We have prepared this manual to enable you to fully appreciate the qualities of our vehicle conversion from two- to four-wheel drive.

We are sure that, by operating it properly, you will be able to use it for a long time and in a manner that is fully satisfactory.

Sincerely.

OFFICINE CUCINI S.r.l.

1.1. Purpose of the manual

This manual is an essential and integral part of the vehicle.

The operators involved in the use of the vehicle must read this manual carefully and make sure to have understood every detail prior to using the vehicle. Should any problems arise, OFFICINE CUCINI are at your complete disposal for any support you may require.

Any **vehicle converted into a 4x4** in our workshops is accompanied by a specific **WARNINGS, OPERATION AND MAINTENANCE MANUAL** with the aim of providing the user (who is professionally suitable) with instructions for operation and maintenance.

The manufacturer excludes all liability for injuries to persons or damage to property resulting from the use of the vehicle and this manual in ways other than those provided for by OFFICINE CUCINI.

The manufacturer, with a view to continuous improvement, reserves the right to modify its products without prior notice and without making any reference to such modifications in this publication.

1.2 Identification data

The Officine Cucini type approval label is located on the pillar of the left-hand side access door to the driver's cabin, close to the door latch (Fig. 1).



Fig. 1

2 SAFETY DEVICES



Indicator light: an indicator light is located close to the control lever for operating the four-wheel drive and low-range gears. If this light comes on, it indicates that the four-wheel drive is engaged (Fig. 2).

Fig. 2

3 SAFETY RULES

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The use of the four-wheel drive is only permitted during operative phases.

Do not exceed the speed of 30 km/h when the four-wheel drive is engaged.

When driving down steep slopes engage first gear, the four-wheel drive in low-range gearing mode and proceed very slowly; heavy and prolonged use of the brakes can cause them to become completely inefficient.

The vehicle is not equipped with a central differential. For this reason, with the four-wheel drive engaged, steering on road surfaces with good grip (for example, dry asphalt) can be severely affected. It is necessary to proceed at low speed and with the utmost care.

On steep slopes, the driver must pay particular attention to the type of load being transported; the heavier it is the greater the risk of overturning.

To tackle particularly demanding off-road routes, it is recommended to disengage the ESC (Electronic Stability Control) system, allowing the vehicle to be more reactive on bumpy roads. The electronic controls cannot manage conditions that arise when driving off-road where the expert driver deems it necessary to provoke controlled instability to tackle particularly difficult routes (for example, the twisting manoeuvre). The ESC reactivates automatically when the speed exceeds 50 km/h, when first restarting the engine, or by pressing the button on the console. For any further details, please refer to the original operation and maintenance manual of the vehicle.

The ABS system cannot be disengaged under any circumstances. Intervention by the ABS system could result in a slightly delayed response from the brakes on bumpy roads. Always keep in mind that brake reaction time and stopping distances at very low speeds could be affected by the operation of the ABS.

4 DAMAGE PREVENTION

The conversion from two- to four-wheel drive changes the performance of the vehicle. In particular, with low-range gearing, the torque to the wheels increases making it possible to overcome steep slopes more easily. This should not lead to overloading the vehicle beyond the range indicated on the registration certificate and beyond the maximum technically admissible loads for the axles, as specified on the manufacturer's type approval plate (Fig.1).

Be careful when driving over terrain with high bumps and large stones to avoid damaging the vehicle.

Do not use the four-wheel drive on roads with both dry and wet asphalt; this could cause serious damage and premature general wear of the transmission components.

On steep slopes and particularly bumpy roads, engage the four-wheel drive before starting along this route.

Carry out manoeuvres for which tight turns are required only when four-wheel drive is disengaged.

Do not engage the four-wheel drive abruptly while rear wheels spin.

Switch from high-range to low-range gearing at a maximum speed of 10 km/h, keeping in mind that during this switch the engine doubles the number of revolutions at the same speed; engaging at a higher speed may cause serious damage.

Do not use the four-wheel drive to tow materials or other vehicles unless in compliance the regulations in force; never exceed the maximum admissible mass for the combination of vehicles (motor vehicle + trailer) referred to on the manufacturer's type approval plate (Fig.1).

