APPENDIX C

Hi-MATIC
AUTOMATIC GEARBOX
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C.1 GENERAL INFORMATION

This document addresses the main specifications correlated with the presence of the Hi-MATIC automatic gearbox on the vehicle as well as the indications that must be followed before outfitting commences.

See the Bodybuilders’ Manual on vehicles equipped with mechanical gearbox for other information.

C.2 LAYOUT

Some inevitable technical specificities (engine, driveshaft, bonnet cable and dashboard cable, gearbox additional cooling system) and the need to subject the vehicle to a new type-approval make it impossible to transform the vehicle from manual to automatic transmission, unless fully replacing the Engine/Transmission “Power Pack”.
C.3 REQUIREMENTS

**Gearbox release lever**

The lever can be positioned in a different location from its original mounting position, as long as:

- it compulsorily remains inside the cab;
- is accessible from the driver’s seat;
- does not entail great variation of the connected Bowden cable route.

**Bowden cable**

In order to maintain efficiency (performance) of the release system, the length of the Bowden cable must remain the same despite any new anchoring points and new layout.

Furthermore, the Bowden cable must never be bent to an angle below 150°.
Note  The warranty shall be voided if using different cable lengths or types.

**Additional devices**

The vehicle cannot be fitted with a PTO or transmission retarder if it mounts an automatic transmission.

**Propeller shaft**

An automatic transmission requires a specific driveshaft (in comparison to those used for mechanical transmissions) for what concerns:

- length;
- transmission connection flange;
- rubber joint;
- centring plate.

Any transformations that change these characteristics (such as: wheelbase variation) is under the full responsibility of the parties implementing them.

**Supplementary structures**

A specific crossbar is mounted to support the transmission from the rear (following Figure); despite this fact, in comparison to manual transmission vehicles, the comparability with structures installed behind the cab (e.g. crane) remains the same.

Careful verification is advised before proceeding.
Given that the original positions of the cooling assemblies/parts yield the best operating performance and thus efficiency, changes are strictly forbidden and any variations not recommended.

a) Transmission oil radiator and pipes

As the oil characteristics for automatic transmissions must carefully be kept intact, it is necessary to:

- maintain the oil level according to the requirements provided in the technical documents supplied with the vehicle;
- preserve the original connections of the pipes to the radiator and gearbox, in order to prevent extractions and possibility of oil pollution.

Slight displacements are allowed without any advance authorisation by IVECO only for needs of access during outfitting installation, making sure that no pipes are disconnected.

Consistent displacements, definitive and/or with any outstanding characteristics, must always be submitted to IVECO Engineering for approval, which will provide correct instructions for the new layout.
b) Fan

The fan intake air flow must not be altered or decreased in comparison to the original situation. Likewise, also the position of the fan on the radiator must remain the same.

C.4 WARNING INDICATORS

The Hi-MATIC gearbox temperature is monitored by sensors on a mechatronics module. The resulting signals are processed by the module in order to protect the transmission.

In detail:

- if $T \geq 120 \, ^\circ C$ a warning indication is displayed on the dashboard in the cab in the form of a red indicator light that switches ON, making it necessary to stop the vehicle due to transmission oil overtemperature;
- if $T \geq 125 \, ^\circ C$ the automatic transmission ECU forces the engine EDC to reduce torque/power (derating). Furthermore, the function that controls derating “GET_M_MOTMAX” forces vehicle operation only in 6th gear;
- if $T \geq 142 \, ^\circ C$ and the vehicle is still in motion, the automatic transmission ECU “shuts down” the engine and, thus, stops the vehicle.