If snow chains are installed, they must be of the same type and brand and put onto all four wheels.

The tyres must be of the same type and brand. If one of them is replaced, replace all the others at the same time as well.

Always keep the tyres at the correct pressure, which must be checked at regular intervals.

Do not drive through watercourses or lakes.

5 OPERATING RULES

With the four-wheel drive engaged, the power of the engine is distributed on all four wheels in the ratio 50:50 between front and rear wheels. The four-wheel drive is useful in the case of slippery road surfaces such as in the presence of ice, snow, mud, on particularly bumpy roads and for overcoming steep slopes.

5.1 Controls for operation

The functions of the four-wheel drive are all controlled by the lever located near the gear lever. The label (Fig. 2) indicates the positions of the lever and the respective traction mode (fig.4).

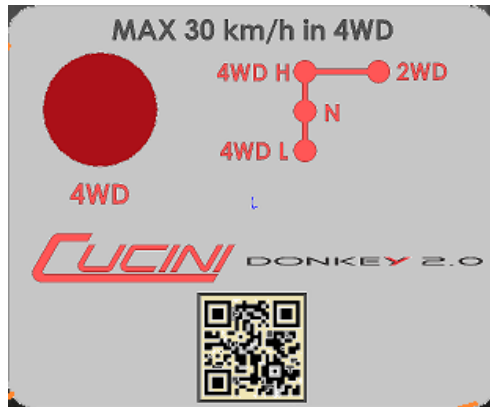


Fig. 4

Position	function
4x2H	Two-wheel drive with normal gears
4x4H	Four-wheel drive with normal gears
4x4L	Four-wheel drive with low-range gears
N	Neutral

Preferably, the operations must be performed when the vehicle is moving in a straight line with the clutch pressed down. If the control lever sticks, do not force it but keep applying pressure until the required function becomes engaged.

The transfer case is equipped with synchronizers, making it possible to change the mode while the vehicle is in motion.

5.2 Shifting gears with “low-range gearing” engaged

With the low-range gearing engaged, the transmission ratio is reduced by half, so the shift points are different from those of the normal gears. To achieve optimal performance, prevent damage to the engine and the transmission and to reduce fuel consumption, it is recommended to adhere to the recommendations in the following table:

gear shift		Recommended Speed
1→2	2→1	7 km/h
2→3	3→2	13 km/h
3→4	4→3	20 km/h
4→5	5→4	25 km/h

6 MAINTENANCE

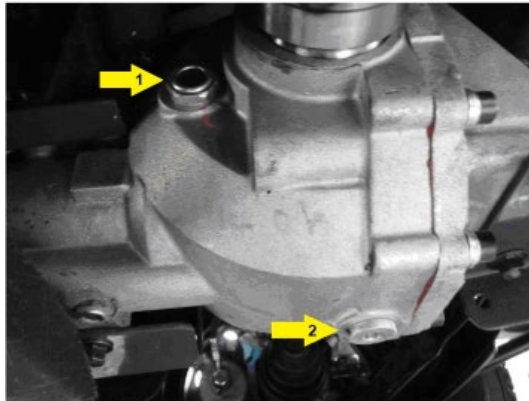
Maintenance must only be carried out by specialised personnel that has carefully read this manual, and must be performed in places with suitable space and equipment.

WARNING All maintenance work must be carried out at a workshop authorised by OFFICINE CUCINI s.r.l.

Scheduled maintenance operations must be carried out according to given deadlines and procedures.

In any event, the first three interventions must be performed by the deadlines set out by Piaggio for harsh driving conditions. For subsequent maintenance interventions, keep to the deadlines set out by Piaggio based on the driving conditions the vehicle has been subjected to.

6.1 Check and replacement of differential oil



DESCRIPTION

- 1 . Filling plug and level check
- 2 . Draining plug

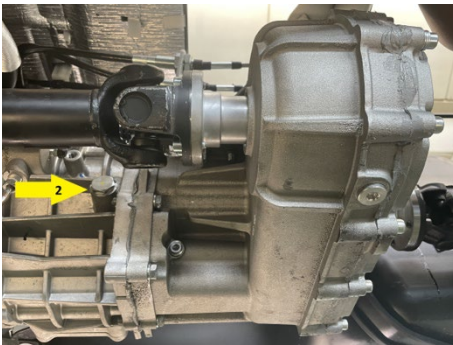
QUANTITY OF OIL: 0.65 litres
Type of oil: AGIP GEAR SYNT 75W-90
(API GL4; API GL5)

Procedure:

Remove plug (2), let the oil drain until completely empty. Removal of plug (1) facilitates the outflow of oil. When completely empty, put plug (2) back on and tighten it appropriately (see table with tightening torques). Fill with new oil using the type and quantity specified, to the level where the oil touches the filling hole when the vehicle is on level ground. Put plug (1) back on and tighten it appropriately (see table with tightening torques).

Any used fluids must be disposed of in accordance with the regulations in force and with the utmost respect for the environment.

6.2 Check and replacement of transfer case oil



DESCRIPTION

1 . Draining plug

QUANTITY OF OIL: 4.5 litres

Type of oil: AGIP GEAR SYNT 75W-90
(API GL4; API GL5)

Procedure

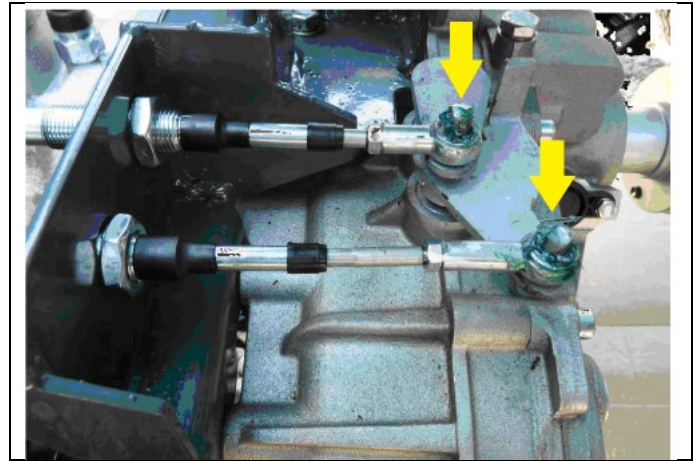
Remove plug (1), let the oil drain until completely empty. Removal of the filling plug facilitates the outflow of the oil. When completely empty, put plug (1) back on and tighten it appropriately (see table with tightening torques). Fill with new oil using the type and quantity specified to the level where the oil touches the filling hole when the vehicle is on level ground. Put the filling plug back on and tighten it appropriately (see table with tightening torques).

The transfer case shares the oil with the gearbox of the vehicle. Use filling hole (2) of the gearbox.

Any used fluids must be disposed of in accordance with the regulations in force and with the utmost respect for the environment.

6.3 Lubrication of control rod joints

The joints of the two control rods (engage/disengage 4x4 – engage/disengage low-range gearing) must be lubricated by applying a light layer of grease on the upper part.



6.4 Lubrication of drive shaft

Lubrication of the coupling and of the splines takes place through special grease nipples, in accordance with DIN 71412 and DIN 3404. If the lubrication points of a coupling are arranged facing each other, it will be sufficient to lubricate one of the two.

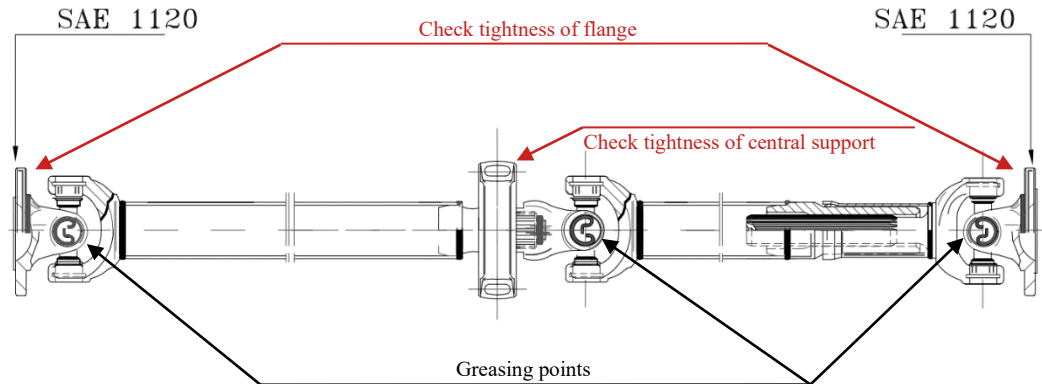
Always clean the greasing points prior to lubrication, so that the grease passes through the channels of the universal joint and reaches the four bearings of the coupling.

When lubrication is carried out correctly, the lubricant must bleed from the seals.

During the lubrication phase, avoid sharp blows with pressure greater than 2 MPa, which would damage the seals.

Use special grease (**Shell Gadus S3 V220C 2**) for high performance and heavy loads.

Top-up the lubricant regularly in accordance with the provisions set out in this manual.



6.5 Tightness check

Component	Bolts	Torque
Gearbox/transfer case oil drain plug	3/8"	37.5 ± 2.5 Nm
Gearbox/transfer case oil filling plug	3/8"	37.5 ± 2.5 Nm
Front crossmember (3+3 bolts)	M12	80 ± 8 Nm
Rubber supports of differential (3 bolts)	M10	55 ± 5 Nm
Support bolts of differential	M10	35 ± 2.5 Nm
Suspension control arm pivot bolts (1+1 bolts)	M12	80 ± 8 Nm
Strut Rod / Control Arm fastening nuts (2+2 bolts)	M12	80 ± 8 Nm
Bolts for bottom shock absorber bracket (2+2 bolts)	M12	90 ± 5 Nm
Tightening bolts for top suspension mount (1+1 bolts)	M10	55 ± 5 Nm
Drive shaft central support bolts (2 bolts)	M8	22 ± 2 Nm
Left side engine support bolts (4 bolts)	M10	55 ± 5 Nm
Rear engine support bolt	M10	55 ± 5 Nm
Drive shaft flange bolts (front 4+4 bolts, rear 4+4 bolts)	M8	35 ± 3 Nm
Steering box fixing bolts (4 bolts)	M10	40 ± 4 Nm
Steering head nuts (*)	M10	40 ± 4 Nm
Brake caliper support bolts (2+2 bolts)	M12	85 ± 10 Nm
Hub fixing bolts	M12	155 ± 15 Nm
Hub nut (**)	M22	216 Nm

(*) The steering heads are equipped with a split pin

(**) The hub nut has been struck (and deformed) to prevent loosening

6.6 Wheel alignment

At the first service, check the wheel alignment with a qualified tyre-dealer.

It is recommended to carry out further alignment checks whenever tyres are changed, if the vehicle has been subjected to particularly difficult routes repeatedly, in the case of collisions or accidental events affecting one or more wheels.



Scheduled Maintenance No. 1 – THE OWNER OF THE VEHICLE IS RESPONSIBLE FOR MAKING SURE THAT THE SCHEDULED MAINTENANCE IS CARRIED OUT IN A TIMELY MANNER

km. 2500 FRAME:

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DATE:

MODEL:

Tick after each operation:

- CHECK THERE IS NO LOSS OF OIL OR LEAKAGES
- REPLACE OIL OF FRONT DIFFERENTIAL AND GEARBOX
- LUBRICATE CONTROL ROD JOINTS ON TRANSFER CASE
- CHECK TIGHTNESS AND LUBRICATE TRANSMISSION
- CHECK TIGHTNESS OF CROSSMEMBER AND ENGINE SUPPORTS
- CHECK TIGHTNESS OF FRONT SUSPENSIONS
- CHECK TIGHTNESS OF FRONT DIFFERENTIAL CROSSMEMBER
- CHECK TIGHTNESS OF STEERING BOX
- ROAD TEST THE VEHICLE

STAMP & SIGNATURE OF DEALER /
AUTHORISED WORKSHOP

The timely and complete execution of the scheduled maintenance is necessary for maintaining the warranty conditions.

The completed scheduled maintenance form must be sent (photograph or scanned image) to info@cucini.it on the same day that it is carried out.

Scheduled Maintenance No. 2 – THE OWNER OF THE VEHICLE IS RESPONSIBLE FOR MAKING SURE THAT THE SCHEDULED MAINTENANCE IS CARRIED OUT IN A TIMELY MANNER

km. 7500 FRAME:

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DATE:

MODEL:

Tick after each operation:

- CHECK THERE IS NO LOSS OF OIL OR LEAKAGES
- REPLACE OIL OF FRONT DIFFERENTIAL AND GEARBOX
- ROAD TEST THE VEHICLE

STAMP & SIGNATURE OF DEALER /
AUTHORISED WORKSHOP

The timely and complete execution of the scheduled maintenance is necessary for maintaining the warranty conditions.

The completed scheduled maintenance form must be sent (photograph or scanned image) to info@cucini.it on the same day that it is carried out.

Scheduled Maintenance No. 3 – THE OWNER OF THE VEHICLE IS RESPONSIBLE FOR MAKING SURE THAT THE SCHEDULED MAINTENANCE IS CARRIED OUT IN A TIMELY MANNER

km. 15000 FRAME:

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DATE:

MODEL:

Tick after each operation:

- CHECK THERE IS NO LOSS OF OIL OR LEAKAGES
- REPLACE OIL OF FRONT DIFFERENTIAL AND GEARBOX
- CHECK TIGHTNESS AND LUBRICATE TRANSMISSION
- LUBRICATE CONTROL ROD JOINTS ON TRANSFER CASE
- ROAD TEST THE VEHICLE

STAMP & SIGNATURE OF DEALER /
AUTHORISED WORKSHOP

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The completed scheduled maintenance form must be sent (photograph or scanned image) to info@cucini.it on the same day that it is carried out.



Scheduled Maintenance No. 4 – THE OWNER OF THE VEHICLE IS RESPONSIBLE FOR MAKING SURE THAT THE SCHEDULED MAINTENANCE IS CARRIED OUT IN A TIMELY MANNER

km. **30000** FRAME:

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DATE:

MODEL:

Tick after each operation:

- CHECK THERE IS NO LOSS OF OIL OR LEAKAGES
- REPLACE OIL OF FRONT DIFFERENTIAL AND GEARBOX
- CHECK TIGHTNESS AND LUBRICATE TRANSMISSION
- LUBRICATE CONTROL ROD JOINTS ON TRANSFER CASE
- ROAD TEST THE VEHICLE

STAMP & SIGNATURE OF DEALER /
AUTHORISED WORKSHOP

The timely and complete execution of the scheduled maintenance is necessary for maintaining the warranty conditions.

The completed scheduled maintenance form must be sent (photograph or scanned image) to info@cucini.it on the same day that it is carried out.



Scheduled Maintenance No. 5 – THE OWNER OF THE VEHICLE IS RESPONSIBLE FOR MAKING SURE THAT THE SCHEDULED MAINTENANCE IS CARRIED OUT IN A TIMELY MANNER

km. 45000 FRAME:

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DATE:

MODEL:

Tick after each operation:

- CHECK THERE IS NO LOSS OF OIL OR LEAKAGES
- REPLACE OIL OF FRONT DIFFERENTIAL AND GEARBOX
- CHECK TIGHTNESS AND LUBRICATE TRANSMISSION
- LUBRICATE CONTROL ROD JOINTS ON TRANSFER CASE
- ROAD TEST THE VEHICLE

STAMP & SIGNATURE OF DEALER /
AUTHORISED WORKSHOP

The timely and complete execution of the scheduled maintenance is necessary for maintaining the warranty conditions.

The completed scheduled maintenance form must be sent (photograph or scanned image) to info@cucini.it on the same day that it is carried out.



Scheduled Maintenance No. 6 – THE OWNER OF THE VEHICLE IS RESPONSIBLE FOR MAKING SURE THAT THE SCHEDULED MAINTENANCE IS CARRIED OUT IN A TIMELY MANNER

km. 60000 FRAME:

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DATE:

MODEL:

Tick after each operation:

- CHECK THERE IS NO LOSS OF OIL OR LEAKAGES
- REPLACE OIL OF FRONT DIFFERENTIAL AND GEARBOX
- CHECK TIGHTNESS AND LUBRICATE TRANSMISSION
- LUBRICATE CONTROL ROD JOINTS ON TRANSFER CASE
- ROAD TEST THE VEHICLE

STAMP & SIGNATURE OF DEALER /
AUTHORISED WORKSHOP

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The timely and complete execution of the scheduled maintenance is necessary for maintaining the warranty conditions.

The completed scheduled maintenance form must be sent (photograph or scanned image) to info@cucini.it on the same day that it is carried out.

Scheduled Maintenance No. 7 – THE OWNER OF THE VEHICLE IS RESPONSIBLE FOR MAKING SURE THAT THE SCHEDULED MAINTENANCE IS CARRIED OUT IN A TIMELY MANNER

km. **75000** FRAME:

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DATE:

MODEL:

Tick after each operation:

- CHECK THERE IS NO LOSS OF OIL OR LEAKAGES
- REPLACE OIL OF FRONT DIFFERENTIAL AND GEARBOX
- CHECK TIGHTNESS AND LUBRICATE TRANSMISSION
- LUBRICATE CONTROL ROD JOINTS ON TRANSFER CASE
- ROAD TEST THE VEHICLE

STAMP & SIGNATURE OF DEALER /
AUTHORISED WORKSHOP

The timely and complete execution of the scheduled maintenance is necessary for maintaining the warranty conditions.

The completed scheduled maintenance form must be sent (photograph or scanned image) to info@cucini.it on the same day that it is carried out.

Scheduled Maintenance No. 8 – THE OWNER OF THE VEHICLE IS RESPONSIBLE FOR MAKING SURE THAT THE SCHEDULED MAINTENANCE IS CARRIED OUT IN A TIMELY MANNER

km. 90000 FRAME:

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DATE:

MODEL:

Tick after each operation:

- CHECK THERE IS NO LOSS OF OIL OR LEAKAGES
- REPLACE OIL OF FRONT DIFFERENTIAL AND GEARBOX
- CHECK TIGHTNESS AND LUBRICATE TRANSMISSION
- LUBRICATE CONTROL ROD JOINTS ON TRANSFER CASE
- ROAD TEST THE VEHICLE

STAMP & SIGNATURE OF DEALER /
AUTHORISED WORKSHOP

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The completed scheduled maintenance form must be sent (photograph or scanned image) to info@cucini.it on the same day that it is carried out.



Scheduled Maintenance No. 9 – THE OWNER OF THE VEHICLE IS RESPONSIBLE FOR MAKING SURE THAT THE SCHEDULED MAINTENANCE IS CARRIED OUT IN A TIMELY MANNER

km. 105000 FRAME:

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DATE:

MODEL:

Tick after each operation:

- CHECK THERE IS NO LOSS OF OIL OR LEAKAGES
- REPLACE OIL OF FRONT DIFFERENTIAL AND GEARBOX
- CHECK TIGHTNESS AND LUBRICATE TRANSMISSION
- LUBRICATE CONTROL ROD JOINTS ON TRANSFER CASE
- ROAD TEST THE VEHICLE

STAMP & SIGNATURE OF DEALER /
AUTHORISED WORKSHOP

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Scheduled Maintenance No. 10 – THE OWNER OF THE VEHICLE IS RESPONSIBLE FOR MAKING SURE THAT THE SCHEDULED MAINTENANCE IS CARRIED OUT IN A TIMELY MANNER

km. **120000** FRAME:

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DATE:

MODEL:

Tick after each operation:

- CHECK THERE IS NO LOSS OF OIL OR LEAKAGES
- REPLACE OIL OF FRONT DIFFERENTIAL AND GEARBOX
- CHECK TIGHTNESS AND LUBRICATE TRANSMISSION
- LUBRICATE CONTROL ROD JOINTS ON TRANSFER CASE
- ROAD TEST THE VEHICLE

STAMP AND SIGNATURE OF DEALER /
AUTHORISED WORKSHOP

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The completed scheduled maintenance form must be sent (photograph or scanned image) to info@cucini.it on the same day that it is carried out.